1983

Bulletin Western Michigan University: Undergraduate Catalog 1983-1985

Western Michigan University

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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 79,802. Kalamazoo County has a population of 211,921.

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. 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.

It is the policy of Western Michigan University not to discriminate on the basis of race, sex, age, color, national origin, religion, or handicap in its educational programs, activities, admissions, or employment policies as required by Title IX of the 1972 Education Amendments, Executive Order 11246 and Executive Order 11375, and Section 504 of the Rehabilitation Act of 1973.

Copies of the complete Western Michigan University Undergraduate Catalog are available for examination at most high schools, libraries, other State universities, community colleges, and State government offices. Each entering student, freshman or transfer, is entitled to one copy without charge. Additional copies are available during business hours at Western’s Campus Bookstore, and on evenings and weekends at the Information Center in Seibert Administration Building. The cost is $2.00 each.

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

Vol. 78, No. 4, June 1983
Bulletin-Western Michigan University (USPS 078-980) is published four times annually: September, January, April, and June. Second class postage paid at Kalamazoo, Michigan 49008.
The cover design for this catalog was created by Susan Wascher, a 1977 WMU graduate who is manager of the Design Center in the Department of Art. It was taken from a computer graphic created by the late James Sleep, a former student and Computer Science Department instructor. Sleep, who was a founder of the WMU Computer Club, created many works of computer art and was the author of a search system for the WMU libraries.

The cover is only a portion of the original computer art, which is titled “Evolve.” As Western grows and evolves into the next century with its emphasis on functional computer literacy, it is hoped that Western students, new and old, will evolve personally and professionally in their understanding of the new age we are entering.

Text format for this catalog was designed by the Office of University Publications, David H. Smith, director, and produced on a word processing system.

Founded: 1903  
President: John T. Bernhard, Ph.D., LL.D.

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 reaccredited the following programs: bachelor’s and master’s programs for teacher preparation in elementary, secondary, special education, and K-12 education; educational specialist and doctorate in science education and special education; master’s program in reading; and master’s, educational specialist and doctorate programs in educational leadership and counseling. Western’s School of Library and Information Science is accredited by the American Library Association; its Department of Chemistry is accredited by the American Chemical Society. The School of Social Work is accredited by the Council on Social Work Education. The Department of Speech Pathology and Audiology is accredited by the American Boards of Examiners in Speech Pathology and Audiology. The Art Department is a member of the National Association of Schools of Art. The College of Business is accredited by the American Assembly of Collegiate Schools of Business.

Western Michigan University is a member of the American Association of Colleges for Teacher Education, American Council on Education, and American Association of State Colleges and Universities, and is on the approved list of the American Association of University Women.
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1983-84 Calendar

Fall Semester, 1983
August 26, Friday
Advising Day
August 27, Saturday
Final Registration
August 29, Monday
Classes Begin
September 5, Monday
Labor Day Recess
October 14, Friday
Classes Dismissed, 2 p.m.
(Laboratories excepted)
October 15, Saturday
Homecoming
October 21, Friday
Last Day to Withdraw Without Academic Penalty

Spring Session, 1984
April 28, Saturday
Final Registration
April 30, Monday
Classes Begin
May 25, Friday
Last Day to Withdraw Without Academic Penalty
May 28, Monday
Memorial Day Recess
June 20, Wednesday
Session Ends

Summer Session, 1984
June 26, Tuesday
Final Registration
June 27, Wednesday
Classes Begin
July 4, Wednesday
Independence Day Recess
July 27, Friday
Last Day to Withdraw Without Academic Penalty
August 17, Friday
Session Ends
Commencement (6 p.m.)

1984-85 Calendar

Fall Semester, 1984
August 27, Monday
Advising Day
August 28, Tuesday
Final Registration
August 29, Wednesday
Classes Begin
September 3, Monday
Labor Day Recess
October 5, Friday
Classes Dismissed, 2 p.m.
(Laboratories excepted)
October 6, Saturday
Homecoming
October 26, Friday
Last Day to Withdraw Without Academic Penalty

Spring Session, 1984
April 28, Saturday
Final Registration
April 30, Monday
Classes Begin
May 25, Friday
Last Day to Withdraw Without Academic Penalty
May 28, Monday
Memorial Day Recess
June 20, Wednesday
Session Ends

Summer Session, 1984
June 26, Tuesday
Final Registration
June 27, Wednesday
Classes Begin
July 4, Wednesday
Independence Day Recess
July 27, Friday
Last Day to Withdraw Without Academic Penalty
August 17, Friday
Session Ends
Commencement (6 p.m.)

Winter Semester, 1984
January 3, Tuesday
Final Registration
January 4, Wednesday
Classes Begin
February 24, Friday
Last Day to Withdraw Without Academic Penalty
March 5, Monday
Semester Recess
March 12, Monday
Classes Resume
April 16-20, Monday-Friday
Final Examination Week
April 21, Saturday
Semester Ends
Commencement (2 p.m.)

Winter Semester, 1985
January 3, Tuesday
Final Registration
January 4, Wednesday
Classes Begin
March 1, Friday
Last Day to Withdraw Without Academic Penalty
March 4, Monday
Semester Recess
March 11, Monday
Classes Resume
April 5, Friday
Recess—All Day
April 22-26, Monday-Friday
Final Examination Week
April 27, Saturday
Semester Ends
Commencement (2 p.m.)
### Spring Session, 1985
- **May 4, Saturday**
  - Final Registration
- **May 6, Monday**
  - Classes Begin
- **May 27, Monday**
  - Memorial Day Recess
- **May 31, Friday**
  - Last Day to Withdraw Without
    - Academic Penalty
- **June 26, Wednesday**
  - Session Ends

### Summer Session, 1985
- **July 2, Tuesday**
  - Final Registration
- **July 3, Wednesday**
  - Classes Begin
- **July 4, Thursday**
  - Independence Day Recess
- **August 2, Friday**
  - Last Day to Withdraw Without
    - Academic Penalty
- **August 23, Friday**
  - Session Ends
- **August 23, Friday**
  - Commencement (6 p.m.)

### October
- **October 3, Saturday**
  - Final Registration
- **October 6, Monday**
  - Classes Begin
- **October 27, Monday**
  - Memorial Day Recess
- **October 31, Friday**
  - Last Day to Withdraw Without
    - Academic Penalty
- **November 26, Wednesday**
  - Session Ends

### November
- **November 3, Saturday**
  - Final Registration
- **November 5, Monday**
  - Classes Begin
- **November 16, Monday**
  - Independence Day Recess
- **November 30, Friday**
  - Last Day to Withdraw Without
    - Academic Penalty
- **December 27, Wednesday**
  - Session Ends
Admission
Application for admission may be made for any semester or session. An acceptable record is required for degree admission. College preparatory or academic subjects are given maximum weight in evaluating applications from beginning students. Individual attributes and special abilities are also given consideration.

The University welcomes students transferring from all educational institutions and supports this posture by granting full credit for transferable and applicable courses whenever possible. Western Michigan University is fully cognizant and supportive of the vital role that community colleges fulfill in providing higher education to the people within the State of Michigan.

Transferring and re-entering (former) students may be admitted for any semester or session, provided their records are satisfactory and evidence presented indicates they will be academically successful.

The University recognizes the necessity for providing educational opportunities to people of all ages and levels of educational preparation. Consequently, wherever there is evidence to indicate that individuals will benefit academically and/or vocationally, these persons are encouraged to enter the University.

Admission to the University carries with it responsibility for meeting the standards of scholarship and conduct established by the students, faculty, and administration. Therefore, admission and enrollment may be canceled for any student who does not meet these standards.

Western Michigan University recognizes the need to make provisions and adjustments in admission standards that will enable potentially successful students from disadvantaged, culturally deprived, or economically impoverished segments of our society to gain admission, and to continue those special programs that are now in existence on Western's campus.

Methods Of Admission
Students may be admitted in the following ways:
1. Admission by secondary school diploma: A graduate of a regionally accredited high school, academy, or the equivalent may be admitted upon presentation of an acceptable written record.
2. Admission by examination: A person who does not qualify for admission by certificate may be admitted by passing examinations prescribed by the University, provided all other requirements are met.
3. Admission by advanced standing: A student wishing to transfer from another regionally accredited college, university, or community or junior college, may be admitted upon presentation of an acceptable written transcript of credit. This transcript must be official, and mailed directly from the institution previously attended to the Director of Admissions of Western. Transfer credits will be accepted only when they have been earned at a college which is accredited by the North Central Association of Colleges and Secondary Schools, or an equivalent regional accrediting organization. Each transfer applicant is processed individually, with a separate evaluation of their academic qualifications.
4. Permission to take classes as a guest: A person who is regularly matriculated and in good standing at another college may be granted permission to take classes as a guest student. The student assumes full responsibility for determining whether or not the courses taken at Western will apply toward his/her program of study. A guest matriculant is urged to have his/her potential courses approved in advance by the Registrar of the college or university to which the credits are to be transferred. The appropriate guest application form may be secured at the office of the Registrar at any Michigan college.
5. Readmission of former students: Former students in good standing will be admitted until such time as the University can no longer accommodate additional students. Students who have been dismissed from Western are expected to remain out of school at least one full fifteen-week semester. The Committee on Readmissions is concerned with the extent to which the dismissed student, who is applying for readmission, has resolved the causes of past academic difficulty. It is required, therefore, that the student include a written statement with the re-entry application.
6. Forgiveness Policy: Western Michigan University students who return to their studies after a ten-year or longer absence from Western will be re-admitted. At the student's election, previous hours earned at Western Michigan University, still-accepted in a similar program, will be counted toward meeting graduation requirements. However, no G.P.A. or honor points will be recorded for these hours. The grade point will be determined from work attempted after the re-entry date. At the student's request, appeals can be made through regular channels. All other University regulations apply. (This policy is only approved for undergraduate students, as The Graduate College has gone on record opposing any such policy.)
7. A student who registers and attends classes during the semester for which the initial application is made, although not attending succeeding sessions, will be eligible to register for up to one year following that semester. If the student does not register for the initial semester, a new re-entry application must be submitted.

A person who has current admission status and has been attending classes on- or off-campus will retain that status and all credits the student has attended classes within the last year.

Application for Admission
A Student Entering College for the First Time
Students graduating from an accredited high school in the State of Michigan, with an above-average record earned in a college preparatory program, will be admitted into most programs of study offered at the University until such time as admissions are closed.

1. To apply to Western by ACT/APP, an admissions system which uses the ACT assessment information to generate a preprinted application, a student must list Western's code number (2066) as one of his/her college choices when registering to take the ACT assessment. The University will evaluate the information and, if a student qualifies, will tentatively accept him/her for admission. He/She will then be asked to return the simplified ACT/APP form for official admission.
2. A prospective first-year student may secure an application from a high school counselor, principal, or the Undergraduate Admissions Office, and complete those parts for which he/she is responsible.
3. Final dates for receiving applications in the Undergraduate Admissions Office, for any entry period, are subject to change without notice.
4. Admission to the University will be judged on the basis of the high school record established prior to the date of application. A final record is, however, required at the close of the senior year to confirm the admission of all applicants admitted as early-entry candidates.
5. The student must be officially admitted before being counseled or enrolled. Therefore, all credentials must be in the Admissions Office in advance of registration.

A Student Who Has Attended Another College (Transfers)
Students transferring to Western from other institutions are expected to present a record which indicates their potential to complete graduation requirements satisfactorily.
A student must complete an application for degree admission. 

2. A complete official transcript from each of the colleges attended must be forwarded directly to the Admissions Office, Western Michigan University. Transcripts presented by the student are not considered official and will not be accepted for admission purposes.

3. If presently enrolled, the student should request that an official transcript be forwarded to the Admissions Office, Western Michigan University, immediately upon completion of the semester. Admission is not officially completed until the final transcripts are received.

4. An official transcript for students with tentative admission status must be received in the Admissions Office within ten days following the first day of the semester. Failure to provide such a record may result in the student being withdrawn from school.

5. Grades and honor or quality points are not transferred, but are recorded on the WMU permanent record. Courses completed at another college which are transferable will be accepted for credit only. Courses in which 'D's' or the equivalent thereof have been earned will not be accepted for credit where

6. The applicant's total cumulative grade point average (GPA) from all colleges attended must be forwarded to the Admissions Office, as well as all institutions from which an academic transcript has been deemed commensurate with existing admissions criteria. This status is not intended for use by students seeking degree admission, nor can it be used to circumvent University scholarship policies.

Academic transcripts are required of PTC applicants if requested by the Admissions Office.

The PTC student can register for any course for which the prerequisites have been met. PTC students are subject to normal scholarship standards. PTC students will, however, generally be limited to a maximum of two courses per semester or session.

PTC students may apply for admission to a degree program at any time. They will, however, be expected to meet the existing standards for admission.

American College Test Requirement for First-Year Students

The American College Test (ACT) is required of all new first-year students. The results of this test must be on file in the Admissions Office prior to enrollment. This requirement is met only after the results are received directly from the American College Testing Program. Neither high school nor student ACT reports satisfy this requirement. Prospective students should take the test late in their junior year or early in the senior year of high school. While all test results recorded on an application are considered by the Admissions staff in the evaluation process, no other achievement or aptitude tests will substitute for the ACT requirement.

English Competence of Students From Non-English Speaking Backgrounds

Prospective students whose native language is not English are required to demonstrate proficiency in the English language prior to enrollment in an academic program at Western Michigan University. The University strongly prefers examination through either the Test of English as a Foreign Language (TOEFL) or the Michigan Test of English Language Proficiency (MTELP). Exceptions to these standard tests will require special approval. In the event examination results are not available prior to the time the prospective student reports for orientation and enrollment, the student will be required to sit for the University-prescribed English proficiency examination.

To be eligible for qualified full-time enrollment in an academic program, a minimum total score of 85 must be achieved on the TOEFL examination. For the MTELP a minimum score of 85 percent is required.

Non-English Speaking Backgrounds

College Level Examination Program (CLEP)

The general CLEP examination is available to nontraditional students at WMU.

1. 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 basis (minimum of twelve semester hours) basis.

2. Nontraditional students may take the CLEP examinations only before completing fifteen hours after entering or reentering WMU.

3. The College Level Examination Program (CLEP) examination in the English language, which is administered through the College Entrance Examination Board.

College Level Examination Program

The general CLEP examination is available only to nontraditional students at WMU.

4. The College Level Examination Program (CLEP) examination is available only to nontraditional students at WMU.

5. The College Level Examination Program (CLEP) examination is available only to nontraditional students at WMU.

6. The College Level Examination Program (CLEP) examination is available only to nontraditional students at WMU.

7. The College Level Examination Program (CLEP) examination is available only to nontraditional students at WMU.
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 or more of any three areas, the humanities, social sciences, or natural sciences (excluding mathematics courses), from the Distributive 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 50 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 examination (with the writing sample) with a score of 660 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 480 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.*

*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.

Academic Advising

The faculty and administration of Western Michigan University feel 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 advisers who will help them plan their degree programs. Curriculum advisers offer academic advising which includes General Education requirements, specific curriculum requirements, career opportunities, etc. In addition, they offer academic counseling, 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 advisers will make referrals to other advising facilities and departmental advisers when it is appropriate. It should be emphasized that it is the student’s responsibility to arrange to meet with curriculum and/or departmental advisers.

A listing of curriculum advisers may be found in the Schedule of Classes, which is published each semester and session. Students not certain of their curriculum or adviser 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.

A. Academic Advising for Freshmen Students

Beginning students admitted for the Fall Semester will receive a written invitation to one of the Orientation sessions held during the summer. Those students admitted for the Winter Semester will be invited to an Advising-Registration Conference, which is scheduled during the advance registration (request for classes) period. During both of these programs, students will have the opportunity to meet with their curriculum advisers, at which time they will receive academic information and assistance in requesting classes for their first semester.

Students are strongly urged to attend the Orientation session or the Advising-Registration Conference for the comprehensive advising that is available, as well as important campus information that is discussed.

Students unable to attend one of the above conferences will have the opportunity to submit requests for classes. These appointments are on a limited basis, especially in the advance registration period (request for classes).

Freshmen admitted for Spring or Summer Sessions should make individual appointments with their curriculum and major/minor advisers, since no Orientation sessions or Advising-Registration Conferences are scheduled prior to the beginning of these enrollment periods.

B. Academic Advising for Transfer Students

Newly admitted transfer students will be invited to one of the Advising-Registration Conferences scheduled especially for transfer students. Invitations to these conferences, usually scheduled prior to the Fall and Winter Semesters, will be sent along with the Admission Certificates, or shortly thereafter.

At these conferences, 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 these conferences for comprehensive advising.

Transfer students who attend one of the Advising-Registration Conferences will have to make individual appointments with advisers. However, these are available only on a limited basis during the period of advance registration (request for classes). Students should be aware that the advising will be as comprehensive and may involve appointments with more than one adviser.

Students admitted for Spring or Summer Sessions should make individual appointments with curriculum and major/minor advisers.

College Advising Offices

College of Arts and Sciences, 2060 F reidmann Hall, 383-6122

College of Business, 250 North Hall, 383-3982

College of Education, 2305 Sangren Hall, 383-1989

College of Engineering and Applied Sciences, 2038 Kohrman Hall, 383-0545

College of Fine Arts, 2146 Dalton Hall, 383-0913

College of General Studies, 2090 Friedmann Hall, 383-0941

College of Health and Human Services, B-124 Henry Hall, 383-8116

Horns College, D-1 Hillside West, 383-1787

Uncollected Curriculum Counseling Center, 2510 Faunce Student Services Bldg., 383-1850

Career Education

All students are urged to make use of the career education facilities of the University for assistance in deciding upon a major and minor, planning for realistic entry-level jobs, and visualizing a career path for the future.

Career counseling and advising are available in the offices of the Testing and Education Services, the Counseling Center, University Placement Services, the Center for Women’s Services, and curriculum and departmental advisers. Two courses directly related to career education are offered. They are: A-S 100, Career Exploration and Development, and CAS 373, Communication Skills and Career Planning. The office of the University Placement Services offers seminars and workshops to assist students in their transition from college to the world of work.

A suggested schedule of career education activities follows:

Freshmen and Sophomores

This is the time for assessment and exploration.

1. Be clear as to why you are in college, what a college education means to you, and what you hope the return on your monetary and psychic investment will be.

2. 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 35 to 40 hours a week engaged in some activity for which you will be paid, you need to be clear about what settings you prefer—outdoors or indoors, working with people or alone, supervising or being supervised, routine duties or constant change, staying in one place or traveling. These are just a few of the factors that contribute to satisfaction with your work.

4. Explore various academic and career areas. Take classes that will introduce you to a discipline, talk with the faculty, research careers that might logically be associated with the discipline, talk to people currently employed in those careers that interest you.
This kind of information does not come automatically as a result of physically being on campus or attending classes. It is each student’s responsibility to seek it out. The choice of an educational direction or the reinforcement of a previous choice will be a natural result of these activities.

### Juniors and Seniors
This is the time to actively plan for the first job you will hold after graduation.

1. **Research various careers for which your educational background would be appropriate, or which interest you but do not require a specific educational background.** Read about them, talk to people who are actually working in them, attend meetings and join professional organizations related to them, read published articles written by and for these people, or volunteer to work in areas that interest you. Try to find part-time or summer employment so that you can get the feel of what it is like to actually do this kind of work.

2. **Get to know your major professors well.** They can give you a lot of support, many valuable tips, and may recommend you to future employers.

3. **Get involved in campus activities and/or classes** that will help you develop the skills you have identified as being necessary to excel in a career which interests you.

4. **Start getting familiar with the Placement Services.** Talk to the placement 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.

5. **Be able to articulate your job objectives—what you want to do, why you feel that you can do it well, and for whom you wish to do it.** This is vital information to be able to give potential employers.

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**, D-4 West Hillside 383-1650
- **College Advising Offices**, Departmental Advising Offices
- **Counseling Center**, 2510 Faunce Student Services Building 383-0955
- **University Placement Services**, B Wing Elsworth Hall 383-1710

### Student Fees

<table>
<thead>
<tr>
<th>Fees</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student fees are assessed on a credit hour basis. See Fee Revisions. Fees per credit hour for 1982-83 were as follows (they are shown respectively as general purpose, facility fees, and total):</td>
<td></td>
</tr>
<tr>
<td>Resident Undergraduate—Lower Division</td>
<td>$40.00 + $2.75 = $42.75</td>
</tr>
<tr>
<td>Resident Undergraduate—Upper Division</td>
<td>$44.00 + $2.75 = $46.75</td>
</tr>
<tr>
<td>Resident Graduate</td>
<td>$54.00 + $2.75 = $56.75</td>
</tr>
<tr>
<td>Non-Resident Undergraduate—Lower Division</td>
<td>$100.00 + $2.75 = $102.75</td>
</tr>
<tr>
<td>Non-Resident Undergraduate—Upper Division</td>
<td>$110.00 + $2.75 = $112.75</td>
</tr>
<tr>
<td>Non-Resident Graduate</td>
<td>$134.75 + $2.75 = $137.50</td>
</tr>
</tbody>
</table>

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

### Health Maintenance Fee

<table>
<thead>
<tr>
<th>Resident, Non-Resident, Graduate, and Undergraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Semester, 0.4 credit hours, $15.30*</td>
</tr>
<tr>
<td>Per Semester, 0 or more credit hours, $33.00*</td>
</tr>
<tr>
<td>Per Session, 0-2 credit hours, $7.30*</td>
</tr>
<tr>
<td>Per Session, 3 or more credit hours, $15.30*</td>
</tr>
</tbody>
</table>

*Plus appropriate user fees or the option to pay the full fee.

Student fees are subject to change by action of the Board of Trustees. Partial payments will not be accepted.

### Facility Fee

Each student is assessed, as a part of total student fees, $2.75 for the retirement of bonds issued to construct various student facilities.

### Student Assessment

A student assessment of $3.00 per semester and $1.50 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 is subject to approval by student referendum every two years.

### Late Registration Fee

A late registration fee of $20.00 will be assessed each student who registers after the final day of registration established by the Director of Registration. 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.

Graduate students, if not otherwise enrolled, are assessed for use of University facilities and staff services while completing a master’s thesis, specialist’s project, or a doctoral dissertation, at the rate of $25 a semester or $12.50 a session.

### Application Fee

A non-refundable payment of $15 must accompany each new application for admission as an undergraduate student or for admission to The Graduate College.

### Admission Validation Deposit

(Entering Students) A $50 deposit is required of all new beginning students, transfer students, and former students who have been reactivated for admission on campus for the Fall Semester. The deposit will be applied toward the student fees in each case and must be paid according to certain prescribed dates, which are provided by the Admissions Office at the time of admission. Refunds of this deposit are also made in accordance with detailed instructions received with the Certificate of Admission.

### Audit Fees

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

### Flight Instruction

Based on the courses taken, fees range from $250 to $1,800 per course. For specific course fee information, consult the Department of Transportation Technology.

### Graduation Fee

A graduation fee of $15 is due and payable at the time a diploma request is filed with the Records Office.

### Room and Board

Cost of room and board in 1983-84 is $1,116 for Fall Semester and $1,123 for Winter Semester, per student. The rate for room only in those residence halls that do not provide board is $451 for Fall Semester and $435 for Winter Semester, per student. A first payment of $150 to be applied toward room and board payment will be required with the signed contract before a housing assignment is made.

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 with residence hall offerings for the semester they anticipate coming to the University. Individuals returning to the University as re-entries, and newly admitted graduates...
students, will receive information by return mail upon requesting details from the Manager of Residence Hall Facilities, Student Services Building. Residence hall accommodations are not automatically made as a result of admission to the University.

Fee Revisions

Fees and costs pertain to the 1982-83 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 Controller.

Complete Withdrawal

From All Courses

Students completely withdrawing from all classes must report to the information desk at the Drop/Add Center or to the Academic Records 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 may call the Academic Records Office at 383-1770 during office hours or write to the Academic Records Office, Room 3210 Administration Building, for aid in processing their withdrawal. All written requests for complete withdrawal must bear the appropriate postmark date for consideration of the 100 or 50 percent refund (see refund policies).

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. An increase in credit hour load will result in an upward adjustment of the fee assessment.

Refund Schedule

Complete Withdrawal

100 percent of the student fees will be refunded through the end of the final day for adding a course. 50 percent will be refunded from the end of the final day for adding a course through the fifth week of classes in a semester or second week in a session. Refunds to students who made an admission deposit will be reduced by the $50 deposit.

Note: The refund date 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 Department of Transportation Technology.

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 or her attendance as a student, unless and until he or she demonstrates that his or her previous domicile has been abandoned and a Michigan domicile established.

2. The residence of a student who is a minor follows that of 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 or 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 or 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, who has obtained a permanent visa, and the spouse and minor children, who have met the other requirements herein for residence, may register as residents of this state.

Questions concerning residency should be directed to the Controller’s Office, 3082 Seibert Administration Building. Telephone: 383-1605.

Student Financial Aid and Scholarships

The office of Student Financial Aid and Scholarships administers the Long-Term Loan, the college Work-Study, the Pell Grant, the Supplemental Educational Opportunity Grant, the Short-Term Loan, Off Campus Part-Time Employment, the State and the University Scholarship Programs.

The information in this section describes Student Financial Aid programs and criteria applicable to awards made for the 1983-84 academic year. The University, therefore, is only responsible for administering these programs according to the description and the criteria applicable at the time.

Several sources of loans are available at Western, including long term loans under the National Direct Student Loan Program, Federally Insured Student Loan Program, State Direct Student Loan, the United Student Aid Funds, Inc., and Parent Loan.

Employment opportunities, both on-campus and off-campus, are available to students at Western. The on-campus opportunities include regular University employment and Work-Study job opportunities. (See Student Employment.)

The scholarship program at Western Michigan University is designed to reward academic excellence. Students in all curricula may apply for scholarships ranging from $100 to $1,350 a year.

Students at Western also have the opportunity to apply for scholarships in their special fields of interest through the several academic departments. These scholarships are offered by individuals and by local and national industries in recognition of Western’s unique contribution to certain fields of learning.

An application for a Scholarship is not required of incoming students (freshmen and transfers). Current WMU students seeking a scholarship, however, must complete a WMU Scholarship Application and submit it no later than February 15 for the following academic year. This application is available at the WMU Office of Student Financial Aid and Scholarships.

Scholarship applications must be completed by February 15. For further information please contact the Office of Student Financial Aid and Scholarships.

Information concerning fellowships may be obtained from The Graduate College.

In awarding financial assistance to students, Western utilizes the recommendations of the college Scholarship Service and the American College Testing. An entering student who plans to apply for a National Direct Student Loan, a Supplemental Educational Opportunity Grant, or a College Work-Study job must submit a copy of either their Financial Aid Form (FAF) to the college Scholarship Service or the Family Financial Statement (FFS) to American College Testing, designating that a copy of the result (FAF, FFS) be sent to Western Michigan University.
Financial Aid Procedures
In seeking financial assistance through the Office of Student Financial Aid and Scholarships, a student interested in a National Direct Student Loan, the College Work-Study Program, or the Supplementary Educational Opportunity Grant must take the following steps:
1. Submit a Financial Aid Form (FAF), a Family Financial Statement (FFS), or an Application for Federal Student Aid (AFSA) to the appropriate address on the statement. The FAF, FFS, or AFSA may be obtained from a high school principal or counselor or the Office of Student Financial Aid and Scholarships, and after February 1st.
2. Send the results, if an undergraduate, of the Pell Grant Application to the WMU Office of Student Financial Aid and Scholarships (See Pell Grant) and
3. Submit any additional information requested by the WMU Office of Student Financial Aid and Scholarships.
No WMU Aid Application is required for these programs.

Scholarships and Awards
Distinguished University Scholarships
National Merit Scholarships—Western Michigan University is an institutional member of the National Merit Scholarship Corporation and sponsors scholarships to National Merit finalists. Recipients are selected on the basis of high school recommendations, scholastic achievement and test scores.
Paul V. Sangren Scholarship—Funds contributed by alumni and friends have established this scholarship to honor the second president of the University. Recipients have traditionally been junior or senior level students selected by the University Scholarship Committee on the basis of their academic record and participation in extracurricular and community service activities. Applicants must have a minimum cumulative grade point average of 3.5 and file a scholarship application by February 28. Applications are available at the WMU Office of Student Financial Aid and Scholarships after February 1st.
Waldo-Sangren Scholarship Awards—Established to honor the University’s first two presidents, Dr. Dwight B. Waldo and Dr. Paul V. Sangren. To be considered for this award, a student must be a current WMU undergraduate with a minimum of 3.3 in academic achievement and submit a project proposal with evidence of imagination, originality, creativity. Maximum amount of the award for the academic year is $1,000. Applications and information concerning this award may be obtained from the Office of Student Financial Aid and Scholarships.

Western Michigan University Academic Scholarships
Academic scholarships of $500 per year are awarded to incoming freshmen, transfer and current WMU undergraduate students on the basis of academic criteria. No financial statement is required or used to determine eligibility or amount.
Incoming freshmen scholarships will be awarded to students with the highest combined ACT scores and high school grades. In order to receive consideration, prospective freshmen must submit their ACT scores to the University. Awards will be offered on a first come-first served basis until designated funds are expended. (Students awarded a scholarship will generally be notified no later than March 1). No scholarship application is required.
Transfer students with a 3.5 or better grade point average will be considered for a scholarship upon admission to the University. Awards will be offered until designated funds are expended. No scholarship application is required.
Currently enrolled WMU undergraduates will be considered for a scholarship on the basis of their grade point average. Applicants must have a minimum cumulative grade point average of 3.2 and file a scholarship application by February 28. Applications are available at the WMU Office of Student Financial Aid and Scholarships.

WMU Board of Trustees and the Higher Education Incentive Scholarships
These two scholarships were initiated to recognize the most outstanding in-coming Freshmen.
Eligibility Criteria:
1. One must be a “beginner” Freshmen (first time entry, not having attended any other post secondary institution.)
2. One must begin her/his academic year in the Fall semester.
3. One must be a Michigan resident defined by the university policy of residency.
The Office of Student Financial Aid and Scholarships selects candidates based upon data received from the Admissions Office which contains the Act Test Scores, predictive GPA, and the High School GPA. Candidates are invited to submit an application with other required data.
WMU Academic Achievers’ Awards
Initiated for the 1983-84 academic year, these awards are made to incoming freshmen based upon their high school G.P.A. The award is for $500 and is for one academic year only. Students who have been awarded any other scholarship as described in prior paragraphs, are not eligible for this award.

Sponsored Scholarships
The Clifford and Ella Chapman Scholarship—These scholarships are provided from funds of the trust established in 1964 by Mr. and Mrs. Clifford Chapman for the benefit of students with the following criteria: Bachelor of Journalism major, a closely related field. The review and selection of the applicants shall be conducted by the Chapman Foundation. Preference is given to female applicants. Preference for awards will be for those students with the highest academic standing at the University.

Engineering and Applied Sciences
These scholarships are available for students planning a career in business, engineering, or a closely related field. Preference is given to minority students enrolled in the College of Arts and Sciences. Applications and information may be obtained from the Office of Student Financial Aid and Scholarships. Preference is given to students enrolled in the College of Arts and Sciences.

College of Arts and Sciences
College of Arts and Sciences Merit Scholarships—The College of Arts and Sciences, from gifts to the Annual Fund of the University, offers Merit Scholarships for outstanding undergraduate students. These Merit Scholarships recognize and honor exceptional undergraduate students with unique abilities, exceptional aptitudes, unusual talents and achievements beyond the grade point average. Three annual awards of $1,000 (divided equally between the Fall and Winter semesters) will be offered to a student in each of the three divisions of the College. To
be eligible a student must have a declared major in one of the Departments of the College, have at least Sophomore standing (26 credit hours), have a minimum grade point average of 3.5, have fewer than 50 credit hours transferred from another college, and not have another WMU scholarship concurrently with this one. The Ment Scholarship is not renewable. Announcements of the scholarships and due dates for applications will be made in January of each year.

**Biological Sciences**

Hazel Winick Recognition Award—Sponsored by the Kalamazoo Garden Council, this award of $500 is available to upperclass Biology majors with a project in the areas of Botany or Ecology. Contact the Chairman, Department of Biology.

The Senior Award in Biology—Given to one, or sometimes two, outstanding seniors, in the judgment of the Biology faculty. All biology majors with a GPA of 3.50 or above are considered; no applications are required.

The Preprofessional Award in Biology—Given to the student deemed by the Biology faculty to be the outstanding biology major in a preprofessional curriculum. Students with a GPA of 3.50 or above are considered; no applications are required.

**Biomedical Sciences**

The Merrill Wiseman Award—This award was named in honor of a distinguished teacher who was on the Biology faculty for forty years. It is made annually to a student outstanding in the field of microbiology.

The Distinguished Undergraduate Award—This award is given to the student judged by the BMED faculty to be the outstanding senior Biomedical Sciences major.

**Chemistry**

The William McCracken Award—This award was named in honor of the first head of the Chemistry Department. It is given to a senior who, in the opinion of the Chemistry staff, has shown the greatest aptitude in the field of basic chemistry.

**Communication Arts and Sciences**

Felder Broadcasting Award—Sponsored by the Felzer Broadcasting Company, this award provides financial assistance to outstanding broadcasting/ mass media students.

**Economics**

The Wall Street Journal Award—This award is given annually to the outstanding senior in economics.

**English**

The George Sprout Award in English—This award is given to outstanding English majors in the junior and senior classes. Up to $500 may be given to a second semester junior who must use the award during his/her senior academic year. In addition, awards of up to $100 may be given to outstanding English majors in the graduating class.

The Jean and Vincent Malmstrom Scholarship—The purpose of this $500 annual award, provided through the generosity of Mr. and Mrs. Vincent Malmstrom, is to stimulate an interest in the English language and its relevance to the teaching of English and the language arts. Applicants must be senior or second semester junior status at WMU, have a minimum overall grade point average of 3.30, be an English major with an English language emphasis, and be planning to enter the teaching profession. Information and applications may be obtained from the English Department.

**Environmental Studies**

The Environmental Studies Scholarship—This award, made possible by WMU recycling efforts, is made to Environmental Studies majors who have completed ENV 110 and at least two required classes in the concepts component. The award(s) will be presented annually for $300. The applicant must exhibit scholastic ability and strong potential for environmental service. Applications may be obtained from the Environmental Studies Office.

**French**

French Award—The French Embassy gives an annual award to the outstanding student of French in the graduating class.

**Geology**

Geology—Department of Geology Development Fund scholarships in Geology and Amoco Oil Co. Scholarships in Geophysics in variable amounts are available. Senior Honors Students in Geology and Geophysics to outstanding seniors are awarded annually.

The Kalamazoo Geological & Mineral Society Scholarship—This award is provided financial assistance to a qualified Geology major of junior status who plans to enroll in the six-week summer field course. An honorary one year membership in the Kalamazoo Geological and Mineral Society accompanies the variable monetary stipend. Information and applications are available from the Geology Department Chairperson.

**History**

The James O. Krauss History Award—This award was established in honor of a distinguished scholar and teacher who was on the faculty for thirty years and was head of the History Department for eleven. It is awarded annually to the senior history major who has maintained the highest record in history during his or her university career.

The Smith Burnham History Award—This award was established to honor a widely known speaker and head of the department that supports the scholarship was established by the former Head of the Language Department, the late Mathilde Steckelberg, in memory of the late Mathilde Steckelberg, who was a widely known speaker and head of the department.

**Mathematics**

The Senior Mathematics Award—An award given to the senior mathematics major judged by the Department of Mathematics to have exhibited the highest proficiency and promise in mathematics.

**Mathematics**

The Grover Bartoo Memorial Scholarship—Awarded annually to the outstanding junior mathematics major.

The Dr. John P. and Nora Everett Award—Annually awarded to seniors showing outstanding promise as teachers of secondary school mathematics.

**Mathematics**

Annual prizes are awarded to freshmen students of mathematics scoring highest on a competitive examination.

**Languages and Linguistics**

Matthilde Stockeberg Scholarship—This endowed fund, established through the generosity of the late Matthilde Stockeberg, former Head of the Language Department, enables the Department of Languages and Linguistics to recognize outstanding scholarship performance by students majoring in French, German, or Classical Languages. Academic performance and potential in the particular language area will be stressed in the selection of recipients for the four annual, nonrenewable awards.

**Student Financial Aid and Scholarships**

Victor Coutant Award in Classics—A generous gift by Dr. Victor Coutant, Professor Emeritus of Modern and Classical Languages, has made it possible for the Department of Languages and Linguistics to present an annual cash award to an outstanding student in Latin or Greek, as selected by the faculty of the Classics section of the Department. Performance in Mythology, Ancient History, and/or Ancient Philosophy may also be considered in the selection.

**German**

Hermann E. Rothfuss Award in German—An annual cash award for an outstanding student in German has been established in the name 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 Languages and Linguistics. Academic performance and contributions to German-American understanding will be considered in the selection of the student to receive the award.

**Travel/Study Abroad**

To encourage more foreign language students to travel and study abroad, two awards of $400 each will be granted annually by the Department of Languages and Linguistics. Recipients must have an academic record of 3.5 or better in a declared major or minor in the Department and must have submitted an acceptable individual project to be pursued during the travel and study abroad.

**Student Financial Aid and Scholarships**

Departmental Section Awards—The following awards are presented annually by the individual sections of the Department of Languages and Linguistics.

**Latin**

Linguistics. Academic performance and contributions to German-American understanding will be considered in the selection of the student to receive the award.

**Political Science**

Arden J. Elsasser Memorial Scholarship—This scholarship has been established by the League of Women Voters of the Kalamazoo area and by the generosity of Mr. and Mrs. Vincent Malmstrom, who gave faithful service to this organization and contributed to the Kalamazoo community. The award, which is made annually, normally will be $300. This amount may vary depending on the availability of funds. Application is open to undergraduates and graduates in Political Science at Western Michigan University. Applicants must have a minimum grade point average of 3.0 overall and in Political Science, and must have second semester junior standing by the end of the term in which the award is granted. Contact the Chairman, Political Science Department, for information and applications.

**Environmental Studies**

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by Mrs. Zoa D. Shilling in memory of her husband, Dr. D. C. Shilling, first Chairman of the Department.

Zoa D. Shilling and D. C. Shilling Junior and Senior Scholarship Awards—Annual awards to outstanding majors in Public Administration and 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 in memory of her husband, Dr. D. C. Shilling, first Chairman of the Political Science Department, and because of her own interest in helping political science students and encouraging scholarly achievement.

George Klein Memorial Scholarship Award—An annual award to the Political Science major who has demonstrated a high level of scholarly achievement and intellectual interest in the fields of international relations and comparative politics. The fund that supports the scholarship award was established in memory of Dr. George Klein through contributions at the time of his death, December 5, 1981. Dr. Klein was a scholar of international reputation and long-time faculty member in the Department of Political Science whose teaching and research focused on international relations and the Soviet Union and Eastern Europe.

Philosophy

The Robert Friedmann Philosophy Prize—This award was established by the Department of Philosophy in honor of the late Robert Friedmann upon his retirement. The award is given annually to the outstanding senior philosophy student.

Physics

Paul Rood Fellowship—The generous gift of Dr. and Mrs. Paul Rood has made it possible to provide financial assistance for outstanding students majoring in physics amounts up to $400. Preference will be given to entering freshmen. These stipends may be continued for students maintaining a high scholastic record in physics, mathematics and related sciences. Application forms may be obtained from the Department of Physics.

The Charles J. Wilcox Memorial Award—This award, made possible by family and friends of Charles J. Wilcox, is given annually to the outstanding senior graduating senior majoring in physics. Copies of a Handbook of Chemistry and Physics are awarded annually to the best students completing the sequence of calculus-based introductory physics courses.

Psychology

Departmental Apprenticeships and Assistantships—The Department of Psychology offers undergraduate teaching apprenticeships and undergraduate practicum assistantships to advanced undergraduate students desiring academic excellence and leadership ability within the Department's program. Further information may be obtained from the Psychology Department.

Sociology

Leonard C. Kercher Award—Through the generosity of Dr. Kercher, founder and long-time head (1940-72) of the Department of Sociology, and friends, assistantships of at least $250 per semester are available for outstanding sociology and criminal justice students each year.

Undergraduate Assistantships—The Department awards up to ten assistantships during the Fall semester each year to sociology and criminal justice students who wish to become more involved in the Department’s activities and projects. These students receive a modest stipend, and are expected to work for a faculty member or department project.

College of Business

General Scholarships Open to All Students in the College of Business

American National Bank Scholarships—An annual award in memory of Robert M. Rogge given to a student enrolled in any curriculum in the College of Business. The award is based upon scholarship ability and financial need. Apply directly to the College of Business.

First Federal Savings and Loan Association of Kalamazoo Scholarship—An annual award to any student majoring in business administration curriculum. The student must exhibit scholastic ability and financial need. Preference is given to students who are residents of western and southwestern Michigan. Apply directly to the College of Business.

College of Business Achievement Scholarships—Application forms are given to outstanding students enrolled in a college of Business course. The awards are based upon a high grade point average in the college of Business curriculum. The recipients must exhibit financial need. Apply directly to the College of Business.

Al Pugno Scholarship—An endowed fund in memory of Al Pugno supports these scholarships. One or more annual awards are given to students enrolled in any college of Business curriculum. The recipients must exhibit financial need. Apply directly to the College of Business.

Arnold E. Schneider Scholarship Award—The Gamma Tau Chapter of Alpha Kappa Psi awards twice annually a Pledge Scholarship to the individual who during the semester in which he is a pledge attains the highest grade point average of any pledge. The chapter also awards twice annually an Active Member Scholarship. This scholarship is awarded to the individual member who has accumulated the highest grade point average for his last two years of work at Western Michigan University. Apply directly to Gamma Tau Chapter of Alpha Kappa Psi.

Accountancy

Alexander Grant and Company Scholarship—Alexander Grant and Company, Certified Public Accountants, offers two annual awards for student fees. The awards are given annually to one or two outstanding seniors majoring in accounting.

Copies of a Handbook of Accounting and Financial Aid are awarded annually to the best students completing the sequence of calculus-based introductory accounting courses.

McGladrey Hendrickson and Company Scholarship Award in Accountancy—An annual award given by McGladrey Hendrickson and Company, Certified Public Accountants, to an outstanding senior majoring in accounting. Applicants must have completed or be in the process of completing their junior year. Apply to the Department of Accountancy, College of Business.

Touche Ross and Co. Accounting Scholarship—An annual award to a senior majoring in Accountancy. The scholarship is the primary consideration in selection of applicants to receive the award. Contact the Department of Accountancy, College of Business.

Business Information Systems

Bowman & Branchaw Business Communication Scholarship and Award for Excellence—These awards are offered each fall and winter semester to students majoring in accounting or minorin Business Communication. Selection is based on achievement in business communication, contribution to Alpha Beta Chi, professional goals, and scholastic record. The highest ranking applicant will be offered the Communication Scholarship, the runner-up will be offered the Award for Excellence. Information is available from the Department of Business Information Systems.

Data Processing Management Association Scholarship—The Southern Michigan Chapter of DPMA offers this award in the fall semesters for a Computer Information Systems major who is active in WMU’s student chapter of DPMA and has a GPA of 3.25 or better. Contact the Department of Business Information Systems, College of Business, Western Michigan University.

Professional Secretaries International (PSI) Scholarship—This award is offered each fall to a student preparing to be an administrative secretary or office supervisor. Open to any student in the Administrative Systems curriculum having an academic average of B or higher and the recommendation of the faculty sponsor based on character, scholarship, and financial need. Contact Department of Business Information Systems, College of Business, Western Michigan University.

Roseanne Schneider Memorial Scholarship—The Roseanne Schneider Memorial fund offers one annual award to a senior student majoring in the teaching of business subjects. The award will be made...
Achievement Award—This following school year to declared marketing faculty members to become eligible to other worthy endeavors. Preference will be through contributions to student clubs may scholarship, service to the department, or awarded during the Winter semester for the given to Management majors, but others who

Dow Marketing Scholarships—Five

Awards are available in amounts of $250 per semester for a total of $1,500, including a year towards a master’s degree. Apply to Dr. William F. Morrison, Chairperson.

Issa Finance Scholarship—This scholarship is open to students pursuing a Finance major in the Department. The scholarship is based on academic achievement and financial need. The amount of the award is $500 per academic year. Apply to Dr. A. D. Issa in the Department Office.

Kalamazoo Ad Club Scholarship—An academic year scholarship is awarded to an undergraduate with an interest in pursuing a career in the insurance profession. The award is made on the basis of scholastic ability and moral character and may be renewed at the option of the donor. The amount of the award is $500 per year, but the award is given only in the following year. Apply to Dr. W. L. Burdick, in the Department Office.

James M. Wilson, Sr. Insurance Scholarship—An academic year scholarship of $675 is available to an undergraduate with an interest in pursuing a career in the insurance profession. The award is made on the basis of scholastic ability only and may be renewed at the option of the donor. Apply to Dr. W. L. Burdick, Department of General Business, Finance Area.

Risk and Insurance Management Society Scholarship—The Western Michigan Chapter of this society offers a $1,000 academic year scholarship to a student interested in pursuing a career in Insurance or Risk Management. Students from colleges and universities in the state of Michigan are eligible for the award based on academic performance, work experience, and need. Apply to Dr. William Burdick in the Finance and Commercial Law Department.

Management

The Department of Management Achievement Award—This award is given during the academic year to those 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 Department of Management faculty members to become eligible to receive this award.

Marketing

Dow Marketing Scholarships—Five scholarships in the amount of $500 each are awarded during the Winter semester for the following school year to declared marketing majors who have completed 55-95 hours, who are carrying a minimum of 12 semester hours and whose cumulative grade point averages are at least 2.5. Also considered are work experience, participation in University and community activities, and faculty recommendations. These scholarships are designated for qualified minority students. Awards are available in amounts of $250 per person during registration for the Fall semester and again during registration for the Winter semester, provided the minimum grade point average of 2.5 and course load of 12 semester hours are maintained. Application forms can be obtained from and should be returned to the Marketing Department Secretary, 224 North Hall by February 15.

T. William R. Biggs/Gilmore Associates, Inc. Advertising Scholarship—An annual academic year scholarship of $250, including an advertising internship opportunity, is awarded to a declared advertising major who has completed 55-95 hours, who is carrying a minimum of 12 credit hours and whose cumulative grade point average is at least 3.0. Also considered is a demonstrated career interest in advertising-marketing, work experience, participation in University and community activities, and faculty recommendations. The award is made during the Winter semester for the following year. Applications can be obtained from and should be returned to the Marketing Department Secretary, 224 North Hall, by February 15.

Southwestern Michigan Association of Purchasing Management Scholarship—One scholarship in the amount of $500 is awarded during the Winter semester for the following school year to declared Industrial or General Marketing majors of at least junior class standing (56 hours) but less than 96 hours who are carrying a minimum of 12 semester hours and whose cumulative grade point average of 2.5 course load of 12 semester hours, and registration for Industrial or General Marketing major have been maintained. Application forms can be obtained from and should be returned to Dr. Brian G. Long, 231 North Hall, by January 31. Final selection will be made by the board of directors of the Southwestern Michigan Association of Purchasing Management.

Louis P. Johnson Advertising Scholarship—An annual advertising scholarship of $500, sponsored by Johnston and Associates, Inc., was awarded during the Winter semester for the following school year to a declared advertising major who has completed 55-95 hours who is carrying a minimum of 12 credit hours and whose cumulative grade point average is at least 3.0. Also considered is a demonstrated career interest, marketing, work experience, participation in University and community activities. Application forms can be obtained from and should be returned to the Marketing Department Secretary, 224 North Hall, by February 15.

Jack A. Stephens Advertising Scholarship—An annual advertising scholarship of $300, sponsored by the Kalamazoo Ad Club (JAF), was awarded during the Winter semester for the following school year to a declared advertising major who has completed 55-95 hours who is carrying a minimum of 12 credit hours and whose cumulative grade point average is at least 3.0. Also considered is a demonstrated career interest in advertising-marketing, work experience, participation in University and community activities. Application forms can be obtained from and should be returned to the Marketing Department Secretary, 224 North Hall, by February 15.

Ron Haskell Advertising Scholarship—An annual advertising scholarship of $100, sponsored by the Kalamazoo Exchange Club, was awarded during the Winter semester for the following school year to a declared advertising major who has completed 55-95 hours, who is carrying a minimum of 12 credit hours and whose cumulative grade point average is at least 3.0. Also considered is a demonstrated career interest in advertising-marketing, work experience, participation in university and community activities. Application forms can be obtained from and should be returned to the Marketing Department Secretary, 224 North Hall by February 15.

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 $500 to $1,000, are divided equally between Fall and Winter semesters. A minimum grade point average of 3.0 is required for all awards. Following is a list of the scholarships available and the amount of each:

Zora Ewell Memorial Scholarship—One (1) award of $1,000.

Beulah and Harold McKee Scholarships for Undergraduates in Early Childhood Education—Four (4) awards of $500 each.

Menzel Tate Undergraduate Scholarships—Four (4) awards of $500 each.

Dorothy H. and Cora Hurd Charles Scholarships—Four (4) awards of $500 each.

Kenneth F. Simon Memorial Scholarships in Adult Education—Four (4) awards of $500 each.

College of Education Undergraduate Scholarships—Four (4) awards of $500 each.

Further information regarding these scholarships is available in the College of Education Dean’s Office, 2306 Sangren Hall.

College of Engineering and Applied Sciences

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

Agriculture

The Lee D. Baker Scholarships—Named to honor the former Chairman of Western’s Agriculture Department, these scholarships are available to Agriculture majors selected on the basis of academic record, financial need, leadership, work experience, and participation in school and community activities. Stipend amounts will vary.

Information and application materials may be obtained from the College of Engineering and Applied Sciences.

Engineering Division

American Foundrymen’s Society Scholarship—The Central Michigan and Detroit Chapters of the Society offer several scholarships each year to students in technical or related curricula. Apply to the Industrial Engineering Department.

Duraiamatic Scholarship—The Duriamatic Corporation offers several scholarships each year to students in technical or related curricula. Apply to the Industrial Engineering Department.
Scholarship—The Foundation offers a number of scholarships each year to any technical student having an interest in the foundry industry. Apply to the Mechanical Engineering Department.

H. H. Harris Foundation—The Foundation has made funds available to students in technical programs with an interest in the foundry industry. Awards range from $300 to $2,000. Apply to the Mechanical Engineering Department.

Michigan Society of Professional Engineers—One $500 scholarship will be awarded annually to a high school senior selected from applicants in the NSPE/MSPE Scholarship program and who are accepted for admission to the Industrial Engineering Department. One $500 scholarship will be awarded annually to a female or minority high school senior selected from applicants in the NSPE/MSPE Scholarship program and who are accepted for admission to any engineering program. Applications should be mailed directly to the MSPE SCHOLARSHIP FUND, Paper Composite Society of Professional Engineers, P.O. Box 10204, Lansing, Michigan 48901.

Giffels Associates Scholarship—$1,000 annual, nonrenewable scholarship is offered by the Giffels Associates of Southfield Michigan to an engineering student in the Electrical, Industrial, and Mechanical Engineering Departments with a minimum grade point average of 3.0. Preference will be given to underrepresented groups in the field of engineering. Application should be made directly to the College of Engineering and Applied Sciences.

Food Distribution

Food Distribution Scholarships—Each year Western offers a number of scholarships to qualified students majoring in Food Distribution. Amounts are variable. Applications may be obtained from the Department of Consumer Resources and Technology.

Scholarship of The NFBA Foundation Inc.—This scholarship grant is offered to an undergraduate in the Food Distribution curriculum who is interested in making a career in food distribution. The amount of the scholarship is $750. Application is offered for one year only. Apply directly to the Distributive Education Department. For 1983-84 the amount will be $1,000 in honor of Roy C. Osman.

Julie Kravitz Memorial Scholarship—This award is granted each year to a student with a major in Food Distribution. Awarders must have a minimum grade point average of 3.00 (4.00 scale) and be full-time WMU students. Applications are accepted each September, with the scholarship awardee being announced in late October. This award is renewable.

Distributive Teacher Education

Distributive Teacher Education Scholarship—The Consumer Resources and Technology Department awards a $200 scholarship each academic year to a first-semester Distributive Teacher Education major. Applications may be obtained from the department office.

Home Economics

Chrysalis I. Grady Scholarships—An endowment from the estate of Chrysalis I. Grady has made possible two annual scholarships of $400 to students majoring in curricula within Home Economics. One scholarship is presented for academic performance, the other to recognize personal achievement and contributions to the Department. Information is available from the Home Economics Area and the Consumer Resources and Technology.

Industrial Technology and Education

Clausing Corporation—Special Products Group Scholarship-The Clausing Corporation-Special Products Group offers a scholarship to stimulate interest in Industrial Education or Technology. The scholarship is open to all graduating seniors in Michigan high schools who have had at least one course in Industrial Arts and who plan to enter the Industrial Education or Technology curriculum. The award is for $600 the first year and is renewable for an additional three years for a total of $2400. 

S.P.E.—Special Products Engineers—Scholarships—The Society of Plastic Engineers offers two scholarships each year. Provisions include free student membership to S.P.E., open invitation as a guest to monthly sectional dinner meetings, and commitment from the student to pursue Plastics Education or employment in the industry. Application should be made directly to the Industrial Technology and Education Department. 

Industrial Technology and Education Award—A plaque is presented to the outstanding senior student in the department.

Military Science

Military Science R.O.T.C. Merit Scholarships—Three, two and one year scholarships are available to qualified male and female students. Each scholarship provides for all tuition, textbooks and laboratory fees in addition to a subsistence allowance of $100 per month for up to nine months of each school year. The three and two-year scholarships are open to all qualified University students whether or not they are currently enrolled in R.O.T.C. Students who desire scholarship applications or other information should contact the head of the Military Science Department prior to February 1.

Military Science Grants—All advanced course R.O.T.C. cadets receive $100 per month for up to ten months of each school year.

Military Science Awards—The University President’s Award is presented annually to the Cadet Corps Commander. Academic and Military Achievement Awards are presented to outstanding cadets in each class year group. The Outstanding Summer Camp Award is presented to the Western Michigan University cadet achieving the highest score at the annual Advanced R.O.T.C. Summer Camp.

Paper Science and Engineering

Merit scholarships ranging in size from $200-$850 a semester for Michigan residents and $420-$1,700 for non-Michigan residents are available to students majoring in the Paper Science and Engineering and Environmental curricula. Grants are given to cover tuition costs within the Paper Science and Engineering Department. The scholarship program is supported through the Paper Technology Foundation, Inc., and the organizations listed below.

Beginning students interested in physical science, 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 are awarded on a semester-to-semester basis, on the basis of superior academic achievement or promise. Conditions for renewal of the scholarships include the maintenance of at least a 2.50 cumulative grade point average and continued enrollment in one of the curricula of the Department of Paper Science and Engineering.

Members of the Paper Technology Foundation, Inc.

Accuray Corporation
Albany International Corporation
Allied Paper Incorporated
American Can Company
American Cyanamid Company
 Anglo-American Clays Corporation
Appleton Paper
Asten-Goup, Inc.
Beloil Corporation
Bergstrom Division
Betz Paper Chem., Inc.
Bird Co. Charitable Fund
The Black Clawson Company
Blandin Paper Company
Buckman Laboratories, Inc.
Cameron-Walcron, Midland-Ross Corporation
Cargill, Incorporated
C-E Power Systems
C-E Process Equipment
Champion International Corporation
Ciba-Geigy Corporation
Clark & Vicario Corporation
Consolidated's Civic Foundation, Inc.
Container Corporation of America
CPC International, Inc.
Corn Products Division
Crown Zellerbach Corporation
Diamond International Corporation
Dow Chemical U.S.A.
Drake Brothers Company
Eastman Kodak Company
Engelhard Minerals and Chemicals Corporation
Federal Paper Board Company, Inc.
Freeport Kaolin Company
French Paper Company
Georgia Kaolin Company
Georgia-Pacific Corporation
P.H. Glafelter Company
Gottesman-Central National Organization
Grain Processing Corporation
Hammermill Paper Company
Hercules Incorporated
James River Corp.
J. M. Huber Corporation
Ingersoll-Rand Company
Inland Container Corp.
International Paper Company Foundation
The Johnson Corporation
Kamy Incorporated
Perry H. Koplik & Sons, Inc.
Madden Machine Company, Inc.
Chas. T. Main, Inc.
Mead Measuring Corporation
Menasha Corporation
Monsanto Corporation
Nalco Chemical Company
Niagara Lockport Industries, Inc.
Nicolet Paper Company
NL Industries Foundation, Inc.
NSC Foundation, Inc.
The Orr Felt Company
Owens-Illinois
Packaging Corporation of America
Pentech Papers, Inc.
Perkin Industries
Plainwell Paper Company
Potlatch Corporation
St. Regis Paper Company
Sanchez Foundation, Inc.
Simons Eastern Company
Simpson Paper Company

Conditions for renewal of the scholarships include the maintenance of at least a 2.50 cumulative grade point average and continued enrollment in one of the curricula of the Department of Paper Science and Engineering.
Petroleum Distribution
Central Michigan Oilmen’s Club—A grant for student fees and books up to a maximum of $500 per year. Available on a one-year basis. Open to high school graduates and community college students interested in petroleum from Clinton, Eaton, Ingham and Jackson counties. Apply directly to the Petroleum Distribution Program.

"Mike" Jenkins Memorial Scholarship Award—An award of $100-$200 a year to be awarded in February of each year. The overall will be determined from the previous Fall semester grade report. Apply directly to the Petroleum Distribution Program.

Harold Wright Scholarship Award—A grant up to a maximum of $600 per year is available on a one-year basis. Open to high school graduates and community college students with preference given to students from Wayne, Oakland, and Macomb counties. Michigan Shell Jobbers Memorial Scholarship—A scholarship award of $500 to an incoming student in Petroleum Distribution at Western. The scholarship is presented in honor of Mr. Larry C. Hull, long-time friend of Michigan Shell Jobbers. The scholarship is based on need and high school academic record. Apply directly to the Department of Consumer Resources and Technology.

Printing Management
Northeastern Printers, Inc.—An award of $500 per year, to be divided equally between the Fall and Winter semesters, is available to juniors enrolled in Printing Management/Marketing at WMU who have completed at least two years of coursework (at least one year at WMU) and have earned a 2.5 GPA overall and a 3.0 GPA in graphic arts courses. The applicants must have been residents of Michigan for at least six months prior to the date of admission. This award is renewable if the recipient maintains a 2.5 GPA overall and a 3.0 GPA in graphic arts courses. Apply directly to Printing Management/Marketing, Department of Industrial Technology and Education.

Transportation Technology
Duke Harrah Memorial Scholarship—Awards of $250 are made each year to students in aviation curriculum who have demonstrated academic excellence and leadership in departmental activities.

Lubinazl Scholarship—An award of $600 is given annually to a junior or senior in Automotive Engineering who has demonstrated academic excellence.

College of Fine Arts
College of Fine Art Scholarships—Four $300 scholarships are awarded annually to outstanding young artists in art, dance, music and theatre. Each scholarship extends over two semesters, $150 in the Fall and $150 in the Winter. A 3.0 GPA must be maintained in order to continue receiving the scholarship. Applicants must major or minor in a CFA curriculum, attend Western as full time undergraduate students, have a 3.0 GPA in all course work completed, obtain the recommendations of at least one faculty member, demonstrate achievement in an arts discipline or show promise as a new student or provide services to a department or the College, and must not be in receipt of another University scholarship. Scholarship recipients may apply for the award in subsequent years. For this program are made available through donations by alumni and friends of the University.

Art
Lydia Siedschlag Scholarship—Special scholarships have been established for art students living in Siedschlag Hall, an on-campus residence.

Music
Music Scholarships—Western Michigan University’s School of Music makes annual awards of scholarships in amounts of $200-$2000 per year for undergraduate and $500-$4000 per 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 quality to hold an award until graduation (4-year maximum for graduates) providing 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. Requests for an audition must be made by February 15 to the Music Student Advisory, who will provide the student with an Audition Confirmation Form which has an appropriate space to indicate a desire for scholarship consideration. Final decisions on music scholarships are made in mid-March.

Several music scholarships are awarded in the name of special persons or designated funds.

Dalton Music Scholarships are awarded to incoming music majors from the class of Dorothy U. Dalton, 1890-1981, a charter member of the WMU Board of Trustees and a long-time Kalamazoo patron of the arts and humanities. May Arnold Tracker Scholarships come from an endowment established by Nellie M. Thacker (Class of 1920) to honor the memory of her mother Mae Arnold Thacker.

Harp Music Scholarships are awarded in honor of the first head of WMU’s School of Music. Funds are contributed by music alumni and friends.

Julius Stulberg Scholarships are awarded to music majors from southwestern Michigan who plan to pursue a teaching career. Funds for these scholarships are made available to WMU on a matching basis by the community of South Haven in honor of Michael Lisitak, who taught music in their schools, 1929-1969.

Beulah and Harold McKee Scholarship recognizes a senior music major who demonstrates major evidence of
accomplishment in his or her chosen field of music concentration. This award is made possible through the generosity 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.

Honors String Scholarships are made available through donations to the scholarship endowment program in memory of Helen Field, a prominent and respected Kalamazoo jazz artist.

H. Glenn Henderson Scholarship recognizes a music student who demonstrates outstanding accomplishment as a jazz major. Funds are made available through donations to the scholarship endowment program in memory of H. Glenn Henderson, professor of music, 1914-1956.

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

Piano Program Endowment Awards of $1000 are awarded to undergraduate pianists at the time of admission to the curriculum and may be retained until graduation or for a maximum of four years. Funds for these awards come from an endowment given by an anonymous patron of the music program at Western.

College of Fine Arts—Music Scholarships are available each year to an undergraduate student of exceptional ability. Questions may be directed to: Music Student Adviser, School of Music, Western Michigan University, Kalamazoo, Michigan 49008.

Theatre

The David Wayne Scholarship—An annual award given in recognition of outstanding scholarship and achievement. The James A. Shaw Scholarship—An annual award given to recognize outstanding achievement during a person's lifetime. The Robert L. Shaw Scholarship—An annual award given to recognize outstanding achievement during a person's lifetime.

College of General Studies

College of General Studies Award for Mentionable Accomplishment—This award, ranging up to $500 per year, recognizes students enrolled in the College of General Studies who have distinguished themselves in some way or have accelerated academic achievement. Funds for this program are made available through donations by alumni and friends of the University. Apply directly to the Dean's Award Committee at the College office.

College of Health and Human Services

College of Health and Human Services Scholarship Program—Several awards in varying amounts are made to outstanding students who are enrolled in the College's curricula. Funds for this program are made available through donations by alumni and friends of the University. Apply directly to the College of Health and Human Services.

Gerontology

Gernant Scholarship—Established to honor former Dean of Academic Services, Leonard Gernant. This award recognizes undergraduates of high academic achievement who are pursuing a minor in the Gerontology Program. Apply to the College of Health and Human Services.

Occupational Therapy

Edna Bunyan Skelton Scholarship Program—Supported by the Kennedy-Michigan Rehabilitation Foundation, this fund provides scholarships in varying amounts. Grants will be based on merit and financial need and may be awarded at any time during the academic year. Preference will be given to residents of Michigan at the sophomore junior and senior levels. Grants will be made to freshmen when circumstance warrants and funds are available. Students should earn a minimum of 2.5 scholastic average. Apply directly to the Occupational Therapy Department.

Michigan Occupational Therapy Association Scholarship Program—Several awards come from an endowment given by an anonymous patron of the music program at Western.

Theatre

The Marion R. Spear Award—Honors a student who has demonstrated outstanding achievement in the field of occupational therapy. This award is presented annually to a junior or senior level student who, in the judgement of the Speech Pathology and Audiology faculty, has demonstrated outstanding competence in diagnostic and therapy 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 Athletic Department.

Student Loans

Long-Term Loans

National Direct Student Loan Fund

Through this program, formerly the National Defense Student Loan, loans are available to students who have a demonstrated financial need. Full-time undergraduates may borrow up to, but may not exceed $3,000 in the first two years in college, and not exceed $6,000 as undergraduates. A graduate student may borrow up to $12,000 including loans received as an undergraduate. The actual amount borrowed may not exceed the student's demonstrated need. The interest rate for 5% and repayments start six months after leaving college. The minimum monthly repayment is $30. A portion of the student's loan, both principal and interest, may be cancelled for each year the student teaches full time in a school.

1. designated by the United States Secretary of Education as having a high enrollment of students from low income families.

2. for physically or mentally or emotionally handicapped children, according to the following schedule:

   • 15 percent for the first and second year:
   • 20 percent for the third and fourth year:
   • 30 percent for the fifth year:

   Note that:

   • Fifty percent of the loan (principal and interest) may be cancelled for each year that the student teaches school full-time in the Headstart Program up to the whole loan amount.

   • The student’s loan can be cancelled at the rate of 12.5% for each complete year of service in the Armed Forces of the United States (in an area of hostilities that qualifies for special pay) up to 50% of the loan.

   • The student’s total disability or death cancels the loan.

   • The student may defer payment up to three years:

     A. For service in the Armed Forces (Army, Navy, Air Force, Marine Corps or Coast Guard),

     B. As an officer on full-time duty in the commissioned corps of the U.S. Public Health Service,

     C. As a volunteer under the Peace Corps Act.
The student may defer payments up to two years while serving an internship, the success of which is required to begin professional practice or service. After the deferment period there is an additional six month grace period. To be considered for the National Direct Student Loan Program a student must submit either a Financial Aid Form (FAF), a Family Financial Statement (FFS), or an Application for Federal Student Aid (AFSA) to the appropriate address.

**Federally Insured Student Loan Program (Guaranteed Student Loan)**

The federal government guarantees loans made by private lending institutions to undergraduate and graduate students who are enrolled as at least one-half time students. An undergraduate student may borrow a maximum of $2,500 per year up to a maximum of $12,500. Graduate students may borrow up to a maximum of $8,500 per year to an aggregate of undergraduate and graduate loans of $25,000. Federal legislation provides that a student borrower pays no interest while in attendance as a one-half time student or better at an eligible institution or organization performing service comparable to service performed in the Peace Corps or to (D), (E), (F) or (A). Repayments start within 60 days of receipt of a loan as to the Federally Insured Student Loan. (See Federally Insured Student Loan Program.)

**State Direct Loan Program**

The Michigan Higher Education Student Loan Authority was created to provide a source of guaranteed loans (State Direct Loan Program) to in-state residents of Michigan who are unable to secure guaranteed loans from private lending institutions. Students accepted for enrollment or enrolled in good standing at WMU may apply at the Office of Student Financial Aid and Scholarships for loans to help pay educational expenses. Undergraduates may borrow up to a cumulative maximum of $12,500, and graduates up to $25,000 including undergraduate loans received. The maximum loan for any academic year cannot exceed $2,500 (undergraduate independent) and $5,000 for graduates or the total cost of education less other financial aid received, or be more than 50% of the total educational costs for the year involved as determined by WMU whichever is less. The Michigan Higher Education Student Loan Authority will determine the amount of each loan after consideration of WMU’s recommendation. Contact WMU’s Office of Student Financial Aid and Scholarships for further details. The same repayment conditions apply to this loan as for the Federally Insured Student Loan. (See Federally Insured Student Loan Program.)

**United Student Aid Fund Program**

Students unable to qualify for a National Direct Student Loan and unable to obtain a State Direct Loan (Michigan Higher Education Student Loan Authority) or Michigan Higher Education Assistance Authority (G.S.L.) loan or non-residents of Michigan unable to obtain a federally guaranteed loan in their own state may apply to their local lending institution which participates in this program. The names of participating institutions can be obtained from United Student Aid Funds, Inc., P.O. Box 50827, Indianapolis, Indiana 46250. The same conditions apply to this loan as to the Federally Insured Student Loan. (See Federally Insured Student Loan Program.)

**Parent Loan Program**

This program provides guaranteed loans to parents of undergraduate and graduate students and to graduate students up to $3,000 per year and to a cumulative maximum of $15,000 per student. Repayments may be made 60 days of receipt of the loan at a 12% to 14% interest rate. Application must be made to the local lending institution. If the local lending institution does not participate, the WMU Office of Student Financial Aid and Scholarships should be contacted for an alternate lender.

**Short-Term Loans**

The loan funds listed below provide emergency assistance for enrolled full-time or part-time undergraduate and graduate students to meet educational expenses. These loan funds have been established by University friends, alumni, faculty, and staff. Many of these funds provide loans for a maximum of 6 months at interest of 5 percent. Some funds restrict loans to students in certain curricula, of various academic ranks, from a given geographical location, etc. Application for these loans must be made in person at the Office of Student Financial Aid and Scholarships.

- A.A.U.W Graduate Social Work Fund
- A.A.U.W. Nursery Education Loan Fund
- Alpha Beta Epsilon, Xi Chapter, Loan Fund
- Alumni Short-Term Loan Fund
- American Business Club Loan Fund
- A. Robert Anderson Memorial Loan Fund
- Associated Women Students Loan Fund
- Auburn Loan Fund
- Fairline Ballou Memorial Fund
- Amelia Biscomb Memorial Loan Fund
- William R. and Emma Wales Brown Student Loan Fund
- Ernest Bunham Rural Loan Fund
- Chapman Student 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
- Vilda and Irene Oimac Loan Fund
- Distributive Education Loan Fund
- The Gordon and Ferne Elfferdink Loan Fund
- Frank Fatzinger Memorial 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 Economics Loan Fund
- Deldeen M. Herman Debate Loan Fund
- Hilts Buyers Guide Loan Fund
- John C. Hooke Loan Fund
- Honors College Loan Fund
- Home Economics Memorial Loan Fund
- Inter-Fraternity Council Loan Fund
- Freburn W. James Loan Fund
- Reverend B. Moses James Memorial Loan Fund
- John Jenkins Memorial Loan Fund
- Walter Larry Jenkins Memorial Loan Fund
- Gordon Q. Johnson Loan Fund
- Kalamazoo Area Chapter Maedoc Loan Fund
- Kalamazoo Ladies’ Library Ass’n Loan Fund
- Kalamazoo Motor Freight Loan Fund
- Alice J. Kaufman Loan Fund
- Jerome E. J. Keane Loan Fund
- Kiwanis Education Aid Fund
- The Dr. Radford Kuykendall Memorial Loan Fund
- Alice Louise Lefevre Memorial Fund
- Elizabeth E. Lichtry Loan Fund
- Marcel F. Liddy Student Loan Fund
- The David E. Ling Memorial Loan Fund
- Larry G. Lochner Memorial Loan Fund
- Rayh W. Lower Memorial Loan Fund
- The Charles H. Maher Memorial Loan Fund
- The R. C. Mahon Foundation Loan Fund
- Mildred Maloney Loan Fund
- Jean G. Malmstrom Loan Fund
- Mathematics Faculty Memorial Loan Fund
- William McCracken Loan Fund in Chemistry
- Mexican-American Loan Fund
- Migrant Student Loan Fund
- Frederick W. Miholich Memorial Fund
- Frederick W. Miholich Memorial Fund for Special Education
- Muskegon County Retired Teachers Association Loan Fund
- Charles S. Nichols Memorial Loan Fund
- Occupational Therapy Fund
- Omaha Loan Fund
- Dr. Gerald Osborn Memorial Loan Fund
- Panhellenic (Grand Rapids) Loan Fund
- Panhellenic (Detroit) Loan Fund
- Panhellenic WMU Council Loan Fund
- Truman A. Pascoe Memorial Loan Fund
- Ray C. Pellet Memorial Loan Fund
- PIMA (Michigan Division) Loan Fund
- Archie S. Potter Memorial Fund
- Douglas V. Patiloff Memorial Loan Fund
- Nellie N. Reid Memorial Loan Fund
- The Dr. Radford Kuykendall Memorial Loan Fund
award grants to undergraduate students with financial need. Priority is given to those with exceptional financial need. These grants range in amount from $200 to $2,000.

To be considered for a Supplemental Educational Opportunity Grant, a student must submit either a Financial Aid Form (FAF), a Family Financial Statement (FFS), or an Application for Federal Student Aid (AFSA) to the appropriate address listing Western Michigan University as a recipient. In addition, a student must submit to the Office of Student Financial Aid and Scholarships:

1. The results of the Pell Grant Application (See Pell Grant Program, above), and
2. Any additional information requested by the WMU Office of Student Financial Aid and Scholarships.

Student Employment
The College Work-Study Program

The College Work-Study Program is a cooperative program between the University and the Federal Government. Its purpose is to promote the employment in institutions of higher education and non-profit agencies of students, undergraduates, and graduates, who need such earnings to attend or remain in college. Priority must be given to students with the greatest financial need. Earnings under this program will not meet all of a student's educational expenses. To be considered for the College Work-Study Program a student must submit either a Financial Aid Form (FAF), a Family Financial Statement (FFS), or an Application for Federal Student Aid (AFSA) to the appropriate address listing Western Michigan University as a recipient. In addition, the student must submit:

1. The results, if an undergraduate, of the Pell Grant Application (See Pell Grant Program, under "Educational Opportunity Grant Programs"), and
2. Any additional information requested by the WMU Office of Student Financial Aid and Scholarships.

Off-Campus Employment

Students may find work through numerous local employers in and around the City of Kalamazoo. Students looking for work can receive assistance through the Student Employment Referral Service in Elsworth Hall. The Student Employment Referral Service actively recruits employment opportunities for students within the Kalamazoo area. When arriving on campus, students seeking employment are encouraged to contact this office.

On-Campus Employment

A large number of students are employed by all areas of the University. Each department handles its own student employment program. Departments are requested, but not required, to list job vacancies with the Student Employment Referral Service. These employment opportunities can be secured by direct contact with departments.

Grant Programs
Pell Grant Program

This program entitles an undergraduate student to receive a grant which cannot exceed 50 percent of the cost of attending an institution and cannot exceed $1,900 per student per year minus the expected parental contribution as determined by criteria established by the U.S. Secretary of Education and the U.S. Congress. In the event that the entitlement is not adequately funded, the grants will be pro-rated.

A student interested in this grant should complete and file either a Financial Aid Form or a Family Financial Statement or an Application for Federal Student Aid. It should be indicated at the place provided on each form that the information is to be forwarded to the Pell Grant processor.

If your family's financial situation has recently changed for the worse because of death, divorce, separation or loss of income, you should read the criteria for filing the Pell Grant Special Condition Form 1983-84 school year. If you meet any of the special conditions, then you should file this form (Available at the high school counselor's office or the WMU Office of Student Financial Aid and Scholarships).

Supplemental Educational Opportunity Grant Program

Under this program federal funds are made available to Western Michigan University to
Center for Women’s Services
The Center for Women’s Services provides information, counseling, and programs on skill development to women and men on campus and in the community. The Center offers a confidential list and information files for specialized help on women’s problems, a library of books and periodicals dealing with women’s concerns, supportive services, such as discussion groups and informal lunch meetings; counseling and materials to help with decisions on careers; and workshops to develop personal growth techniques such as assertiveness, stress management, leadership, and decision-making.

Persons who want information on new programs may call and ask to be put on the mailing list.
Located in A-331 Ellsworth Hall, between the University Student Center and the parking ramp, the office is open daily from 7:45 am to 8 pm on Monday and Wednesday, 7:45-4:45 on Tuesday, Thursday, and Friday, and 9 am to 12 noon on Saturday. Telephone: 383-6097.

Commuter Student Services
The Office of Commuter Student Services at Western Michigan University is a service center for the 13,000 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, tenant/landlord mediation, transportation information, and communication are just some of the other on-going programs carried out by Computer Student Services. The success or failure of a student’s academic career can often be traced to the living environment. Don’t minimize the importance of good housing. Telephone: 383-6115.

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 personal and social situations that leave them feeling confused and upset. In addition, it may be likely that the inherent stresses of university life will, at some time, interfere with academic achievement and personal growth. The University Counseling Center, located on the main floor of the Faunce Student Services Building, exists to help students deal effectively with such concerns.
The Center is staffed with professionally trained counselors and psychologists and is accredited by the International Association of Counseling Services.
Among Counseling Center Services are the following:

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

Educational Counseling: To help students deal with conflicts concerning academic life, educational goals, course selection, and curricular choices.

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

The Career Exploration/Media Center: Contains a wide and varied selection of printed materials, with an emphasis on self-understanding, career exploration and preparation, occupational information, and job trends. Included is a section of college and university catalogs, educational guides, and audiovisual materials pertinent to career awareness.

Workshops: Offered periodically by Counseling Center staff members, dealing with such topics as the elimination of self-defeating behaviors, personal growth, and assertiveness training.

Training and Internship Programs: For graduate students interested in internships, Counseling and Personnel, Psychology, and Social Work are available. Included in the training experience are demonstrations, case studies, and supervision.

Policy of Confidentiality
The Counseling Center is thoroughly committed to the need for confidentiality in client/counselor communications. In a time when invasion of privacy is a common experience, it is critical that clients have a place where they may openly discuss their most private concerns without fear of revelation or social reaction.

Appointments may be made by telephone (383-1850) or by stopping at the Counseling Center reception desk between 7:45 am and 4:45 pm on Monday through Friday. Students unable to reach the Counselor Center’s services during regular hours may make arrangements for evening appointments.

Housing
All students enrolled at Western Michigan University are permitted to live in housing of their own choosing. However, students are encouraged to give consideration to the educational, financial, and social benefits of living in a residence hall or a student family apartment. These facilities provide the convenience of being close to classes and other University activities.

Residence Halls
Each year hundreds of WMU students discover more about the world they live in, their colleagues, and themselves through the involvement of living in a residence hall. Opportunities for group participation and leadership development await those interested. Any currently enrolled WMU student, regardless of the number of semester hours he or she is enrolled for, may reside in a hall. Newly admitted undergraduate students are automatically sent information (Fall-month of May; Winter-November; Spring-February; and Summer-March) detailing the residence hall offerings available for the semester or session they anticipate coming to the University.
Individuals returning to the University as reentries, and newly admitted graduate students, will receive information by return mail upon requesting details from the Manager of Residence Hall Facilities, Faunce Student Services Building.

Admission to the University does not guarantee that a residence hall assignment will be available. Likewise, receiving a contract and submitting a residence hall assignment request does not guarantee space will be available. Assignments are made on a first come, first served basis up to the space available. Any requests received after all halls have been filled to capacity will be placed on a waiting list.

Eighteen residence halls offering a variety of services are located around the campus. Some halls provide room and board accommodations, with the individuals purchasing their meals off campus or in the University Student Center. One non-food service hall is available for students in need of off-campus housing throughout the year. Residents of this hall are permitted to remain during vacation periods. Since all other residence halls close for the periods between sessions and sessions, residents of these halls who chose to remain must make their own alternate housing arrangements during this period. Residents are permitted to remain in their assigned rooms during the Thanksgiving and March recess periods.
Most of the residence halls furnish twenty meals per week (Sunday evening excluded) with the dining rooms open from 7:00 a.m. to 6:15 p.m. six days a week and from 8:00 a.m. until 1:00 p.m. on Sunday. (Serving hours subject to change at the University’s discretion.) The food service enjoys an excellent reputation with an extensive menu developed in consultation with professional dietitians and residents. Food service residence halls are available during the Fall and Winter Semesters and the Spring Session. During these periods, meals usually begin the day classes begin and stop the last day of classes. Meals are not served during the Thanksgiving period.

Different assignment patterns are used in the various residence halls. Some halls are reserved exclusively for men, others for women; in other locations, residents are assigned by sex to alternate floors or alternate suites. In locations where co-ed assignments exist, separate bath and toilet facilities are provided for each sex.

The residence hall offerings at Western attract over 5,000 students each Fall/Winter Semester. The residents assigned to the halls represent individuals from all walks of life and academic interests. In addition to the majority of the students who are from the fifty states, many foreign countries are represented. Such a diverse group of individuals provides a stimulating atmosphere for the individual interested in learning about others.

Both undergraduate and graduate students are welcome in halls. Students most often prefer a specific hall because of location or assignment pattern (co-ed, dormitory, or single). Within the Fall and Winter Semesters graduate and older students find Davis Hall, a co-ed full food service hall, of special interest. Students must be twenty-one or older to live in Davis. No hall is reserved for the exclusive use of graduate students. Telephone: 383-6100.
Family Housing

The 590 on-campus apartments provide convenient, inexpensive housing for many student families, with or without children, and duly enrolled WMU students who are single parents with dependent children, are eligible to reside in family housing. The one- or two-bedroom furnished or unfurnished condition.

Students who are single parents with student families. Married couples, with or without children, live in the apartments on a year-round basis. It is our experience that these families have similar economic and social circumstances. This makes for pleasant relationships among neighbors, and often friendships are formed that last long after a family leaves campus. Reciprocal babysitting arrangements can usually be worked out with a neighbor. New families are quick to find their niches in the family housing community.

Assignments are made based on the date of application; therefore, the earlier a family applies the better the chances are for receiving an assignment. Early application is encouraged and may be submitted before official admission to the University. All inquiries should be made directly to the Family Housing Office, Student Services Building. Telephone: (616) 383-4970.

Off-Campus Housing

Approximately 70 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. It registers approximately 2,500 rental units ranging from modest sleeping rooms to luxurious apartment complexes. Rental listings of apartments, houses, and sleeping rooms are maintained and printed for distribution. Listings of students in need of roommates, as well as those available as roommates, are updated regularly and used extensively by the thousands of students who live off campus and share their housing costs. While most students look forward to off-campus living as an opportunity to pursue individual life styles, their experiences are often plagued by strained roommate relations and rental difficulties that interrupt their academic achievement. Recognizing the significance of an adequate housing environment for all students, the University’s rental listing program is supplemented with tenant counseling and educational programs as well as tenant landlord service. For additional information regarding off-campus housing, contact the Office of Commuter Student Services, Room 3510, Faunce Student Services Building. Telephone: (616) 383-6115.

Sorority/Fraternity Housing

These houses are privately owned and operated by various fraternity organizations for their members. For more information, contact the Office of Student Activities, Faunce Student Services Building.

International Student Services

Western Michigan University has long recognized the value of international educational interchange. Over the years, hundreds of students from other nations have entered the University to pursue their educational objectives. Conversely, many U.S. students have sought to broaden their educational horizons by undertaking a period of study and/or travel in a foreign country. This educational interchange 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 campus as well as in the community. The Office of International Student Services was established to assist students involved with this interchange process.

Foreign Student Services

The Office of International Student Services deals with the special needs and circumstances of foreign students, such as processing applications for admission, conducting an orientation program for new foreign students at the beginning of each enrollment period, assisting with housing arrangements, coordinating community programs involving foreign students, providing advice on matters related to each student’s immigration status, serving as a liaison between the student and his/her sponsor, and offering personal and social counseling on a wide variety of concerns. Recognizing the economic difficulties foreign students are encouraged to participate in academic and social activities as their interests and time allow. Any foreign student 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 foreign student must demonstrate to the University that he/she is academically, financially, and linguistically capable of undertaking the academic program being pursued. Most foreign students generally on a full-time basis. Before a prospective student can be admitted and the Certificate of Eligibility for a visa (Form I-20 or DSP-66) 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 Office of International Student Services, Western Michigan University, Kalamazoo, Michigan 49008; Telephone: (616) 383-6824; Telex: 6877099 WEST MICH UNIV.

The Martin Luther King, Jr. Program

The Martin Luther King, Jr. Program is a one-year, 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 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 in the fall of 1968 with sixty WMU freshmen coming from high schools throughout southwestern Michigan. It now is a year-round program, beginning in the summer of the student’s freshman year.

The primary purpose of the MLK Program is:

1. To encourage students who would otherwise pursue a higher education to do so.

2. To provide supportive services—such as academic advising, vocational and personal counseling, tutoring, and testing—to meet each individual student’s needs.

Application is made through the Office of Undergraduate Admissions. The standard WMU application is used. Students interested in the program should note this on the application or include a letter to that effect. There is a $15.00 fee for application to Western. (The fee can be waived per request by a high school counselor, caseworker, or minister—someone who is familiar with the family circumstances.)
After the application is received and processed, it is referred to the MLK Program office. The program then contacts the student. Before a student is admitted, he/she must:

1. Have returned a signed contract.
2. Have completed and mailed all financial aid forms (B.E.O.G., etc.) if applying for a grant prior to an on-campus interview.
3. Complete a personal on-campus interview with a MLK staff person, if requested.

Participants begin their freshman year during the WMU 7 1/2-week Summer Session. Each student is assigned a counselor. This peer counselor is a graduate or upperclass student who functions as friend, student evaluator, liaison, and resource person to the new student. The counselors 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 considered full-time at WMU must take a minimum of six credit hours. Freshmen are advised to take no more than eight hours maximum. A minimum of twelve hours is required during the Fall and Winter Semesters.

The MLK Program does not offer any direct financial assistance to its participants. All WMU students interested in financial assistance must apply through the Office of Student Financial Aid and Scholarships. Awards are made on the basis of need as determined in the applications. Students not eligible for monies based on federal guidelines may secure a Guaranteed Student Loan through a bank in his/her hometown. Telephone: 383-8139.

Minority Student Services

The office of Minority Student Services is committed to the goals of increasing minority presence and participation at Western Michigan University by encouraging Black, Hispanic, Native-American, and Oriental students in order to ensure successful academic experiences that may aid the students in becoming self-sufficient and better prepared for specific professional careers.

1. To encourage higher education through minority student identification and the dissemination of matriculation information to these students.
2. To recruit minority students into the various programs at WMU through an extensive program of statewide visits to high schools and community agencies.
3. To provide supportive services to minority students in order to ensure successful academic experiences that may aid the students in becoming self-sufficient and better prepared for specific professional careers.
4. To monitor, evaluate, and improve university-wide operations as they relate to minority students.

Through these efforts, it is hoped that the greatest opportunity for a successful and relevant educational experience is provided for our minority populace. Telephone: 383-2204.

Project Scope

Senior Citizens’ Opportunity Program in Education

This program allows persons sixty-two years of age and older to enroll in University classes without charge, following these guidelines:

1. Persons sixty-two years of age or older desiring Senior Citizen status should seek admission to the University prior to the final day of registration, preferably within the admission deadlines printed in the Schedule of Classes. A short form admission (PTC—permission to take classes) is available. Admission at the time of registration will be offered on an emergency basis and is to be avoided, if possible.
2. The Permit to Register issued to the student who requests senior citizen privileges. This permit/admission application will be labeled “Senior Citizen.” Such registrants are to enroll during the last hour of the final day of registration each semester or session.
3. No special parking privileges shall be offered to Senior Citizen students. Those who elect this status shall register their vehicles and pay for the usual part-time student parking sticker with the Public Safety Department, or use metered parking.
4. Senior Citizen students will be issued the regular student ID card with a special Senior Citizen label entitling them to use of the University libraries and other academic facilities necessary for their performance in the class for which they are enrolled. No additional validation will be affixed, thereby making other non-academic facilities, such as the Health Service, unavailable.
5. No student is required to declare himself or herself a Senior Citizen student. This status would be inappropriate for a student who does not wish to be confined to selecting only from those classes which are still available during the last hour of the final day of registration.
6. All students eligible for Senior Citizen status will be registered officially on the class roll, receive a grade, and have all academic work recorded on a permanent student record.


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.

A broad spectrum of religious opportunities including traditional, contemporary, and experimental worship, individual and small group Bible studies, workshops and retreats, study-travel experiences, social concerns, religious dramas, and music groups is available to interested students.

The campus ministry staff is available to students and their families for personal and religious counseling. Each campus religious program, and materials and resources for religious activities.

The Office of Religious Activities, which is a part of University Student Services, assures equality in the University’s relationships with the more than twenty student religious organizations and the five campus ministers currently present on campus.

The Kanley Memorial Chapel facility includes an interfaith chapel, several meeting rooms, and offices. It is managed by the University as a center for religious activities and services as the meeting place for most student religious organizations. It is also the home of four regular Sunday worship services and provides a popular site for student weddings. The Office of Religious Activities and ten campus ministers have offices in the building.

In addition to Kanley Memorial Chapel, there are five student centers operated by specific denominations on or near campus. Specific information regarding the religious groups on or near campus is available in the Office of Religious Activities. Telephone: 383-1822.

Sara Swickard Preschool

The Sara Swickard Preschool is open from 7:45 a.m. to 5:15 p.m. weekdays. It is located on Western’s campus at 1211 Knollwood. The location is convenient for student parents who wish to leave their children on the way to class. Children 2-1/2 to 6 years old can stay at the Preschool for a minimum of two hours to a full day session. The program and environment attempts to minimize failure and competition while promoting cooperation, creative thinking, problem solving, and kindness. Application to the Preschool should be made well in advance. Forms are available in the office at the Preschool on the second floor. Telephone: 383-4992.

Speech, Language, and Hearing Services

The Language, Speech, and Hearing Clinic, a service program provided for persons with communication disabilities by the Department of Speech Pathology and Audiology, is located on the East Campus in the Speech and Hearing Center. Students and their dependents may take advantage of diagnostic and therapeutic services for speech, language, and voice problems by contacting the department for an appointment. Because the services are an integral part of the department’s clinical education program, no charges are made for these services. Telephone: 383-0983.

Student Activities and Organizations

Classes, professors, and term papers are an ever present part of one’s college experience, but the University recognizes that classroom activities alone do not provide the total education today’s college students are seeking.

Students can enrich and broaden their collegiate life by becoming involved in any number of the more than 160 organizations coordinated and sanctioned by the Office of Student Activities, located in the Student Services Building.

To develop leadership skills, acquire valuable vocational training, gain new friends, get to know faculty members and administrators, serve the campus and the community—a student need only become
Services and the Student Health Fee
The University Health Center provides students with all examinations, treatments, and minor surgical procedures that would be expected in a physician's office, as well as laboratory tests, pharmacy services, and health education opportunities. Payment for all services rendered within the University Health Center, except for pharmaceuticals, is covered by the Student Health Fee (SHF). It is assessed in full at the beginning of each semester or session to students carrying five or more hours a semester, or three or more hours a session, each semester. Students carrying less than five hours a semester or three hours a session are assessed a lesser fee. This fee entitles them to routine physician visits at no further charge, but all other Health Center services are rendered on a “fee for service” basis. These students may, however, choose to pay the difference between the lesser assessment fee and the full Student Health Fee and utilize the Health Center services at no further charge (with the exception of pharmaceuticals, which are offered at reduced rates). Any student who is eligible to enroll may use the Health Center on a “fee for service” basis, or can elect to buy in as a full SHF member at the current rate. Recently graduated students may use the Health Center for one semester (or two sessions) after graduation in order to allow time to establish a new permanent source of medical care. Spouses of students may also use the Health Center on a “fee for service” basis, or may pay the Student Health Fee and be eligible for full services at no further charge (with the exception of pharmaceuticals).

All students wishing to buy into the SHF must do so within the first three weeks of a semester or session, and payment must be made at the University Health Center.

The Student Health Fee, assessed in full at the beginning of each semester or session, covers all of the following services when rendered by University Health Center staff, no matter how many times services are required:

- Office visits
- Physical exams and health maintenance visits
- Medical specialties of gynecology, dermatology, and orthopedics via staff physicians
- Minor office surgical procedures
- Laboratory studies
- X-rays
- Casts
- Medical supplies
- Physical Therapy
- TB Testing
- Immunizations
- Health education programs and information
- Allergy Injections—Students who supply an antigen substance and an injection schedule from a family physician may have all scheduled injections administered.
- Prescriptions at reduced rates—Pharmacy services are available to students, spouses of students, faculty, staff, and emeriti.

Health Center Hours
Clinic Hours: Fall and Winter Sessions
Monday through Friday
7:45 a.m.-11:30 a.m.
1:00 p.m.-4:45 p.m.

Urgent Care Hours
Monday through Friday
7:45 a.m.-4:45 p.m.

Saturday
9:00 a.m.-11:30 a.m.

Clinic Hours: Spring and Summer Sessions
Monday through Friday
7:30 a.m.-11:30 a.m.
1:00 p.m.-4:15 p.m.
opinions and make recommendations to the administration on policies or services that will enhance University health care. Board membership is open to any interested student. For further information regarding application for a board position, call the University Health Center Director, Mr. Donald McNally, at 383-6007.

**Location**
The Health Center is located on the west side of Glineson Drive, north of Michigan Avenue. The Immediate Care Entrance is on the south side of the building, just west of the main entrance.

**University Ombudsman**
The Ombudsman is a presidential appointee chosen with the active participation of students, faculty, and staff, and confirmed by the Board of Trustees.

The position of University Ombudsman was created to investigate and mediate grievances and to provide justice for all members of the University community. Simple and rapid procedures have been established for the hearing of requests, complaints, and grievances. The Ombudsman investigates such matters, and where a malfunction in the administrative process or an abuse of power is discovered, the Ombudsman assists the individual in accomplishing a quick and fair resolution of the problem. Some problems can be remedied by the Ombudsman but, when appropriate, some persons are referred to other University members and/or offices.

The Ombudsman is authorized to make thorough investigations, and has prompt access to all University offices and relevant records. No person shall suffer any penalty because of seeking assistance from the Ombudsman. All information presented to that office by persons seeking assistance shall be considered confidential. The Ombudsman is especially alert to the chief causes for student concerns and makes recommendations for the elimination of these causes, consistent with the fundamental purpose of the University. Telephone: 383-6200.

**University Placement Services**
Assistance in total job search planning is offered free of charge by the University Placement Services to students and alumni of Western Michigan University. Placement services include job counseling, a career information library, an on-campus interviewing schedule, a weekly employment opportunities bulletin, job vacancy postings, direct referrals to employers, maintenance and distribution of credentials, assistance with job search correspondence such as resumes and letters of application, interviewing videotapes, special career workshops and seminars, summer job information, and referral to specialized campus agencies providing career planning services.

The office is centrally located on the first floor of Ellsworth Hall, adjacent to the University Student Center. Telephone 383-1710 for appointments and additional information.

**Alumni Affairs and Development**
The Office of Alumni Affairs and Development seeks to coordinate programs related to its alumni and the fund raising efforts of the University. The areas of alumni and development provide two separate functions which are described below.

**Alumni**
The Office of Alumni Relations serves the University and graduates as a liaison between the two, communicating on a regular basis with alumni who have joined the Western Michigan University Alumni Association.

The Office of Alumni Relations is responsible each year for Homecoming, for several class reunions, and for many regional activities throughout the state and nation. It is also charged by the University with the maintenance of a detailed and accurate record of the more than 105,000 persons who have obtained degrees from the University. Each year the WMU Alumni Association presents several Teaching Excellence Awards to members of the faculty, and selects several graduates for special recognition for their achievements and the renowned which they have brought the University.

An active program of foreign and domestic travel is offered by the Office of Alumni Relations to alumni and friends of the University, and special opportunities in group life insurance are also provided.

A link with the current student body is maintained through the Student Alumni Service Board, which conducts such projects as the wine and cheese receptions for new graduates the afternoon before commencement. It also provides much of the leadership for the annual Homecoming parade.

**Alumni Affairs**
Alumni Affairs is an alumniae sorority which maintains eleven chapters in eight Michigan cities. ABE maintains a scholarship program for prospective teachers.

Fifteen alumni are elected to staggered three-year terms on the board of directors of the Alumni Association. The board has a total of twenty-two members when vacant ex officio members are counted. The Alumni Office is the administrative arm of the board, and the director of alumni relations serves as executive secretary of the board.

**Development**
The Development Office seeks to raise private support for academic programs, building projects, loans and scholarships, and a variety of University needs. Support is received from alumni, emerits, parents, friends, business and industry, and foundations. The four major areas of development are: the Development Fund, which through its direct mail, telephone programs, and personal solicitation, seeks to enlist annual support; Planned Giving Services, which provides consultation on estate and tax planning, including wills, bequests, charitable trusts, gifts of insurance, securities, and other properties; Corporate/Foundation Relations, which seeks support from business, industry, and private foundations; and the Mike Gary Athletic Fund, which solicits gifts for Western's intercollegiate athletics program. The contributions received through these efforts help to ensure financial support for students, and provide the resources essential to the continued high quality of education at the University.

**Western Michigan University Foundation**
The WMU Foundation is a non-profit, tax-exempt corporation that was formed exclusively for the benefit of the University. The Foundation exists to secure and distribute private gifts to the University for the purpose of improving or creating services and programs that would not otherwise thrive.

The Foundation was created by the University Trustees as a corporate, but University-related, organization. It has a corporate body and a Foundation Board of Directors comprised of twenty-seven prominent alumni and friends of the University.

The Foundation Board, national in scope, attracts, invests, and distributes private donations solely for the benefit of Western Michigan University. All contributions to the WMU Foundation, whether designated for a particular program, college, or department or for unrestricted use, are tax deductible.

**Archives**
The University Archives and Regional History Collection is located on the ground floor of Waldo Library. 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, correspondence, and manuscript collections. In addition, local public records from southwestern Michigan are on deposit from the State Archives.

**Athletics—Intercollegiate**
The University is represented by men's teams in football, baseball, basketball, indoor and outdoor track, cross country, tennis, gymnastics, golf, 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 Bowling Green, Central Michigan, Eastern Michigan, Kent State, Miami of Ohio, Toledo, Ball State, and Northern Illinois. The teams winning Mid-American Conference championships in men’s and women’s basketball, baseball, softball, and volleyball qualify automatically for the annual NCAA playoffs.

Audiovisual Center

The Audiovisual Center is operated by the Division of Instructional Communications to serve the faculty, staff, and students of the University with audiovisual materials and equipment. The AV Center includes a film library, preview facility, and central offices on the ground floor of Waido Library, and equipment housed in Dunbar and More Halls. In addition, students are employed to work in all three locations and may be available to operate audiovisual equipment for classroom instruction and other campus activities. Other services of the center include consultation, a source library for locating media materials nationwide: a 100-seat auditorium, and a fully equipped maintenance facility for audiovisual equipment.

Audio Services

Audio Services of the Division of Instructional Communications, located in Dunbar Hall, serves the recording and production needs of students and faculty, and supplies blank tape and cassettes to all departments on campus. Student sound projects, slide film sound tracks, and correcting sonically defective tape and cassette may be done by appointment. High speed copies of tapes and cassettes can be made, often in a matter of minutes. Audio Services personnel also assist in script preparation. Large music and effects libraries offer the appropriate finishing touch to your production.

Forensics—Intercollegiate Debate

Debate began at Western on an informal basis in 1916. It has been an official University-sponsored activity since 1921. Participants engage in intercollegiate competition at regional, national, and invitational tournaments. They participate in international debates with visiting foreign debaters and they make public service appearances before local audiences. The debating program has two main purposes: (1) to train students in the techniques of analysis, argument, and public address and (2) to motivate them to inquire into the controversial issues that are the concern of every citizen in a democracy. Through continuing affiliations with the Michigan Intercollegiate Speech League and the American Forensic Association, participants now have the opportunity to qualify for the annual National Debate Tournament and they are eligible to join the national forensics fraternity, Delta Sigma Rho—Tau Kappa Alpha. The Humanities Area of the College of General Studies sponsors the program for the University, and General Studies elective credit is available to participants who enroll for it.

Persons wishing further information should contact Archie E. Watson, Director of Debate, Humanities Area, College of General Studies (383-3838).

Graphics Services

Graphics Services provides instructional graphics for faculty, staff, and students. Graphics for research and publication are also done, but priority treatment is given to materials for classroom instruction. Graphics Services provides support materials for the other activities of the Division of Instructional Communications, of which it is a part, and also does occasional promotional work. Graphics Services is located in Room 0480 of Dunbar Hall.

Music

Numerous musical activities and organizations at Western Michigan University are available for the cultural enrichment of the students. Other University members, students, and guest artists provide a schedule of more than two hundred 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, Wind Ensemble, Orchestra, University Chorale, College Singers, Gold Company, Campus Choir, Grand Chorus, and Opera Workshop. The University also offers opportunities for participation in small ensemble groups for voices, strings, woodwinds, brass, and percussion, including Jazz Lab Band and Jazz Orchestra.

Photographic Services

Photographic Services does all kinds of photography for faculty, staff, and students, with the emphasis on materials for classroom instruction. Both original photography and copying can be done, but copying of copyrighted materials will only be done with permission of the copyright holder, obtained by the person requesting the copying. Photographic Services is located in Room 1500 of Dunbar Hall.

Police

Located at the corner of W. Michigan Ave. and Western Ave., the Department of Public Safety is open 24 hours a day, providing a full range of police services through the use of a uniformed patrol division, a detective division, and a crime prevention bureau. The Department of Public Safety is responsible for investigating all crimes and accidents occurring on University property and is committed to providing an environment conducive to the education of the students at Western Michigan University. Towards that goal, the department’s various divisions and bureaus have coordinated their efforts to create and maintain a feeling of security and safety within the University community.

Information can be obtained by visiting the office, telephoning 383-8800 or (on campus) 123 in an emergency. Questions concerning parking permits and parking violations should be directed to the Parking Violations Bureau in the Public Safety Annex located at the corner of W. Michigan Ave. and Marion St. Telephone 383-8160 during normal University business hours.

Publications

Western Herald, WMU’s student newspaper, is published Mondays, Wednesdays, and Fridays during the Fall and Winter Semesters, twice weekly during the Spring Session, and weekly during the Summer Session. It is distributed free. The positions of editor, business manager, departmental editors, and circulation and advertising managers are paid positions. Staff jobs are open to all University students.

Western News is the official publication for administration, faculty, and staff members. It is published each Thursday by the Office of Information Services, which also produces At Western, a newsletter for parents, and the Westerner, the latter in association with the Office of Alumni Relations.

The Westerner is published six times each year for alumni and other friends of the University.

Reading Horizons, a quarterly journal devoted to the study of reading problems, is published by the Department of Education and Professional Development and the College of Education.

The Department of English publishes a number of journals: Currents, a student-edited literary journal containing poetry, prose, and the non-fiction writings of students and faculty, Trial Balloon, a faculty-edited literary journal containing work produced in creative writing courses, Comparative Drama, a faculty-edited journal of dramatic criticism, Calliope, for high school writers, and Another Day, Another Pineapple, for the creative teaching of English and the language arts.

Other academic areas that publish scholarly works include Center for Educational Research, Cistercian Studies, Department of Blind Rehabilitation, Department of Mathematics, Department of Occupational Therapy, Evaluation Center, Medieval Institute, New Issues Press, and School of Social Work.

Radio

WMUK is the FM radio service of Western Michigan University, broadcasting at 102.1 on the dial, with 50,000 watts of stereo power.

The station provides an educational and cultural expansion of the campus through its broadcasts of many University events, and brings to its listeners programs from the community and leading cultural centers of the world. WMUK involves the community in programming for those with interests in the Fine and popular arts, news and information, and instruction. The station also airs programs for minority and other special interest groups.

WMUK began broadcasting in 1951, with a power of 400 watts. In 1955 a Kellogg Foundation grant made possible a power increase to 39,000 watts. In 1973, through a federal grant, WMUK increased its effective radiated power to 50,000 watts and moved its transmission facilities off campus. WMUK now serves an area of interest groups.

WMUK won Armstrong Awards for excellence in community service programming in 1969 and 1972. The station also won the 1972 Corporation for Public Broadcasting award for extraordinary service.
to the community through public radio. More recently, WMUK won the 1979 Ohio State Award and the 1978 George Foster Peabody Award for meritorious service in broadcasting.

WIDR FM, a 100-watt station operated by students and broadcasting on frequency 89.1, serves a predominantly student listening audience in Kalamazoo. Facilities of WIDR FM are located in the L. Dale Faunce Student Services Building.

R.O.T.C.

The Army Reserve Officers' Training Corps (R.O.T.C.) program enables students who are college graduates to receive a commission as a Second Lieutenant and serve in the U.S. Army, the Army National Guard, and the U.S. Army Reserve.

The military science program at Western offers male and female students courses intended to develop leadership and managerial skills, and broaden their knowledge of the role of military in society. A minor in military science is available to those who wish to apply.

The two-year Army R.O.T.C. program is divided into two parts: the Basic Course and the Advanced Course.

The Basic Course is completed during the freshman and sophomore years. No military commitment is incurred during this time. Subjects encompass management principles, national defense, leadership development, and physical fitness.

After completing the Basic Course, students who have demonstrated officer potential and meet physical and scholastic standards are eligible to enroll in the Advanced Course.

The Advanced Course is normally completed during the junior and senior years of college. Instruction includes further leadership development, Army organization and management, tactics, and administration.

The two-year Army R.O.T.C. program offers college students the opportunity to be commissioned as second lieutenants after only two years of on-campus R.O.T.C. instruction. This program is designed for community and junior college graduates, and for students at Western who have not taken Army R.O.T.C. during their first two years.

Students can take advantage of the two-year program by successfully completing a paid six-week Basic Camp, usually after their freshman or sophomore year, and by enrolling in the R.O.T.C. Advanced Course, normally in their junior year. Provided enrollment requirements are met. Except for this camp, requirements for and obligations incurred in the two-year and four-year programs are the same.

To qualify for appointment in the Army Nurse Corps (A.N.C.), R.O.T.C. graduates must have a bachelor's degree in nursing from an accredited nursing program and must successfully pass a state board nursing examination. Nursing students who are not enrolled at Western may still enroll in Army R.O.T.C. through cross-enrollment, provided they can meet all of the professional criteria required.

A paid six-week Advanced Camp is held during the summer between the junior and senior years. This camp permits students to put into practice the principles and theories they have acquired in the classroom, and exposes them to Army life in a tactical or field environment.

All cadets in the Advanced Course receive uniforms and necessary military science textbooks, pay for Advanced Camp, and a subsistence allowance of $100 per month for up to ten months of each school year. Three and two year scholarships are available to qualified majors and non-majors. Each scholarship provides for all tuition, textbooks, and laboratory fees, in addition to a subsistence allowance of $100 per month for up to ten months of each school year. The three and two year scholarships are open to all qualified University students, whether or not currently enrolled in R.O.T.C.

The Military Science Department also sponsors several extra-curricula activities which include the ROTC Rifle Team, the Western Rangers, and the Association of the United States Army (AUSA).

Television

In its role as one of the mass media services provided by the Division of Instructional Communications, the television facilities support more than 100 courses with televised instructional materials over a closed-circuit network of seven channels and four direct feeds—reaching 350 classrooms as well as several non-Academic locations. These television lessons are produced in two modern three-camera television studios as well as in an unlimited variety of remote locations, utilizing the art broadcast quality. Students are employed as crew members, operating camera and sound equipment during productions.

Television production, operations, and performance courses are taught, in part, by faculty members in the Department of Communication Arts and Sciences using these facilities. The materials may be preserved on videotape using a wide range of recording formats. A staff of media producers, engineers, graphic artists, cinematographer-photographers, and various other special-skills personnel support the facility.

Television Services was started in 1969, and its use is continually broadened to meet growing academic and non-academic needs. In addition to preparing instructional materials for classroom use, the Service produces educational material for use by local commercial stations, and is involved in the marketing and distribution of developed materials.

Numerous hats have been received by the Service, such as the prestigious Ohio State Award for the television series Poets in Their Time. For further information, contact Television Services, Room 1450 Dunbar Hall.

Theatre

All students in good academic standing, regardless of major or minor, may participate in the University Theatre program of the Department of Theatre. Located in the excellent and spacious Laura V. Shaw Theatre complex, theatre opportunities each year include acting and technical work in faculty-directed productions for public performance on the grottoes and arena stages, as well as student-directed laboratory productions.

University Libraries

The University Libraries consist of the Dwight B. Waldo Memorial Library, the Business Library, the Music Library, the Physical Sciences Library, and the Education Branch Library. The total collection, which numbers well over two million bibliographic items, includes books, bound periodicals, music scores, recordings, maps, documents, and materials in microform. About 10,200 periodical and serial titles and some forty newspaper titles are available.

A rare book from Michigan history, William Beaumont's Physiology of Digestion, with Experiments on the Gastric Juice, was acquired in October 1977 as the one millionth volume in Western's libraries. The work, considered a milestone in medicine, was written by a military surgeon stationed at Ft. Michilimackinac (now Mackinaw City) in 1822. The two millionth volume, acquired in December 1982, was an exact reproduction of The History of Kalamazoo County, Michigan first published in 1880.

The main collection is located 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.

The Library system is a depository for United States and Michigan government documents and receives microprint editions of United Nations documents and official records.

A microform collection of more than 600,000 contains such items as the Human Relations Area File, the American Historical Series, Early American Newspapers of the 18th and 19th centuries, the U.S. National Archives, Early English Books printed in Great Britain from 1475-1640, and ETHC documents (documents in educational research published by the Educational Resources Information Center).

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

The Ann Kercher Memorial Collection is an extensive collection of materials on Africa south of the Sahara. Started more than a decade 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 programs of the University's Medieval Institute.

4. The Randall Frazer 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 residents of the area.

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

7. The Map Library, a unit of Reference Services, is the second largest academic library map collection in the State of Michigan and the third largest of all map libraries in the state. The present collection of 165,000 items includes Army and U.S. Geological Survey maps, which are cataloged and ready available for use. In addition to the maps, the Map Library also possesses more than 1,000 atlases.

The Business Library, located in North Hall, has a collection of more than 70,000 items, which include special microform collections, annual reports from businesses.
and industries, and current subscriptions to periodicals and newspaper titles.

The Music Library is located in the new Dorothy U. Dalton Center. In addition to more than 25,000 books and scores, and extensive holdings in music periodicals, this branch contains a collection of 10,000 phonodiscs and tapes, and extensive listening facilities.

The Physical Sciences Library contains 60,000 volumes in the fields of mathematics, astronomy, physics, and geology and has subscriptions to about 600 periodical and serial titles. This branch is located on the third floor of Rood Hall.

The Education Branch Library in Sangren Hall has some 390,000 bibliographic items and receives more than 600 periodical titles. The center, a cooperative venture between the University Libraries and the College of Education, combines the best facilities and practices of library and audiovisual services into a single center for the improvement of instruction and learning.

The Cistercian Studies Library, located in Hillside Apts. West, is a collection of books in the areas of monastic history, spirituality, and general church history which supports the research and programs of the Institute of Cistercian Studies and the area of medieval studies at the University. The collection includes rare books, manuscripts, and incunabula, most of which are on an indefinite loan to Western from the Abbey of Gethsemani. Over 400 of the some 6,000 volumes in the library are rare items of interest to medieval scholars from all over the world.

Holdings in all of the University Libraries are recorded in the union card catalog in the Main (Waldo) Library, each branch maintains a special card catalog of its own holdings.

General and specialized reference service is provided at the main Reference and Information Desk, at the Science Reference Desk, and in the Documents and 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 you may need for class research related problems. In addition, the reference staff offers a three credit hour course, Library Resources, in the General Studies curriculum. The course is designed to introduce the student to the use of the library system, especially to the bibliographic tools and methods necessary to find information in the various subject fields.

An on-line automated retrieval system (OARIS), offered by the library, accesses data bases in nearly every subject. The computerized operation allows users to significantly shorten time spent on literature 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 not owned by the University Libraries. Requests for loans may be initiated at public service desks in all libraries, as well as at the Interlibrary Loan office in Waldo Library.

Students enrolled in off-campus classes are always welcome at the libraries on campus. They are also provided library services through the library at the Continuing Education Center in Muskegon (Fruitport), through the Lake Michigan College Library in Benton Harbor, through the Lansing Community College Library in Lansing, through an arrangement with the Grand Rapids Public Library in Grand Rapids, and by special on-site arrangements for classes taught elsewhere.

Vehicle Registration

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, motorcycle, and/or mopeds with the Parking Violations Bureau (located in the Public Safety Annex) and pay a registration fee. Information concerning parking regulations, parking permits, and parking violations can be obtained by visiting the office, located at the corner of W. Michigan Ave. and Marion St., or by telephoning 383-8160 during normal University business hours.

Faculty and Administrative Councils

The Faculty Senate

The 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 share in the determination of institutional policy. Faculty Senate Councils are composed of faculty members elected by the Faculty Senate for three-year terms, certain ex officio members, several members appointed by the President of the University, and student members selected by the Western Student Association and the Graduate Student Advisory Committee. The terms of elected members expire in April in a staggered year sequence. The Councils include: Budget and Finance, Campus Planning, Continuing Education, Educational Policies, Graduate Studies, Research Policies, Student Services, and Undergraduate Studies. For names of members and further information, contact the Faculty Senate office. The Faculty Senate President for 1982-83 is Roger A. Bennett and Senate Vice President is Fred V Hartenstein.

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 structures, residential units, recreational facilities, and lands owned by the University. In this capacity, the Council (1) develops and recommends policies to provide a framework within which campus agencies may act in making administrative decisions; (2) develops procedures for the evaluation of policy decisions and administrative actions; (3) processes information brought before the Council from the administration, faculty, and students which will guide the Council in making informed recommendations in its areas of concern; and (4) reviews all major planning proposals 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.

Continuing Education Council

The Continuing Education Council is responsible for reviewing, developing, and
recommended. Thus, for example, it is concerned with the establishment of new departmental programs, new interdisciplinary undergraduate programs, apparent duplication between existing programs or courses, and needs for additional or specialized instruction. Also included in the role of the USC is the discretionary review of recommendations from the Undergraduate Curriculum Committee.

Student Financial Assistance Council

Created by the WMU Board of Trustees in March 1976, the seventeen-member Student Financial Assistance Council consists of students, faculty, and staff appointed by the President. The council is responsible for the development of a University-wide plan for student financial assistance, including the coordination of existing programs, and policy decisions regarding modification, termination, or initiation of new programs.

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.

General Regulations

Academic Regulations

Class Attendance

Students are responsible directly to their instructors for class and laboratory attendance, as well as for petitions for excuses for absences.

Class Load

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 desired in residence at Western. The normal maximum load for the Spring and Summer Sessions is nine hours. Students employed part-time should reduce their class loads proportionately. If a student works full-time, his/her academic load should not exceed eight to ten hours. Full-time teachers will be limited to a maximum of six hours each semester, either on campus, through the Division of Continuing Education, or both. No full-time teacher may enroll at any time in more than two courses offered by the Division of Continuing Education.

Classification

Students at Western Michigan University are classified officially as follows:

- **Freshmen**—Students credited with 0-25 hours, inclusive.
- **Sophomores**—Students credited with 26-55, hours inclusive.
- **Juniors**—Students credited with 56-87 hours, inclusive.
- **Seniors**—Students credited with 88 hours or more.

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 or teaching certificates granted at the close of the Summer Session. Students who take or complete such courses will receive their degrees and certificates at the close of the Fall Semester.
Students who fail to meet the standards will be removed from graduation lists automatically. Such students will be placed in the class of the succeeding semester or session only after reappraisal for graduation, assuming other requirements can then be met. When a student fails to meet requirements for graduation resulting from failed courses, from incomplete work, or for any reason for which the student accepts responsibility, 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.

Comprehensive Examinations

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

1. All credit will be posted as credit only, without grade or honor points. Students who do not achieve a sufficient score for credit will have no entry made.
2. Credit by comprehensive examination in courses numbered 30 or higher can be used to meet the requirement that one-half of all academic work must be completed at a four-year degree-granting institution.
3. Credit by comprehensive examination can be used to meet all University graduation requirements, except the minimum residence requirements.
4. Credit by comprehensive examination can be posted only for admitted students who have either previous or current enrollment.
5. All credit by comprehensive examination is normally considered undergraduate credit.

Examination fees are assessed on a credit hour basis and are the same for all students. The current fee schedule: less than four credit hours, $25.00; Four credit hours to eight credit hours, $50.00. By special arrangement, some course examinations may require higher fees.

Course Numbering System

The course numbering system is limited to three digits. The first digit indicates the level of work. The second digit indicates an area of study within the series or level. The third digit indicates the specific course number in each area and each series. Undergraduate courses are numbered from 100 through 499. Graduate courses are numbered 500 through 799. Courses numbered 500 through 599 are for graduate and advanced undergraduate students. If the course number has been changed within the past three years, the former number is shown in parentheses following the current course number.

Course Numbers

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<tr>
<th>Course Levels</th>
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<tr>
<td>0-89</td>
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<td>90-99</td>
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<td>700-799</td>
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Graduate seminars, theses, independent research, etc.

Credit/No Credit System

The regulations of a system supplementing the A,B,C,D, and E grading system but not replacing it, except as the student wishes, are as follows:

1. "Credit" will be posted for each student who earns a grade of "C" or better.
2. "No Credit" will be posted for grades below a "C." Faculty members will not be notified whether a student is taking a course for a grade or for Credit/No Credit.
3. A student may elect for Credit/No Credit any course approved for General Education or General Physical Education credit, as well as other courses not counting toward his/her major or specified in his/her curriculum as defined in the University Undergraduate Catalog. Directed Teaching, a required course, is taken on a credit/no credit basis.
4. Acceptance of Credit/No Credit in required courses may be permitted on an individual basis by the head of the department or dean of the college requiring the course.
5. A student may change only during the drop/add period from Credit/No Credit to grade or from grade to Credit/No Credit.
6. Credit/No Credit courses, while counting toward a degree, will not be used to determine the overall grade point average (GPA) of the individual student.

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

Graduate schools, in general, do tend to favor those applicants who have good letter grades on their transcripts.

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 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.

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.

Student requests for an examination at a time other than that scheduled will not be honored.

The Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 (FERPA) 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 records.

Western Michigan University accords all the rights under the law of the student’s record, except those rights that are limited. No one outside the institution shall have access to, nor will the institution disclose any information from, students' educational records without the written consent of the students, except to personnel within the institution, to officials of other institutions in which students seek to enroll, and to the United States Department of Education. No one outside the institution shall have access to, nor will the institution disclose any information from, students' educational records without the written consent of the students, except to personnel within the institution, to officials of other institutions in which students seek to enroll.
enroll, to persons or organizations providing students financial aid, to accrediting agencies carrying out their accreditation function, to persons in court cases involving the student, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the Act.

Within the Western Michigan University community, only those members, individually or collectively, acting in the students' educational interest are allowed access to student educational records. These members include faculty, administration, clerical and professional employees, and other persons who manage student record information (e.g., Office of the Registrar, Academic Records Office, Controller, Financial Aid, and the Office of Admissions).

At its discretion, the institution may provide Directory Information in accordance with the provisions of the Act to include: student name, address, telephone number, date and place of birth, curriculum and major field of study, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, participation in officially recognized activities and sports, and weight and height of members of athletic teams. Students may withhold Directory Information by notifying the 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, to challenge the contents of these records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if they feel the decisions of the hearing panels to be unacceptable. The Registrar at Western Michigan University has been designated by the 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 records. 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 transcript of an original or source document which exists elsewhere). These copies are made at the students' expense, at the prevailing rate of ten cents per page.

Educational records do not include the records of institutional, administrative, and educational personnel, which are the sole possession of the maker and are not accessible or revealed to any individual except a temporary substitute, records of the law enforcement unit; student health records; employment records, or alumni records; Health records, however, may be reviewed by physicians of the students' choosing. Students may not inspect and review the following, as outlined by the Act: financial information submitted by their parents; confidential letters and recommendations associated with admissions, employment, or job placement, or honors to which the students have waived their rights of inspection and review; or educational records containing information about more than one student, in which case the institution will permit access only to that part of the record which pertains to the 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 students' requests, 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 who, within ten days after receiving such request, will inform students of the date, place, and the time of the hearing. Students may present evidence relevant to the issues raised and may be assisted or represented at the hearings by one or more persons of their choice, including attorneys, at the students' expense. The hearing officer who will adjudicate such challenges will be the Registrar or a person designated by the Registrar, who does not have a direct interest in the outcome of the hearing.

Decisions of the hearing officer will be final, 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 present the educational records statements containing 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.

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.

Grade Point Average
A grade point average is obtained by dividing the total number of honor points earned by the total number of official credit 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.

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 Type</th>
<th>Honor Points</th>
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<tbody>
<tr>
<td>A</td>
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<td>AB</td>
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<tr>
<td>B</td>
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<td>F</td>
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Additional grades may be assigned if the outcome of the challenge is unsatisfactory to the students, the students may request a hearing. If the decisions are in agreement with the students' requests, the appropriate records will be amended. If not, the students will be informed of their right to a formal hearing by the Registrar. Students may then request a formal hearing. The request must be made in writing to the Registrar who, within ten days after receiving such request, will inform students of the date, place, and the time of the hearing. Students may present evidence relevant to the issues raised and may be assisted or represented at the hearings by one or more persons of their choice, including attorneys, at the students' expense. The hearing officer who will adjudicate such challenges will be the Registrar or a person designated by the Registrar, who does not have a direct interest in the outcome of the hearing. Decisions of the hearing officer will be final, 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 present the educational records statements containing 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.

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

- Fall/Winter Semester
  - Undergraduate: 12 hours
  - Graduate: 9 hours
  - Doctoral: 6 hours

- Spring/Summer Session
  - Undergraduate: 6 hours
  - Graduate: 5 hours
  - Doctoral: 4 hours

The University does allow part-time status to that class allowetl a student during a semester or session. The only class allowetl a student during a semester or session is in the official drop-add period of each semester or session.

Graduation
Application for graduation must be made no later than seven weeks before the anticipated graduation date. In order to secure a graduation audit statement before registration for the final semester, a student should apply during his junior year. Application for graduation:

- Summer Session
  - Apply by April 1, but not later than July 1.
- Fall Semester
  - Apply by January 1, but not later than November 1.
- Winter Semester
  - Apply by September 1, but not later than March 1.
- Spring Session
  - Apply by January 1, but not later than May 1.

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.

Honors
Honors are conferred upon graduating students who have displayed a 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 considered.
2. Credits and honor points earned in correspondence and extension classes will be counted toward honors.
3. All student credits earned 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 diploma and final transcript.

"I" Incomplete
This is a temporary grade which may be given to an undergraduate student when illness, necessary absence, or other reasons beyond the control of the student prevent completion of course requirements by the end of the semester or session. This grade may not be given as a substitute for a failing grade.
A grade of "I" must be removed by the instructor who gave it or, in exceptional circumstances, by the department chairperson. If the unfinished work is not completed and the "I" grade removed within one calendar year of the assignment of the "I," the grade shall be converted to an "E" (failure). Students who receive an incomplete grade in a course must reregister for the course in order to remove the "I."

An instructor who assigns a grade of "I" will complete an official Report of Incomplete Work form indicating the remaining requirement for removal of the incomplete grade and indicating the time allowed, if less than one full year. The instructor should retain a copy for his/her own records and submit a copy to the departmental office. The remaining copies should be returned, along with the grade sheets, to the Academic Records Office, which will provide the student with a copy.

I.D. Regulations
Each student on campus is required to have an identification card, which includes photo, name, social security number, student signature, and validating label. Each new student is eligible for an I.D. card free of charge. This card should be validated each semester and used throughout the student’s entire enrollment at Western. An official sticker for the semester is affixed at validation, at which time students receive an official copy of their current schedule, athletic tickets where appropriate, and an opportunity to update their personal information file. There will be a $5.00 charge for a lost or mutilated I.D. card. Dates, time, and place of I.D. photography and validation are published in the Schedule of Classes prior to each semester or session. At other times, business may be conducted at the Registration Department.

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

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, which, in turn, requires planning in advance of the registration period. Sufficient time, therefore, must be allowed for such planning and for obtaining the necessary faculty and administrative approvals.

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

Approval Process
The faculty member must accept and approve the student and the project, and then submit the agreed-upon proposal on the appropriate University form to the department chairperson for approval. If the chairperson approves, information copies of the form must be submitted to the dean and the Registrar. The Registrar will not accept registrations without this information and authorization. The granting of approval by the department chairperson may involve considerations, such as faculty workload, which go beyond the merits of the project.

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

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

Interinstitutional Study
Western Michigan University students may take classes at Kalamazoo College, Kalamazoo Valley Community College, and Nazareth College through a cooperative program. Information and enrollment forms may be obtained from the Director of Records, Room 3210, Seibert Administration Building.

Registration
Advance Registration
In the interest of providing as many students as possible their requested schedules, Western offers, through its Registration office, advance registration. Student fees must be paid on or before two weeks prior to final registration, or the advance registration will be cancelled. A final day for registration is designated for those who did not advance register and for those whose advance registration was cancelled.

The procedure for advance registration is set forth in the Schedule of Classes, issued prior to each semester and each session.

Late Registration Fee
See Student Fees.

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 grade and credit earned the final time in the course will count toward curricular or degree requirements. All courses taken, even if they have been repeated, will be counted in grade point averages. Grade point averages will be adjusted for repeated courses, if necessary, only at the time of graduation. A repeated course is not removed from the student's record.

Scholarship 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 Any course that is repeated after the conditions of Good Standing are restored, Probation will be removed.
5. Continued Probation If the overall grade point average increases 0.1 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 at the end of an enrollment period of Probation 01 or better, 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. Exceptions may be granted, at the discretion of the Director of Admissions, where the increase has been substantial but still fails fractionally short of the minimum 2.0 requirement. Students who have been dismissed from Western are expected to remain out at least one full fifteen-week semester. The Committee on Readmissions is concerned with the extent to which the dismissed student, who is applying for readmission, has resolved the causes of past academic difficulty. It is required, therefore, that the student include a written statement with the re-entry application.

Student Directory
The WMU Faculty/Staff/Student Telephone Directory is published annually by the University. It is distributed during early November, when changes are made, to all students in residence halls, family housing units, and is available at the Information Center in the Seibert Administration Building.

Individual listings in the WMU Student Directory contain the following information:
1. Name
2. Curriculum, class
3. Local address and telephone number
4. Home address

Students wishing to exclude any or all of the above information from the WMU Student Directory must fill out a Directory Exclusion Form in Room 3210, Seibert Administration Building, during the first five days of classes Fall Semester. During Winter, Spring, and Summer terms, students may restrict this information to academic use by filling out the Directory Exclusion Form.

Transcripts
A student desiring a transcript of his/her record in this University should write to the Office of Academic Records, 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 $2.00 each. No transcript will be released except upon written authorization of the student.

Transferring Credit Back To WMU
All transfer regulations governing new transfer students apply equally to WMU students who take work at other institutions that they wish to transfer back to WMU.

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.
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, in underenrolled courses, as determined by the departments, 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 Academic Records Office for the authorization form. The student then proceeds to the drop/add center during posted days and hours and checks with 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 the student will present this card to the assessor when processing their added class.

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.

Veterans’ Assistance
The Academic Records Office on the third floor of the Administration Building certifies veterans under the G.I. Bill and its extensions.

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

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

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

Remedial action on the part of the student is recommended in the letter.

A complete record of all classes taken and grades received is maintained in the Academic Records Office. 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 $2.00 charge for mailed copies.

Students who are academically dismissed or on continued probation must see the Director of Records 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.

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 Academic Records Office 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.

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 officially withdraw from class 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.
The University endorses, as a guideline for A. Introduction

34 GENERAL REGULATIONS

Student Academic Rights: Policies and Procedures

A. Introduction

The University endorses, as a guideline for policy, the following section from the Joint Statement on Rights and Freedoms of Students.

In the Classroom The professor in the classroom and in conference should encourage full discussion, inquiry, and expression. Student performance should be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards.

Protection Against Improper Academic Evaluation Students should have protection, through orderly procedures, against prejudiced or capricious academic evaluation. At the same time, they are responsible for maintaining the standards of academic performance established for each course in which they are enrolled.

Protection of Freedom of Expression Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.

B. Policies and Procedures

1. Students should be fully informed by the faculty about course requirements, evaluation procedures, and the academic criteria to be used in each class. This information should be provided at the beginning of the semester or sufficiently in advance of actual evaluation.

2. Procedures for Resolving Student Grievances Related to Grading

A. Students have the right to have all their examinations and other written graded material made available to them with an explanation of the grading criteria. Faculty should retain all such material not returned to the student for at least one full semester after the course was given. Faculty are not required to return such material to the student, but must provide reasonable access to it.

B. Whenever a student believes he/she has a grievance regarding a grade, he/she should first arrange a meeting with the instructor, who may be able to explain the reasons for the grade or recommend a change, if warranted.

C. If the student believes that he/she has not received a satisfactory resolution of the grievance from the instructor, he/she should then go to the department chairperson or head, who may effect a satisfactory resolution.

D. If the student is still dissatisfied after seeing the department chairperson or head, the student should next see the University Ombudsman. The function of the Ombudsman in this situation is to collect information from both the student and the faculty member and then make a decision that (a) the student's grievance is unwarranted and should not be considered further, or (b) there is sufficient evidence that the situation be considered by the Undergraduate Committee on Academic Fairness.

E. The Undergraduate Committee on Academic Fairness consists of three faculty and three undergraduate students.

F. When a case is presented to the Committee, the Committee shall investigate it, making sure that all interested parties have a full opportunity to present their position. The Committee will recommend (a) no grade change, (b) a change of letter grade, (c) credit/no credit, or (d) any other grade used by the Records Office.

G. If the Committee decides there should be no change of the grade, they will so inform the student, the faculty member, the department chairperson or heads, and the Ombudsman. If the Committee decides to recommend a change of grade, the Committee will first inform the faculty member of its intent so that he/she may initiate the change. If the faculty member prefers not to initiate the change, the Committee will do so by notifying the University Registrar.

H. To protect all parties involved in any case, the strictest privacy consistent with the Committee's task will be maintained.

I. Occasions do occur when a faculty member or an administrative official may wish to question a grade or a grade change. In such instances, these procedures, beginning with review by the Ombudsman, shall be available to them.

3. Policies and Procedures Regarding Requirements

A. All students who seek advice on academic requirements will be provided written copies of their academic advisor's recommendations, and students will not be held responsible for errors made by their advisors. This section is not to be interpreted to mean that the student is relieved of responsibility for meeting the total graduation requirements stated in the catalog in force at the time he/she was admitted, or in a later catalog if he/she chooses to meet its graduation requirements.

B. The student shall not be held responsible for meeting curricula requirements that are not listed or not applicable under the catalog governing the work he/she is taking.

C. Every department shall provide systematic procedures for students to express their views on matters of program and curriculum.

D. University policy and implementation of such policy should not be determined and enforced according to the needs of computer programming or records. Special care should be taken to insure that no individual is treated unfairly because of computer problems.

E. The University Ombudsman will have the authority to investigate complaints, and recommend or negotiate fair solutions on behalf of the student.

Conduct and Discipline

Rules and regulations governing student conduct and discipline are developed by the Student Services Council, composed of faculty administration and students. The policies, when approved, are published in The Code of Student Life. Rules and regulations appearing in this Code are developed under the philosophy reflected in this statement: "It is the intention of Western Michigan University that the individual student help develop a responsible, intelligent University community by maintaining his or her own integrity through self-discipline and a sense of responsibility to the community." The Dean of Students has overall responsibility for student conduct and discipline. It is implemented by the Office of University Judicials. When infractions of rules and regulations occur, violators will be referred to the Office of University Judicials for disposition.
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
The student who completes a curriculum conforming to the requirements of this degree, with at least seventy hours of General Education, Language and Literature, Science, Social Science, and designated Fine Arts courses, including at least eight hours in one foreign language, is eligible for the degree of Bachelor of Arts. 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.

Bachelor of Business Administration

Bachelor of Fine Arts

Bachelor of Music

Bachelor of Science
The student who completes a curriculum conforming to the requirements of this degree, with a minimum of forty hours taken from the General Education program, and courses in the Language and Literature, Science, or Social Science areas, is eligible for the degree of Bachelor of Science.

Bachelor of Science in Engineering
Aircraft, Automotive, Computer Systems, Electrical, Environmental, Industrial, Mechanical, and Paper

Bachelor of Science in Medicine
Physicians’ Assistants

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 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. The second degree may not be the same as the first and must be in a substantially different curriculum. Students who are interested in a second degree must receive written approval for their program of study from the Director of Academic Records before beginning their course work.

Doctor of Philosophy
Programs leading to the Ph.D. degree are offered in Mathematics, Psychology, Science Education, and Sociology.

Doctor of Public Administration

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. Courses must be selected so that the requirements in at least one of the curricula are fulfilled before graduation.
2. The student must complete a major with a minimum of twenty-four hours and a minor with a minimum of fifteen hours. A thirty hour subject major or thirty-six hour group major is required of students in Elementary and Secondary Education. Students in Elementary Education must complete two minors or group minors of twenty or twenty-four hours each; or one major or group major of thirty or thirty-six hours; in addition to the major or two minors, a minor in Elementary Education is required. 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 curricula as modified by substitutions approved through normal channels.
3. Each student must complete thirty-five hours of work in approved General Education courses. 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 attained in any major or minor(s) presented for graduation.
5. Each student will fulfill all the requirements of the Intellectual Skills Development Program, as outlined in this section.
6. Each student must satisfy the University computer literacy requirement, as outlined in this section.

Graduate Degrees
Master of Arts
Master of Business Administration
Master of Developmental Administration
Master of Fine Arts
Master of Library Administration
Master of Music
Master of Public Administration
Master of Science
Master of Science in Accountancy
Master of Science in Librarianship
Master of Social Work
Specialist in Education
Sixth-year programs are offered in Educational Leadership and School Psychology.

Doctor of Education
Three doctoral degree programs are offered by the College of Education, Counseling and Personnel, Educational Leadership, and Special Education.
7. Each student must complete two semester hours of general physical education in all courses. 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 thirty 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 courses not to specific curricular requirements nor to total hours required for graduation. Veterans of military service (minimum of one year continuous active duty) shall, upon request, be granted two hours of general physical education credit.

A student limited in physical activity may receive counseling for courses suited to his general physical education through the Medical Recommendation Procedure. (See "General Physical Education," Exceptions, p. 55.)

8. Minimum residence requirements. All candidates must present a minimum of thirty hours transfer credit from Western Michigan University. Ten of the last thirty hours must be taken through Western Michigan University. Correspondence credit and credit by examination may not be used to satisfy any of the minimum requirements.

Individual colleges and departments may have additional residency requirements.

9. A maximum of fifteen semester hours of credit in correspondence courses may be applied to a degree program.

Transfer Students entering under the 1983-85 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 local tests.

Course placement decisions for each student are made at this time.

Writing
All WMU students are required to pass a college-level writing course. Students whose test results indicate weak writing skills will be placed into a remedial course, which must be passed 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.

The college-level writing course options are:
- ENGL 105
- BIS 142 (Business students)
- IEGM 102 (Engineering and Applied Sciences students)
- HIST 106
- PHIL 100

Students who complete the following course sequence in designated sections of the General Studies Integrated Program are considered to have fulfilled the college-level writing requirement:
- GSSC 121
- GSCI 132
- Remedial writing course options are:
- ENGL 100
- BIS 100 (Business students)

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. Further coursework in mathematics is not, at this time, required to fulfill Intellectual Skills Development Program requirements.

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. New students entering WMU under the 1983-85 and subsequent catalogs will participate in the program.

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Computer Literacy Requirement
Computer literacy is the ability to use computer software as appropriate in his or her own discipline.

1. The ability to write, enter, and run a simple program in a general purpose computer language. This knowledge includes the ability to write programs with input and output features, processing of data, loops, and decision making.

2. Knowledge of computer terminology, and the current computer technology, including at least the following:
- Knowledge of computer technology and the potential of computers, in general or specifically targeted to the student's own field of study.

3. It is also desirable that a computer literate student have an awareness of some of the ethical, moral, and legal implications of the impact of computer technology on today's society.

Students can fulfill this requirement in one of three ways:

1. By successfully completing an approved course. Approved courses include Computer Science 105 and Business Information Systems 102.

2. By completing a major or minor program approved as satisfying the requirement. Students who transfer and wish to determine whether work taken elsewhere meets the requirement should consult their intellectual skills curriculum advisers.

3. By completing a major or minor program approved as satisfying the requirement. Students wishing further information on courses or programs that satisfy the requirement should consult their intellectual skills curriculum advisers.

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wish to determine whether work taken elsewhere meets the requirement should also consult their advisers.

3. By certification of computer literacy by examination.

This requirement applies to all students beginning collegiate work during Fall 1983, or subsequent to that time.

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. Nonvocational in nature, these attempts to insure some degree of breadth for every student at WMU, and to provide 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 may be met by completing either (1) the Distribution Program or (2) the Integrated Program. Honors College students may satisfy their General Education requirements through the Honors College General Education program. Additional information may be obtained from your curriculum adviser. Any WMU students enrolled prior to the Fall Semester of 1973 are also eligible to meet their General Education requirement via the General Studies program, which is described in all WMU catalogs from 1965-66 through 1972-73.

1. The Distribution Program includes a large number of courses offered for General Education by numerous departments throughout the University. These 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 data necessary for synthesizing their experience into an understanding of themselves and their world.

Within the guidelines below, students can take classes in a number of departments. Quite a few of these courses can count toward a student’s major or minor as well as for General Education credit. Curriculum advisers will be glad to assist students in selecting and planning their Distribution Program.

2. The Integrated Program is designed to increase the student’s ability to analyze information, deal creatively and synthetically with knowledge, and be able to place value and work on the different ways of knowing. This complete General Education Program is available to all students, regardless of their major or minor programs.

All courses listed in italics in this catalog have been approved for General Education purposes.

Requirements for the Distribution Program

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, with the exception of courses from the College of General Studies.

4. At least two courses (minimum of six hours) must be taken from 300-500 level approved General Education course work.

5. No more than two courses from any one department (except General Studies courses) count toward the total of thirty-five hours.

General Education Distribution Program

Area I

Humanities and Fine Arts

ANTH— 370
ART— 120, 130, 140, 220, 221
CAS— 170
ENGL— 107, 110, 111, 150, 210, 223, 252, 282, 307, 311, 312, 315
GSSC— 101, 102, 200-A, 200-B, 200-C, 302, 315, 316, 400, 401, 409
LANG— 350, 375, 450
FREN— 100, 101
GER— 100, 101
GREK— 100, 101
LAT— 100, 101
RUSS— 100, 101
SPAN— 100, 101
LING— 100, 105
MEDV— 145
MUS— 150, 151, 350, 450
PHIL— 200, 201, 301, 303, 307, 310, 311, 312, 313, 314, 322, 332, 333, 334
REL— 100, 200, 305, 306, 313
Thea— 100

Area II

Social and Behavioral Sciences

ANTH— 100, 110, 210, 240
BAS— 200, 300
BIS— 292
ENGL— 100, 201, 202
GSSC— 121, 123, 256, 325, 350, 425, 444
GEOG— 102, 311, 361, 380, 383
HIST— 100, 101, 102, 103, 204, 210, 211, 301, 302, 303, 315, 341
MGMT— 404
MLSC— 204
PSCI— 100, 200, 250, 300, 340, 344, 350
PSY— 194
REL— 323, 324, 332
SOC— 100, 171, 190, 200

Area III

Natural Sciences and Mathematics

ANTH— 250
BIOL— 101, 102, 105, 107, 234
BMEC— 112, 230
CHEM— 101, 102, 103, 107, 140
GSCI— 130, 131, 132, 133, 134, 432, 433, 434, 436
GEOG— 100, 105, 204, 206, 350
GEOLE— 100, 130, 300
MATH— 116, 122, 190, 200, 366
PHYS— 102, 104, 106, 110, 210, 211

Area IV

Non-Western World

ANTH— 120, 220, 332
ENGL— 313, 314
GENL— 304, 305
GEOG— 381, 382, 386, 389
HIST— 370, 371, 381, 386, 389
MUS— 352
PSCI— 341, 342, 343
REL— 302, 303, 307, 308
SOC— 335, 336

Area V

Optional Electives

AGR— 100
BIS— 142
CS— 105
ENGL— 105, 305
GEOL— 312
GENL— 195, 222
GSSC— 356
HIST— 390
IEGM— 102
MLSC— 101
PEPR— 100
SWRK— 100
SPPA— 200

College of General Studies Integrated Program

Requirements for the Integrated Program.

(Students must contact the program adviser for formal admission.)

Beginning Level (Students must complete by the end of their sophomore year)

Students who successfully complete the beginning courses meet the college level writing requirement of the University Intellectual Skills Program.

GUM 102, GSCI 132, GSSC 121 . . . . 12 hrs.

Intermediate Level

GUM 101, GOHUM 200, or GUM 302 . . . . . 4 hrs.

GSCI 131, GSCI 133, or GSCI 433 . . . . . 4 hrs.

GSSC 123, GSSC 256, or GSSC 325 . . . . . 4 hrs.

GENL 304 or GENL 305 . . . . . 4 hrs.

Elective from Program offerings . . . . . 4 hrs.

Advanced Level

GINT 490 . . . . . 4 hrs.

General Education Requirement for Transfer Students

1. Students transferring with MACRAO approved Associate Degrees from Michigan Community Colleges The following Michigan Community Colleges have signed the MACRAO agreement, and transfer students with one of the degrees listed below are considered to have fully met first and second-year General Education requirements at Western Michigan University. Such students need only satisfy Western’s junior-senior General Education requirement.

Students transferring from these institutions without an approved associate degree will be evaluated to the fullest extent possible according to the General Education criteria in effect at the respective community college.

(*) Asterisk in the list below indicates that agreement applies only to degrees conferred by the Division of Arts and Sciences and specifically exempts degrees conferred by the Division of Applied Arts and Sciences.)

Bay De Noc Community College
AA, AS
2. Transfer students from other Michigan Community Colleges may satisfy the General Education requirement by:

A. Completion of a general education program (provided that such student's initial enrollment at the two year institution occurred before the Fall term of 1974)

B. Completion of the Distribution Program

C. Completion of the Integrated Program

In order to determine remaining General Education requirements, such students should contact their curriculum adviser.

3. Students from Out-of State Two-Year Colleges or from Senior (Four Year) Colleges may satisfy the General Education requirement by:

A. Completion of the Distribution Program

B. Completion of the Integrated Program

In order to determine remaining General Education requirements such students should contact their curriculum adviser.

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 adviser for further information.

General Education Equivalents for Transfer Students

In determining the extent to which the General Education requirements of Western Michigan University have been met by credits earned at other colleges, the following rules shall apply:

1. Students with a MACRAO approved associate degree from a Michigan community college may satisfy their requirements by successfully completing two 300-500 level General Education courses. A course in Non-Western World must be included in this coursework unless a substitute was transferred.

2. Students not covered by 1 above must meet the following WMU requirements:

A. Humanities and Fine Arts—A minimum of six semester credits from the following fields:
   - Art Appreciation or History
   - Theatre (Introduction or History)
   - Film ( Appreciation or History)

B. Social and Behavioral Sciences—This area may be satisfied by a minimum of six semester hours drawn from any of the following:
   - General Social Science
   - Geography (Regional, Human)
   - Political Science (Introduction, principles, international relations, foreign and comparative political systems, general government)
   - Psychology (general)
   - Sociology (Introduction, principles, social problems)
   - Social Work (Introduction only)

C. Natural Sciences and Mathematics—A minimum of six semester credits from the following fields:
   - Anthropology (general)
   - Biology (general, non-major course, outdoor science)
   - Chemistry (general, non-major course, Astronomy)
   - General Physical Science
   - General Biological Science
   - General Earth Science
   - Environmental Science (emphasis on Chemistry, Physics, Biology, Geology, or Geography)

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

E. Students with less than the required coursework in any of the above areas (A, B, C, or D) must make up deficient hours by selecting from appropriate WMU General Education courses.

F. All students must meet the minimum requirement of thirty-five semester hours in General Education, and this must include at least two courses at the 300-500 level.

Student Planned Curriculum

The Student Planned Curriculum is intended for students whose educational goals cannot be accommodated within the framework of other University curricula. It provides such students with the opportunity to plan an individualized program of study without the usual restrictions imposed by departmental or college boundaries. The traditional major and minor, for example, are not required in the Student Planned Curriculum.

Any undergraduate student is eligible to enter the Student Planned program, provided that a written statement outlining educational goals and the proposed course of study has been completed prior to the completion of seventy-five semester hours of credit.

Degree requirements in the Student Planned Curriculum consist of (1) the University’s General Education Program and (2) electives sufficient to meet graduation requirements. In order to meet the student’s educational objectives, these electives are selected in consultation with a counselor and/or the faculty adviser(s). Further information concerning the Student Planned Curriculum may be obtained from the University Counseling Center, 2510 Faunce Student Services Building.

Undergraduate Curriculum and Approved Majors

College of Arts and Sciences: LAS

CURR: ASC Arts and Sciences
Major: AMS American Studies
MAJ: ANT Anthropology
MAJ: BIO Biology
MAJ: BMS Biomedical Sciences
MAJ: BUS Business Oriented Chemistry
MAJ: CHM Chemistry
MAJ: CAS Communications Arts and Sciences
MAJ: CPS Computer Sciences
MAJ: EAR Earth Science
MAJ: ECO Economics
MAJ: ENG English
MAJ: FREN French
MAJ: GEG Geography
MAJ: GEL Geology
MAJ: GEP Geophysics
MAJ: GER German
MAJ: HCY Health Chemistry
MAJ: HIS History
MAJ: LAT Latin
MAJ: LIN Linguistics
MAJ: MAT Mathematics
MAJ: PHI Philosophy
MAJ: PHY Physics
MAJ: POL Political Science
MAJ: PSY Psychology
MAJ: PUB Public Relations
MAJ: REL Religion
MAJ: SDS Social Science
MAJ: SOC Sociology
MAJ: SOA Sociology and Anthropology
MAJ: SPA Spanish
MAJ: STA Statistics
MAJ: TOU Tourism and Travel

CURR: LA Liberal Arts
Major: Must elect major from ASC Curriculum

CURR: CRJ Criminal Justice
Major: CRJ Criminal Justice

CURR: EVS Environmental Studies
Major: EVS Environmental Studies

CURR: PD Pre-Dentistry
Major: Must elect major from ASC Curriculum

CURR: PL Pre-Law
Major: Must elect major from ASC Curriculum

CURR: PM Pre-Medicine
Major: Must elect major from ASC Curriculum

CURR: PPL Pre-Professional
Major: Must elect major from ASC Curriculum

CURR: PAP Public Administration
Major: Any undergraduate major

CURR: PPA Political Science in Public Administration
CURR: PUH Public History
Major: HIS History
CURR: STC Student Planned Curriculum
Major: STC Student Planned Curriculum
CURR: BRN Bronson Nurses
Major: BRN Bronson Nurses
CURR: PTC Permission to Take Classes
Major: PTC Permission to Take Classes

Coordinate Majors
(These are majors to be selected only along with a standard major.)
AIS African Studies
ASIS Asian Studies
CS Comparative/Cross-Cultural Studies
EVT Environmental Studies
EUR European Studies
LMS Latin American Studies

College of Business: BUS
CURR: PBA Pre-Business Administration
Major: Must elect major from BAD Curriculum
CURR: BAD Business Administration
Major: ACT Accounting
ADS Administrative Systems
AGB Agribusiness
ADV Advertising
BCM Business Communications
CIS Computer Information Systems
ECC Economics
FIN Finance
GBS General Business
IDM Industrial Marketing
MGT Management
MKM Marketing (General)
MKB Marketing (Kendall Business)
PAB Public Administration
REA Real Estate
RET Retailing
STD Statistics

College of Education: EDU
CURR: EED Elementary Education
Major: AMS American Studies
ANT Anthropology
BIO Biology
CHM Chemistry
CAS Communication Arts and Sciences
EAS Earth Science
ECO Economics
EGM Educational Group Minors
ENG English
FRE French
GEO Geography
GER German
HIS History
MAT Mathematics
PHY Physics
POL Political Science
SCI Science
SOS Social Science
SOC Sociology
SPA Spanish
CURR: EEM Elementary Music
Major: MUS Music, Elementary
CURR: JHS Middle School and Junior High School
Major: CAS Communication Arts and Sciences
ENG English
FRE French
GER German
MAT Mathematics
SCI Science
SOS Social Science
SPA Spanish
CURR: SED Secondary Education
Major: AGQ Agriculture
AMS American Studies
ANT Anthropology
BIO Biology
CHM Chemistry
CAS Communication Arts and Sciences
EAS Earth Science
ECO Economics
ENG English
FRE French
GER German
HIS History
LAT Latin

MAT Mathematics
PHY Physics
POL Political Science
PSY Psychology
SCI Science
SOS Social Science
SOC Sociology
SPA Spanish
CURR: LIS Librarianship
Major: Should elect major from EED or SED
CURR: PEP Physical Education
Major: HED Health Education
PEA Physical Education—Coaching
PEE Physical Education—Elementary
PEE Physical Education—Secondary
REC Recreation
CURR: RUL Rural Elementary
Major: RUL Rural Life
CURR: SCH Special Education
Major: SCH Special Education—Orthopedically Handicapped
Major: SCH Special Education—Orthopedically Handicapped

College of Engineering and Applied Sciences:
CURR: AAS Special Education—Emotionally Disturbed
Major: SCH Special Education—Emotionally
Handicapped

(1) Students selecting engineering programs will be placed in "ENGINEERING DIVISION TEMPORARY" (EDT) curriculum until requirements have been met.

(2) Students selecting engineering-related programs will be placed in "GENERAL" (GCA) curriculum until Applied Science requirements have been met.

CURR: AGR Agriculture
Major: AGR Agriculture
CURR: ACE Aircraft Engineering
Major: ACE Aircraft Engineering
CURR: AME Automotive Engineering
Major: AME Automotive Engineering
CURR: AUM Automotive Management and Service
Major: Automotive Management and Service
CURR: AVO Aviation Tech and Operations
Major: AVO Aviation Tech and Operations
CURR: CSE Computer Systems
Major: CSE Computer Systems Engineering

College of Fine Arts: FAR
CURR: ART Art
Major: ART Art
Major: ART Art
CURR: EE Electrical Engineering
Major: EE Electrical Engineering
CURR: EGR Engineering Graphics
Major: EGR Engineering Graphics
CURR: EDT Engineering Division Temporary
Major: Select major from specific engineering division program
CURR: EVE Environmental Engineering
Major: EVE Environmental Engineering
CURR: FAM Family and Individual Relationships
Major: FAM Family and Individual Relationships
CURR: FAS Fashion Merchandising
Major: FAS Fashion Merchandising
CURR: FD Food Distribution
Major: FD Food Distribution

CURR: CFTA Food Service Administration
Major: CFTA Food Service Administration
CURR: GCA General
Major: GCA General
CURR: ICE Industrial Cooperative Education
Major: ICE Industrial Cooperative Education
CURR: ID Industrial Design 2
Major: ID Industrial Design
CURR: IET Industrial Education (Teaching)
Major: IET Industrial Education
CURR: IEN Industrial Engineering 1
Major: IEN Industrial Engineering
CURR: IT Industrial Technology (Non-Teaching)
Major: IT Industrial Technology
CURR: DAC Dance
Major: DAC Dance
CURR: MCS Music
Major: MCS Music
CURR: MHS Music History
that the specific requirements of a particular school will have been met.

Dentistry
Medical Sciences Adviser
2060 Friedmann Hall
383-6122
Most dental schools require three years of academic study and prefer baccalaureate degree candidates. They expect students to have good basic training in chemistry, biology, and physics, good communication skills, and some background in the humanities and social sciences. In general, dental schools require two semesters each of English, Physics, Biology, Inorganic Chemistry, and Organic Chemistry. Since minimum course requirements vary among medical schools, you should find out specific requirements by consulting the publication, Admissions Requirements of U.S. and Canadian Dental Schools, which is on reserve in Waldo Library and is also available in 2060 Friedmann Hall. The Dental Admission Test (DAT) is required by all dental schools, and is offered at Western Michigan University each spring and fall. Most preprofessional students at Western Michigan University major in either Biology, Biomedical Sciences, or Chemistry. However, dental schools look with equal favor on other majors, as long as students complete the minimal preprofessional requirements. It is important that premedical and preosteopathic students see the preprofessional adviser on a regular basis for curriculum guidance. The adviser is located in the College of Arts and Sciences Advising Office, 2060 Friedmann Hall.

Medical Sciences Adviser
2060 Friedmann Hall
383-6122
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 HB) and is also available in 2060 Friedmann Hall. The Medical College Admission Test (MCAT) is required by nearly all medical schools, and is offered at Western Michigan University each spring and fall.

Most premedical or preosteopathic students at Western Michigan University major in either Biology, Biomedical Sciences, or Chemistry. However, medical schools look with equal favor on other majors, as long as students complete the minimal premedical requirements. It is important that premedical and preosteopathic students see the preprofessional adviser on a regular basis for curriculum guidance. The adviser is located in the College of Arts and Sciences Advising Office, 2060 Friedmann Hall.

Preprofessional Curricula
Every professional school has prescribed the nature and amount of academic work to be completed as a prerequisite to the professional training for a particular vocation. Four years of higher education are generally required by most professional schools for entrance. Western Michigan University is able to offer its students courses of study that meet the requirements for this preprofessional training. It should be noted, however, that the courses outlined are only suggested plans to illustrate in general the kinds of programs that preprofessional students should follow. In every case students should plan their courses of study according to the requirements of the school to which they plan to transfer for professional training. It cannot be emphasized too strongly that the student should exercise care to make certain
Major and Minor Requirements

A major is a sequence of related courses totaling a minimum of twenty-four hours (thirty hours in elementary and secondary education or thirty-six hours in a group major in elementary or secondary education); a minor is a sequence of related courses totaling a minimum of fifteen hours (twenty hours in elementary and secondary education or twenty-four hours in a group minor in elementary or secondary education).

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

2. The curriculum may be general or specific to prepare for a specialized career or profession such as business, medicine, law, transportation technology, or engineering.

3. 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 advisers for approval of a major or minor program as soon as possible but not later than the junior year.

4. The candidate for a degree must complete a major and a minor. A candidate for the Elementary Provisional Certificate may elect instead a major of at least thirty semester hours (group major of thirty-six semester hours) or two minors of twenty semester hours (group minors, twenty-four semester hours). In addition to the major or two minors, the elementary education minor is required.

5. In certain cases, “group” majors totaling a minimum of thirty hours and “group” minors totaling a minimum of twenty hours are permitted. (Note: Students in elementary or secondary education must have thirty-six hour “group” majors and twenty-four hour “group” minors.) They usually consist of courses selected from related departments, as in the case of social science and science.

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

Programs Requiring Major and Minor Slips (In All Cases Check Catalog Requirements)

<table>
<thead>
<tr>
<th>USE CODE</th>
<th>DESCRIPTION</th>
<th>MAJOR AND/OR CURRICULUM SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
<th>USE CODE</th>
<th>DESCRIPTION</th>
<th>MAJOR AND/OR CURRICULUM SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
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<td>EGR</td>
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<td>Yes</td>
<td>MTL</td>
<td>Engineering Metallurgy</td>
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</tbody>
</table>

7. Minors may often be related to majors, so as to recognize naturally or closely related fields; for example, mathematics and physics, history and geography, literature and history.

8. It is not permissible to use education as a major or minor in any undergraduate curriculum with the exception of the elementary education curriculum. In the elementary education curriculum it is a required minor in addition to a major or two minors. (See elementary education curriculum.)

9. 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

10. A combination of foreign languages, or of English or American Literature with a foreign language, is not permissible.

11. Mathematics may not be combined with science (physics, geography, chemistry, or biology) for any major or minor sequence, but may be required to satisfy requirements of certain curricula.

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.
<table>
<thead>
<tr>
<th>USE CODE</th>
<th>DESCRIPTION</th>
<th>MAJOR AND/OR CURRICULUM SLIP REQUIRED</th>
<th>MINOR SLIP REQUIRED</th>
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Certificates

Teacher Certification—Provisional

The following types of teaching certificates are granted:

1. Michigan Elementary Provisional This certificate qualifies the holder to teach all subjects in grades kindergarten through eight, and in major or minor fields of grade nine, as specified on the certificate, in any public school in Michigan. It is valid for approximately six years and may be renewed once for three years, provided that the applicant presents ten semester hours of credit in a planned program approved by the University when earned after the issuance of the first certificate. A second three-year renewal may be granted the applicant who presents an eighteen semester hour planned course of study approved by the University. The candidate must meet the requirements for a degree as defined prior to the issuance of the first certificate.

2. Michigan Secondary Provisional This certificate is valid for teaching all subjects in grades seven and eight, and in subject matter fields in grades nine through twelve in which the applicant has completed a major or minor. It is valid for approximately six years and may be renewed once for three years provided that the applicant presents ten semester hours of credit in a planned program approved by the University when earned after the issuance of the first certificate. A second three-year renewal may be granted the applicant who presents an eighteen semester hour planned course of study approved by the University. The candidate must meet the requirements for a degree as defined prior to the issuance of the first certificate.

Teacher Certification—Continuing

To be qualified for teaching at the expiration of the elementary provisional or secondary provisional certificate, or its renewal as specified above, the applicant must qualify within the six-year period for the continuing certificate at the appropriate level. All continuing certificates are valid for continued teaching or administrative service in Michigan schools in the grades, subjects, or levels specified on the certificates.

The following procedures must be followed to qualify for the continuing certificate:

1. Application must be made to the Certification Officer, College of Education, Western Michigan University, prior to the expiration of the provisional certificate or its renewal.

2. The candidate must have taught successfully during the life of the provisional certificate for three years according to the validity of the certificate. The success of this teaching is determined by the State Board of Education upon recommendation of the University and of the local school district(s).

3. The candidate must present evidence of having completed a minimum of eighteen semester hours in a planned course of study or an approved master’s degree subsequent to the issuance of the provisional certificate and the degree. This advanced course of study must be approved by the Certification Officer in the College of Education.

4. The candidate must secure the appropriate blanks from the Certification Officer, complete the blanks, and return them to the University, accompanied by his or her provisional certificate.

The University will investigate the qualifications of the candidate, ascertain if the requirements for continuing certification are completed, and make appropriate recommendation to the State Board of Education. (Procedures for appealing certification decisions may be obtained from the Certification Officer, College of Education.)

Thirty-Hour Continuing Certificate

This certificate is not required but is available to the teacher who qualifies and requests such certificate. The same requirements pertain as for the continuing certificate, with the exception of the substitution of thirty semester hours of credit in a planned program or a master’s degree approved by the University for the eighteen semester hour requirement in the regular continuing certificate program.

New Michigan Law: All persons earning the Elementary eighteen hour or thirty hour Continuing certificate after July 1, 1983 will be required to have completed six semester hours of credit in the methods of teaching Reading; all persons earning the Secondary eighteen hour or thirty hour Continuing certificate after July 1, 1983 must have completed three semester hours. If this requirement has not previously been satisfied in the undergraduate program, the teacher must complete this as part of the eighteen or thirty hour program requirement for the Continuing or thirty hour Continuing certificate.

Persons who earn the Continuing certificate before July 1, 1983 will not be affected by this requirement.
Samuel I. Clark, Director of Honors

The Honors College coordinates honors work at Western Michigan University. Honors programs are designed for bright, creative, and enterprising students. These programs are flexible and accommodate the particular talents or inclinations of students and provide opportunity for students to closely associate with faculty and the academic departments of the University. Innovative and experimental teaching and learning, as well as traditional academic work, are an important part of Honors College programs.

There are two principal ways of associating with the Honors College. Entering first-year students who meet the selection criteria of the Honors College may enter the General Education Honors Program. Sophomores, juniors, and transfer students with excellent academic records may become members of the Honors College.

The General Education Honors Program (GEH) is an Honors College route toward fulfilling the General Education requirements of the University. First-year students enter the program when they first enter the University and are "provisional" members of the Honors College.

The program provides a challenging educational experience for many entering students. It offers opportunity for small classes, excellent instruction, and considerable intellectual freedom. General Education Honors consists of 36 semester hours of study, pursued mainly during the freshman and sophomore years.

Students normally meet this 36-hour requirement by selecting courses in three general academic areas: humanities, social science, and natural science. Courses fulfilling these requirements are selected from honors course offerings or from approved alternatives.

High school records, American College Test scores, extracurricular interests and activities, and enthusiasm for participation in honors programs are all considered in selecting students for GEH. Interested high school students are encouraged to address inquiries to the Honors College.

Membership in the Honors College is open to all sophomores, juniors, and transfer students with excellent academic records. Applications are generally not accepted from freshmen and seniors. Students who successfully complete General Education Honors are invited to enter the Honors College.

Honors College members must, in their senior year, write an honors paper or produce a creative work of art in their major academic field and must pass an oral examination given by their faculty which focuses on the senior project. An Honors College graduate is so designated upon graduation.

A variety of programs and activities are available to members of the General Education Honors Program and the Honors College. Independent study, interdepartmental major concentrations, special honors seminars, interuniversity enrollment at local colleges, and undergraduate internships in the community may be elected or arranged by Honors College students. The Russell H. Seibert fund, administered by the Honors College, provides modest financial support for a variety of undergraduate endeavors: teaching and research assistantships, research projects, and other creative activities. An Honors College curriculum is available to students who wish to take maximum advantage of the Honors College. The formal expectations of this curriculum are set forth in a brochure titled the "Honors College Curriculum as Preparation for Careers in . . . ." which is available from the Honors College. In addition, the Honors College sponsors a variety of cultural and social activities. These include film and lecture programs, travel seminars, special weekend workshops, and outdoor activities.

Continuation in the Honors College rests upon maintaining an adequate academic record and enrollment in one Honors College course (or appropriate honors section of a departmental course) each year that a student is associated with the Honors College. Failure to enroll in an honors course any academic year when a student is otherwise enrolled at the University shall be interpreted as withdrawal from the Honors College or the General Education Honors Program. A course may be of one or more credit hours. Exceptions must be negotiated in advance.
Departmental Honors Programs exist in a number of academic departments. Students enter these departmental honors programs by direct application to the departments. A student need not be in the Honors College to be a member of a departmental honors program. In general, these programs are reserved for students of high promise and performance who wish to pursue a special field of study with particular diligence. These programs require a minimum grade point average both to enter and to remain in them. They generally serve junior and senior students.

Departmental programs generally involve independent study, small group seminars, advisory faculty, and senior year papers or projects. Students interested in a particular departmental honors program should communicate directly with the department.

Many programs and opportunities administered by the Honors College are not limited to members of General Education Honors or members of the Honors College. Inquiries concerning its various programs are welcome from all Western Michigan University students.

Course Descriptions (HNRS)

This listing of honors courses does not include all honors courses available to Honors College students. Each semester a variety of honors seminars and departmental honors courses are offered. Many of these are applicable to General Education Honors requirements. Descriptions of departmental honors courses may be found under appropriate departmental listings elsewhere in this catalog. Honors College seminars are described in Honors College material printed each semester and titled "Information on Registration."

General Education Honors Courses

100 Civilization of the West I
4 hrs.
A survey of the human experience from the ancient civilization of the Near East, Greece, and Rome, through Medieval Europe to the era of the Renaissance and Reformation, with emphasis on the unique achievements of each culture.

101 Civilization of the West II
4 hrs.
A continuation of Civilization of the West I (though this course may be taken independently), surveying the rise of modern Europe from the sixteenth and seventeenth centuries, through the eras of Enlightenment and Revolution, to the present day.

120 Humanities I
2-4 hrs., Variable Credit
A study of humanity's creative and imaginative life as this is revealed in philosophical, religious, and esthetic works.

121 Humanities II
2-4 hrs., Variable Credit
Continuation of HNRS 120, Humanities I

202 Social Science I
2-4 hrs., Variable Credit
An historical account of the development of social science dealing with major questions about the nature of society and culture. Basic insights and concepts derived from anthropology, psychology, sociology, economics, geography, and political science are presented.

203 Social Science II
2-4 hrs.
Continuation of Social Science I.

290 Honors Seminar
Variable Credit
An undergraduate seminar for first- and second-year honors students. The content of the seminar varies and will be announced in advance. Admission by permission.

299 Independent Study
Variable Credit
An opportunity to explore individually, under the guidance of a member of the faculty, a topic or problem in almost any area.

Upper Level Honors College Courses

399 Field Experience
(Community Participation)
Variable Credit
An organized association with a person or institution involving work and learning activities related to a significant academic interest of the student.

490 Honors Seminar
Variable Credit
An undergraduate seminar for upper level honors students. The content of these seminars varies and will be announced in advance. Admission by permission.

492 Visiting Scholars
Variable Credit
A seminar involving visiting scholars from other institutions and countries. The content of these seminars varies and will be announced in advance. Admission by permission.

499 Individual Studies
Variable Credit
Students in the Honors College may enroll in this course for one or several semesters upon approval of the Director of Honors. The course is an administrative facility for individual study outside the usual course structure.
Western Michigan University conducts active programs of international education, research and service on-campus and in a variety of overseas locations. Coordination of all international programming (excluding foreign students) at the University is provided by the Office of the Dean of International Education and Programs. The responsibilities of the office include the University’s relations with foreign universities and agencies as well as American universities and agencies operating abroad. Also included are the University’s foreign study programs, faculty exchanges, student exchange programs involving Americans, and study tours abroad. The Office also aids in the development and implementation of international research, consulting and technical assistance programs. The Dean is advised by a special International Education and Programs Advisory Committee.

On campus, the International and Area Studies Program serves as the focus of five specialized studies: African, Asian, European, Latin American, and Comparative/Cross-Cultural Studies. The course offerings for these interdisciplinary programs are selected from more than a dozen departments. Each of the five area studies programs offers courses on the regional arts, culture, languages, European 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. The Center for Korean Studies and the Canadian Studies Committee also sponsor course offerings in their fields of interest.

Travel, direct personal experience of another culture and language, study in another tradition, all are enriching experiences, both academically and personally. Furthermore, in our era of global affairs and multinational business, the foreign study experience may prove a real asset in career development. In order to facilitate this experience, Western Michigan University offers a variety of opportunities to travel and study abroad. Seminars are regularly conducted in China, Japan, Korea, and Germany. Also available are programs administered elsewhere with which W.M.U. has arrangements e.g. the Cooperative Undergraduate Language Programs in Reines (France) and Seville (Spain), and the Overseas Student Program at Tel Aviv University (Israel).

Since Western Michigan University’s foreign study offerings are subject to change, interested students are urged to contact the Foreign Study Services Office for current information. This office also has available information on opportunities for foreign study sponsored by other American universities and foreign institutions. The International Student Identity Card, Youth Hostel passes, Eurail Passes, and France Vacances passes may be purchased in this office.

International and Area Studies
Norman C. Greenberg, Director
2090 Friedmann Hall
(616) 383-0944

African Studies Program
Claude Phillips, Chairperson

Asian Studies Program
Alfred K. Ho, Chairperson

Comparative/Cross-Cultural Studies
Charles O. Houston, Chairperson

European Studies Program
William Ritchie, Chairperson

Latin American Studies Program
David Chaplin, Chairperson

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.

Center for Korean Studies
Andrew Nahm, Director
4063 Friedmann Hall
(616) 383-1678

The Center for Korean Studies, established in 1972, promotes study and research in Korean culture and politics. In cooperation with the Asian Studies Program, it sponsors course offerings in Korean language, history, arts and government by appropriate departments. The Center publishes books on Korea, holds conferences and seminars on Korea, and organizes summer institutions in Korean studies and study tours to Korea.
Canadian Studies Committee
Graham Hawks, Chairperson
4043 Friedmann Hall
(616) 383-0029

The Canadian Studies Committee promotes teaching and research in Canadian history, culture, and contemporary affairs. It sponsors course offerings in Canadian subjects, organizes an annual Canada Week on campus with lectures and cultural events, and organizes summer study tours to Canada.

Foreign Study Services
Mrs. Eleanor Krawutschke, Coordinator
2112 Fance Student Services Building
(616) 383-8181

The Foreign Study Office, a unit of International Education and Programs, provides an advisory and referral service for students and faculty interested in study, work, or travel in foreign countries. The following services are provided:

Foreign Study Opportunities
Students at Western Michigan University have opportunities to study abroad for a semester or a year earning credit toward graduation. The Foreign Study Office provides information about such opportunities and counsels with students on fitting these experiences into their programs.

There are two principal methods by which students at Western Michigan University may earn credit through a period of foreign study:
1. A student may enroll in one of the University's study abroad programs, e.g., the Oxford Seminar or the Mediterranean Institute. Information on these programs and their requirements for admission can be obtained by contacting the Foreign Study Office or the Office of the Dean of International Education and Programs.
2. A student may enroll directly in a foreign university or participate in foreign study programs sponsored by other American colleges and universities. Information about the opportunities and procedural requirements of this option is provided by the Foreign Study Office, which maintains up-to-date listings, brochures, and application forms for more than 1,500 study programs in other countries. Material and advice on evaluation of foreign study programs is available.

Financial Aid Information
The office provides information on sources of financial aid for undergraduate, graduate, and post-graduate study abroad.

Travel Services and Information
Students may purchase the International Student Identity Card, Youth Hostel Pass, Eurail Pass, Eurail Youthpass, and France Vacances pass at the Foreign Study Office. Information on all aspects of foreign travel is provided, including passport application procedures, visa information, consulate addresses, currencies and rates, health regulations, and customs information. The office is especially interested in providing information on low-cost opportunities—youth hosteling, bicycling and hiking, low cost accommodations, car rental possibilities, the most reasonable flights for students and faculty, etc.

Employment Abroad
A collection of source material on employment in various countries is maintained. The office is specifically concerned with short-term employment that is of interest to students, but there is also some information on teaching, internships, and other job possibilities abroad.

Foreign Study Resource Center
The office houses a growing library of books, pamphlets, newspaper and magazine clippings, maps, posters, pictures, etc., on travel and study abroad. Students, faculty, and staff are invited to use the library materials in the office at any time during regular working hours.

Special Programs
The Foreign Study Office sponsors the annual International Study/Travel Night and workshops and smaller presentations on study, work, and travel abroad throughout the year. Students and faculty wishing to participate are urged to contact the office.

Liaison
The Foreign Study Office maintains contact with study abroad advisors and administrators at other universities, embassies and consulates, travel bureaus, and consultants on international education, and maintains affiliation with appropriate national and state organizations such as the American Association of Collegiate Registrars and Admissions Officers, Council on International Educational Exchange, the Institute of International Education, the SECUSSA section of the National Association for Foreign Study Affairs, and other organizations and agencies specializing in program and credit evaluation.
The undergraduate curriculum in librarianship offers preparation for the teacher-librarian or for the student who expects to enter the graduate program in library science either at Western Michigan University or at some other library school. Starred courses are open to prospective teachers or others who desire a wider acquaintance with books and library materials and methods.

Students may meet certification requirements for teacher-librarianship by taking the undergraduate minor in library science and (1) for secondary certification: electing a major or group major of 30-36 hours in subjects or subject fields taught in the secondary school or (2) for elementary certification: electing an additional minor or group minor of 20-24 hours and completing the elementary education minor (see elementary curriculum). The librarianship minor consists of the following courses: 230, 416, 510, 512, 530, 535, and 542, or 546. School Media Center Experience 407 is required during the last year of work and taken prior to directed teaching. A portion of the directed teaching assignment is also spent in one of the cooperating school media centers. A course in audiovisual media is highly recommended.

Preprofessional Curriculum

Bachelor of Arts or Bachelor of Science Degree Candidates in the College of Arts and Sciences who enroll in the librarianship curriculum must fulfill the requirements for the B.A. or the B.S. degree including: (1) general education; (2) a major in a subject field; and (3) a minor in librarianship.

A typical pre-professional library science program of studies follows:

Course Requirements Hrs.
1. General Education requirements
2. Humanities, Modern Language
    - English electives
    - Communication Arts and Sciences electives
    - Electives
3. Science or Psychology elective
4. Social Sciences
    - Political Science elective
    - History elective
    - Sociology elective
    - Elective
5. Librarianship
    - Fundamentals of Library Organization
    - Collection Development
    - Reference Services
    - Introduction to Cataloging and Classification
    - Reading Interests of Young Adults
    - Storytelling
    - Introduction to Information Science and Technology
6. Public Education
7. Electives and departmental requirements for subject major

Course Descriptions (LIB)

Undergraduate Courses

(*Open to students in other departments)

230 Fundamentals of Library Organization 3 hrs.
Introduction to the procedures of acquisition, processing, and circulation of library materials. Library promotion, business records, displays, annual reports, and library standards are also studied. Emphasis is on basic library organization and access.

407 School Media Center Experience 3 hrs. Fall, Winter, Spring
An introduction to library activities and services through assignment to a selected school media center. A minimum of 90 hours of observation and participation under supervision of the cooperating school media specialist and a school faculty member is required. Must be elected before Directed Teaching Credit/No Credit Approved application required.

416 Instructional Materials, K-12* 3 hrs.
Identification and characteristics of media which support classroom instruction in the elementary and secondary schools. Introduction to broad range of print and non-print materials and the process of evaluation in the light of instructional needs.

Upper Division and Graduate Courses

(*Open to students in other departments)

502 Old and Rare Book Collecting 3 hrs.
Study of the history of bookmaking, the descriptive anatomy of manuscripts and books, bindings, paper, print, illustrations, acquisitions and sales, and care and preservation. The book as an artifact, identification of first editions, rare book reference sources, and techniques for ascertaining the monetary value of books are considered.
510 Collection Development
3 hrs.
Introduction to the basic principles of building
collections for libraries and information centers. Includes selection and evaluation of
materials for individual collections and
examines principles and examples of library
resource sharing.

512 Reference Services*
3 hrs.
Examination of reference sources, print and
non-print, their evaluation, and the ways in
which they may be used to provide service.
Includes reference interview techniques,
search strategies, and automated searching.

530 Introduction to Cataloging and
Classification
3 hrs.
Introduction of the theories and practices of
cataloging and classification. Emphasis on
Dewey Decimal Classification, subject
cataloging from the Sears and Library of
Congress headings, descriptive cataloging of
monographs, serials, and non-print materials,
filming rules, and OCLC terminal utilization.

535 Introduction to Information Science
and Technology*
3 hrs.
A survey of information retrieval systems and
services. Students are introduced to the
development of information science, various
storage media, telecommunications, and
computer technology.

542 Reading Interests of Young Adults*
3 hrs.
Study of the fields of literature suited to the
interests of young people. Students are given
opportunity, through wide reading, to
develop principles and standards for the
selection of the book collection. Includes an
introduction to methods of stimulating
broader reading interests and conducting
group book discussions with young people.

546 Storytelling*
3 hrs.
Underlying principles of the art of storytelling
as a means of developing appreciation of
literature and stimulating an interest in
reading. Includes content and sources of
materials, techniques and practice in telling
stories before groups of children, and
planning the story hour program.

590 Studies in Librarianship
1-3 hrs.
Examines specialized topics within the field of
library and information science applicable to
both undergraduate and graduate students.
Topics considered will vary.

598 Readings in Librarianship*
1-3 hrs.
Offers a program for the advanced student
for independent study in a special area of
interest, arranged in consultation with the
adviser. Written permission of instructor
required.
The College of Arts and Sciences Western Michigan University offers undergraduate courses and programs in the humanities, the social and behavioral sciences, and the physical, biological, and mathematical sciences. The goals of the college for the undergraduate student can be seen as liberal, professional, pre-professional or vocational, depending on the student’s motivation for enrolling in a particular course or program. In addition to providing specialization in its many disciplines, the college contributes to the basic knowledge and the general education of students throughout the University.

The College of Arts and Sciences expects that its students will develop self-confidence through what they learn, as well as a proper awareness of the extent of the knowledge they do not yet possess. It provides students with the tools to explore and master knowledge in areas beyond their present grasp. Thus, it hopes to encourage the growth of persons who are competent, humane, and sensitive to the human condition, and who therefore will make effective and substantial contributions to society.

Curricula and Majors

For a list of College of Arts and Sciences curricula, see “Undergraduate Curricula and Approved Majors” in the Degrees and Curricula section of this catalog.

Admission to Majors

In order to be admitted to any major in the College of Arts and Sciences, students should apply to the department or program before they have completed 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. Students should consult the catalog for other specific requirements for their major and minor.

The Arts and Sciences Curriculum

Bachelor of Arts or Bachelor of Science Degree

The Arts and Sciences Curriculum requires:

1. A major in the College of Arts and Sciences.
2. A minor in any of the colleges of the University.
3. Eight (8) semester hours of a foreign language in high school (B.A. degree only).
4. General Education requirement, see General Information section of this catalog.
5. Two (2) hours of physical education.
6. Electives and/or additional cognates required by major or minor to make a total of 122 hours.

Liberal Arts Curriculum

Bachelor of Arts or Bachelor of Science Degree

1. Seventy (70) hours in the College of Arts and Sciences.
2. One course in Science or Mathematics
3. One course in Social Sciences
4. A minimum of fifty (50) hours of 300, 400, or 500 level courses.
5. Sixteen (16) hours of a foreign language or proficiency by exam.
6. General Education requirement thirty-five (35) hours. Consult the curriculum adviser.
7. Two (2) hours of Physical Education.
8. Electives and/or cognates required by major or minor to make a total of 122 hours.

Other Curricula

For the other curricula offered by the College of Arts and Sciences, see the respective programs on the following pages. Advice regarding these programs may be obtained from the appropriate curriculum adviser listed with each program.

The Academic Advising Office

George H. Demetrakopoulos
William S. Fox
Stephen B. Friedmann
Paul E. Holkeboer
2060 Friedmann Hall
383-6122

Students in the Arts and Sciences Curriculum and the Liberal Arts Curriculum should see a college adviser to plan their degree program. The staff of the College of Arts and Sciences Advising Office also advises students concerning General Education requirements, and helps students set up their General Education program. An appointment with an adviser should be scheduled early in a student’s academic career in order to obtain information regarding requirements. Transfer students in the Arts and Sciences and Liberal Arts Curricula, after they have received their credit evaluation forms from the Admissions Office, should have their
transfer courses evaluated for credit toward the University General Education requirements.

The staff of the Academic Advising Office will provide introductory information about the programs, majors, and minors available within the College of Arts and Sciences, and will make recommendations to other advising facilities, such as departmental advisers, etc. Students seeking exploratory information about the programs and curricula of the college are encouraged to visit this office. Students may stop by, or call 383-6122 for an appointment.

All College Courses (A-S)

100 Career Exploration and Development.
1 hr. (Credit/No Credit)

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. Homework assignments will involve written exercises and research in the Career Media Center.

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.

501 Studies in American Culture
1-3 hrs.

An interdisciplinary study of perennial issues in American life. The materials for this course are drawn from literature, the arts, the social sciences, philosophy, and religion. This course must be approved by the American Studies Program Adviser.

Foreign Studies Seminars

Foreign Studies Seminars (A-S)

Students may receive up to six hours credit in any combination of departmental seminars as described provided the seminar is planned with that combination in mind. No student will receive credit under any of the course plans 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.

504 Foreign Studies Seminar
1-6 hrs.

Seminar in the Social Sciences conducted outside the U.S. Students who complete such a seminar may receive credit in the departments of Anthropology, Economics, Geography, History, Political Science or Sociology, if the credit is approved by the chairperson of the department prior to registering for the seminar. May be repeated for credit.

505 Foreign Studies Seminar
1-6 hrs.

Seminar in the Humanities conducted outside the U.S. Students completing such a seminar may receive credit in the departments of Communication Arts and Sciences, English, Languages and Linguistics,Philosophy, Religion and the departments of the College of Fine Arts, if the credit is approved by the chairperson of the department prior to registering for the seminar. May be repeated for credit.

Interdisciplinary Programs

1. American Studies Program
2. Black Americana Studies
3. Criminal Justice Program
4. Environmental Studies Program
5. Humanistic Future Studies
6. Integrated Language Arts Minor
8. Medieval Institute Program
9. Science (Group) Major and Minor
10. Science and Mathematics Teaching Minor
11. Social Science Major and Minor
12. Women’s Studies Minor
13. World Literature Minor

American Studies Program
Lewis Carlson, Director and Adviser
216 Moore Hall (383-1843)

Students in American studies follow an interdisciplinary program bringing to bear the insights of the social sciences, philosophy, and religion. This course will be an in-depth treatment of the substantive ideology of Black America. This course will examine the myriad patterns of adaptation and adjustment made by slaves, free people of color, freedmen and their descendants, to the continuing oppressive character of American society. Slave narratives reveal much about the Africans’ interpretation of their presence in the New World. Black presence created a commonality of experience, the characteristics of which became and remain a distinctive American subculture. It aims to examine how 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.

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.

300 Black Experience
3 hrs.

This course will examine the myriad patterns of adaptation and adjustment made by slaves, free people of color, freedmen and their descendants, to the continuing oppressive character of American society. Slave narratives reveal much about the Africans’ interpretation of their presence in the New World. Black presence created a commonality of experience, the characteristics of which became and remain a distinctive American subculture. It aims to examine how 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.

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, paying critical attention to her image as reflected in her role in the American society. The central thrust of this course will be an in-depth treatment of the problems, issues and concerns surrounding images of the Black woman.

314 The Black Community
3 hrs.

An investigation of the social and structural systems within the Black community from the unique Black perspective. The course will focus on the sociological, political, economic, psychological and physical aspects of community building by a subordinated group.

Course Descriptions

(Courses described in italics are approved for General Education.)

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 setting 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.

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.

300 Black Experience
3 hrs.

This course will examine the myriad patterns of adaptation and adjustment made by slaves, free people of color, freedmen and their descendants, to the continuing oppressive character of American society. Slave narratives reveal much about the Africans’ interpretation of their presence in the New World. Black presence created a commonality of experience, the characteristics of which became and remain a distinctive American subculture. It aims to examine how 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.

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314 The Black Community
3 hrs.

An investigation of the social and structural systems within the Black community from the unique Black perspective. The course will focus on the sociological, political, economic, psychological and physical aspects of community building by a subordinated group.
320 Ecology and the Black Community 3 hrs.
Ecology and the Black Community will be a serious investigation of the relationships between human beings (local residents) and their social and physical environment. The course will focus on the determination of the individual’s status in the community by an examination of the social, political, economic and physical aspects of the environments as influenced by the social order of the American society and philosophy.

350 Blacks in Michigan 3 hrs.
A study 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 emigres, 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 1780 to the present. The student will be introduced to the variety of historical sources available for such study.

360 Black Woman-Black Man Relationships 3 hrs.
This is a study of the dynamics of the Black Woman-Black Man Relationships in a variety of contemporary settings. Special attention will be given to family settings as the Black man and Black woman conduct their lives and respond to the various stimuli and pressures of contemporary society. An attempt will be made to examine some possible ways to improve Black man/Black woman relationships in the future.
Prerequisites: BAS 310 or consent of instructor.

500 Black Humanism 3 hrs.
An examination of the creative dimension of the Black Experience. Isolated and set apart in an enemy environment, Americans of African descent have been very creative in a wide range of human undertakings. The fact has been acknowledged and accepted but this creativity has not had free range. One of the outcomes of the Black Revolution has been the emergency of “soul” as a concept. The artistry and artfulness of Black American life. The creative dimension has also included science and technology. Black humanism is a way of getting at the life-styles of Black communities and individuals and the availability of the Black Presence and Experience. What universal elements can be identified in “soul”? What are the unique qualities of “soul”? What would American life and culture be like without this elusive quality?

510 Multiethnic Education 3 hrs.
This course is designed to prepare teachers and administrators who will work in a multiethnic setting. The course is primarily aimed at helping teachers at any level who teach a social studies component, but teachers of all other subjects, e.g., physical and biological sciences and special education and school administrators will find the course useful. Students will learn how to incorporate data on the ethnic makeup and resources of the local community, developing instructional packages for use in multiethnic courses and for evaluation materials prepared.

Departmental Courses
The following courses are related to Black Americana Studies. Students may elect the additional hours necessary to satisfy requirements for a minor or a teaching minor from the following departmental courses. (Please note: Black Americana Studies is interdisciplinary in approach, and, students are encouraged to select courses from several field of study rather than concentrating in one area to satisfy departmental course requirements.)

**Anthropology**
- 220 Cultural Anthropology .............................................. 3
- 335 Cultures of Africa .................................................. 3

**Art**
- 594 History of Afro-American Art ...................................... 3

**Economics**
- 201 Principles of Economics ............................................ 3
- 202 Principles of Economics ............................................ 3
- 410 Labor Problems .................................................... 3

**English**
- 223 Black American Literature ........................................ 4

**History**
- 314 Black American History ............................................ 3
- 386 Introduction to African History and Civilization ............ 3
- 388 Modern Africa ........................................................ 3

**Political Science**
- 341 African Political Systems .......................................... 4

**Religion**
- 304 African Religions .................................................... 4
- 311 Myth and Ritual ...................................................... 4
- 500 Historical Studies in Religion (Religion of Black America) 2-4

**Sociology**
- 200 Principles of Sociology ............................................. 3
- 314 Ethnic Relations .................................................... 3

**Environmental Studies (ENVS)**
David Hargreave, Director
118 Moore Hall
Phone: (616) 383-3994

The Environmental Studies Program focuses concern on the deterioration of the earth’s environment, emphasizes the quality of life, and encourages action aimed at bringing about an ecologically sound way of life. An interdisciplinary program, it seeks to provide the students with a variety of intellectual and practical experiences that provoke thought about humanity, our relationship to society, and our relationship to the natural environment. It also seeks to develop the student’s ability to devise creative solutions to environmental problems and offers the opportunity to prepare for a professional role in some environmentally oriented field to become an environmental educator, 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.

Several options are open to the student. Each option requires that the student combine here his Environmental Studies program with another major, chosen from one of the many departments at Western Michigan University, offering programs related to environmental concerns, so as to obtain the blend of indepth expertise and broad interdisciplinary perspective necessary to deal with complex environmental issues.

Students in the ENVS program are encouraged to become deeply involved in community environmental affairs by designing an independent project, which would be carried out under the direction of a faculty member, or by participating in an internship with a local organization or government agency. Academic credit can be obtained for such experiences through ENVS 350 Contemporary Environmental Projects.

**Program Options**

**Major Options**
The Environmental Studies Program offers a single major package that the student may elect to take either as a curriculum (EVS) major or as a coordinate (EVT) major. In either case the student must fulfill the following program requirements:

1. Successful completion of a minimum of 32 semester hours of approved course work at least 15 hours of which must be taken at the 300, 400, or 500 level.
2. Successful completion of program component requirements as outlined below under the heading of program components.
3. Selection of a second, disciplinary major, the choice of which is left to the student’s discretion.

The **EVT Curriculum Major**
This option is offered for those who desire to graduate with a Bachelor of Science or Bachelor of Arts degree in Environmental Studies. Since the Environmental Studies Program itself is broadly interdisciplinary in scope and is not focused on the training of specialists for any specific environmental field, students electing this option are required to take a second major. Students chosen from any college of the University at the student’s discretion, to provide requisite depth in a particular discipline. In addition to the program requirements listed above, those enrolled as EVS curriculum majors must satisfy the following University requirements:

1. Eight hours of a foreign language or two years of a foreign language in high school for a B.A. degree only.
2. General Education requirements as described in this bulletin.
3. At least two hours of physical education.
4. Electives and/or additional course work required by the disciplinary major to total no less than 122 semester hours.

The **EVT Coordinate Major**
This option is offered for those who desire to graduate with a Bachelor’s degree in a particular discipline in a curriculum other than Environmental Studies but also want a complementary major in Environmental Studies to broaden their perspective and possibly enhance career opportunities.

**Minor Options**
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**
Those electing a non-teaching minor in Environmental Studies must fulfill the following program requirements:

1. Successful completion of a minimum of 21 semester hours of approved course work within the program.
2. Successful completion of program component requirements as outlined below under the heading of program components.
The Teaching Minor
This option is available only to those enrolled in either the elementary or secondary education curriculum. Those electing a teaching minor in Environmental Studies must fulfill the following program requirements:
1. Successful completion of a minimum of 24 semester hours of approved course work within the program.
2. Successful completion of the same program component requirements as set forth for the non-teaching minor, plus an approved course in environmental/outdoor education.

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.

Program Components
The Environmental Studies Program is divided into five components, each of which addresses itself to a major facet of a comprehensive environmental education.

1. Program Introduction Component (required of all majors and minors)
   A. ENVS 110—Fundamentals of Environmental Studies

2. The Concepts Component (All majors must take a minimum of two courses from the approved list of electives below. These courses are to be chosen in consultation with and must have the written approval of the Program Adviser. Non-Teaching minors are not required to take any courses from this component. Teaching minors are required to take one approved course dealing with outdoor/environmental education)

   A. Introduction to Biological Systems
      1. BIOL 105—Environmental Biology
      2. Introduction to Physical Systems—I
         1. GEOL 100—Earth Studies
         2. GECG 105—Our Physical Environment
   C. Introduction to Physical Systems—II
      1. PHYS 102—Physics and the Environment
   D. Introduction to Human Systems
      1. GSSC 123—Human Society
      2. ANTH 220—Cultural Anthropology
      3. ANTH 340—Culture, Energy, Environment
      4. GECG 205—Our Human World
   E. Systems in Evolutionary Perspective
      1. ANTH 100—Man in Evolutionary Perspective
      2. REL 333—Religion and Ecological Awareness
      3. GEOG 350—Principles of Conservation and Environmental Management (not to be taken by those opting for a geography cognate major)

3. The Values/Ethics Component (All majors and minors must choose one course from each topic area)
   A. The Origins, Development and Nature of Western Value Systems
      1. ENGL 311C—Perspectives Through Literature
      2. REL 333—Religion and Ecological Awareness
   B. Values and the Future
      1. ENVS 300—Introduction to Appropriate Technology
      2. GSSC 350—From the 20th to the 21st Century: Problems and Programs of Transition
      3. GSCI 436—The Search for an Ecological Conscience
      4. The Implementation Skills Component (All majors must take two approved courses from the Implementation Skills Component of the program to satisfy the requirement for the major/minor.
      5. The Integrating Capstone Experience

Advising
Because of the broad interdisciplinary nature of the Environmental Studies Program and the varied academic backgrounds and goals of the students served by the program, it is imperative that students work closely with the Program Adviser. Those who intend to pursue any of the Environmental Studies Program options should see the Program Adviser before embarking on any of the program components beyond the Introductory Component.

Course Descriptions
(Courses described in italics are approved for general education)

110 Fundamentals of Environmental Studies
3 hrs.
Fundamentals of Environmental Studies is an interdisciplinary introduction to the study of environmental concerns. It is particularly designed for students majoring or minoring in Environmental Studies, but is equally valuable for anyone desiring a conceptual foundation on which to build an independent study of these concerns. Attention is focused on the structure and behavior of systems—biological, physical and social—which both create and are influenced by environmental problems. Particular attention is given to the role of energy in the definition and maintenance of these systems.

111 Fundamentals of Environmental Studies—Discussion
1 hr.
A discussion section to accompany ENVS 110. Weekly meetings will explore the political, social, economic and ecological ramifications of problems discussed in lectures.

300 Introduction to Appropriate Technology
3 hrs.
An academic inquiry into the environmental, ethical, technological and socio-political aspects of "appropriate technology." Such technologies are designed to fit local environments and to be consistent with the resources and values of respective cultures. Lectures will review the development of appropriate technology, its importance in today's world, and its role in creating a livable future.

310 Homesteading Theory
4 hrs. Winter
An introduction to modern homesteading as a self-sufficient way of life, its importance in our time, and how it can be done. The new homesteading movement is viewed as a complex cultural and agricultural phenomenon which reflects the pastoral ideal in American life, a concern for working out more ecological agricultures, and the search for a rural way of life and appropriate technologies which are less demanding of energy and material resources.

350 Homesteading Practice
4-16 hrs. Spring, Summer and/or Fall
A field experience course in arts and skills of self-sufficient living which requires fulltime residence on a homesteading farm during Spring, Summer and/or Fall. Learning activities, consisting of regular farm and household chores and whatever farm work is in season, are supervised by qualified instructors who suggest readings to complement farm activities, arrange for regular class discussions, and evaluate student performance. Students are provided with room and board in exchange for their work and a modest fee. Prerequisite: 310 Homesteading Theory, or approved equivalent.

398 Readings in Environmental Problems
1-4 hrs.
This course is designed as an interdisciplinary reading course for students majoring or minoring in Environmental Studies. It will permit students to study in depth some aspects of their environmental specialization under the direction of a faculty member. They may work alone or with a small group. Prerequisite: Approval of the instructor and the Director of the Environmental Studies Program.

400 Senior Seminar in Environmental Studies
3 hrs.
A team-taught, integrated seminar in which the subject material will be built around the following concepts of ecology, evolution and culture. Students will develop a project which demonstrates ecological relationships.
Humanistic Future Studies Minor (FUST)

Rudolf J. Siebert, Director and Adviser
3064 Friedmann Hall
383-3984

The humanistic future studies minor program is designed to facilitate a systematic and critical discourse on and examination of different predictions and scenarios of alternative futures, especially in regard to the ways in which a more humane social order might evolve. The methodology of humanistic future studies can be applied as an aid to planners and policy makers in education, the environment, government at all levels, business, industry, the churches, the military, etc. The minor in humanistic future studies is ideally suited for students majoring in political science, sociology, anthropology, social work, business, industrial engineering, geography, mapping, environmental studies, environmental engineering, religion, home economics, philosophy, or education. The minor is also an excellent preparation for graduate work in any of these areas.

The minor in future studies is designed to supply students with: (1) a well-rounded introduction to future studies as an area of academic inquiry with an emphasis on political science, sociology, anthropology, social work, business, industrial engineering, geography, mapping, environmental studies, environmental engineering, religion, home economics, philosophy, or education. The minor is also an excellent preparation for graduate work in any of these areas.

Requirements

Students who desire an undergraduate minor in humanistic future studies must elect 21 hours to include:

- FUST 200—Introduction to Future Studies, 4 hrs.
- FUST 599—Senior Seminar in Future Studies, 4 hrs.

At least one course from each of the following areas of futurology:

1. Forecasting
2. Planning
3. Philosophy of the future including politics and pedagogics of the future
4. Future-oriented issues

Electives

I. Forecasting
   SOC 171 Social Impacts of Science and Technology, 3 hrs.
   ANTH 540 Social Impact Assessment, 3 hrs.
   MGMT 564 Simulation Models, 3 hrs.

II. Planning
   ENVS 210 Introduction to Appropriate Technology, 3 hrs.
   CS 501 Computer Concepts for Public Administration, 3 hrs.
   GEOG 558 Studies in Urban and Regional Planning, 3 hrs.
   MGMT 561 Introduction to Management Science, 3 hrs.

III. Philosophy of the Future
   PHIL 314 Philosophy and Public Affairs, 4 hrs.
   REL 323 Religion and Revolution, 4 hrs.
   REL 332 Religion and Social Ethics, 4 hrs.
   REL 333 Religion and Ecological Awareness, 4 hrs.
   GSCI 434 Biomedical Ethics and Society, 4 hrs.
   REL 510 Apocalypse and Utopia, 4 hrs.
   REL 530 Future of Religion, 4 hrs.

IV. Future-Oriented Issues
   PSCI 250 International Relations, 4 hrs.
   GSSC 256 Beyond Survival, 4 hrs.
   PSCI 306 Environmental Politics, 3 hrs.
   GSCI 316 Mass Media: Messages Manipulation, 4 hrs.
   MS 339 Solar Energy Systems, 3 hrs.
   PSY 374 Towards Experimental Living, 3 hrs.
   GHUM 402 Utopian Visions and Futurism, 4 hrs.
   GHUM 409 Women: Past, Present, and Future, 4 hrs.
   REL 530 Constructive Studies in Religion, 4 hrs.
   Religion, Marriage and Family
   Religion, Death and Dying
   HIST 579 War in the Modern World, 3 hrs.
   ECON 588 Economic Development, 3 hrs.

Course Descriptions

200 Introduction to Future Studies 4 hrs.

The purpose of this course is the exploration of the new field of future studies. The general subject matter of future studies is modern man’s and woman’s struggle for a truly humane future. Future studies is concerned with developmental trends in the spheres of nature, human organism, subjectivity, private right, personal morality, marriage and family, society as production and exchange process, state, history as international relations, art, religion, philosophy, science, and technology. The course will be concerned with the prediction of those trends and the planning of the most desirable futures in these fundamental dimensions of human experience and action.

498 Independent Future Studies 1-4 hrs.

The purpose of this course is to help a student who has completed FUST 200 pursue some aspect of future studies in depth, be it in the dimension of nature, human organism, personality, private right, personal morality, family, science, society, state, history, art, religion, philosophy or technology. The course requires the written consent of a faculty sponsor and the adviser. It is repeatable for credit up to 4 hours.

599 Senior Seminar in Future Studies 4 hrs.

The aim of this team-taught seminar is to help students to integrate the futurological knowledge about the dimensions of nature, human organism, personality, private right, personal morality, family, science, society, state, history, art, religion, philosophy, science, and technology they have acquired so far in the different courses they have taken from within FUST minor program. The seminar will concentrate on forecasting in the different dimensions of human experience, action, and interaction as the necessary foundation for planning, and on planning as the necessary basis for the philosophy of the future, including politics and pedagogics of the future, and on the philosophy of the future as the necessary presupposition for prognosis and planning. The different members of the teaching team will focus on the synthesis of the future-oriented material which the students have learned so far in their minor program.

Integrated Language Arts Minor (ILAM)

Ruth Heising, Coordinator
322 Sprau Tower
(616) 383-4080

An interdisciplinary program of:

COLLEGE OF ARTS AND SCIENCES
Communication Arts and Sciences
English
Languages and Linguistics
COLLEGE OF EDUCATION
Education and Professional Development
COLLEGE OF HEALTH AND HUMAN SERVICES
Speech Pathology and Audiology

This 24-hour interdepartmental program for preservice elementary school teachers emphasizes the integrated nature of language learning. This program satisfies the guidelines of the Michigan Department of Education for competency-based programs and provides opportunities for a wide variety of individual interests and alternative learning styles. The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each course. Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

Each course is taught by a faculty member with interdisciplinary expertise from one of the departments participating in the minor. Each course focuses on a particular aspect of language development which will be presented through a balance of lectures, discussions, and workshops together with opportunities for student-initiated learning. Students can enter the program in their sophomore year. In general, ED 250—Human Development and Learning (or its equivalent), is a prerequisite for admission to the program. Program bulletin and application form are available in the Advising Office of the College of Arts and Sciences or the Education and Professional Development Department and from the Integrated Language Arts (ILAM) Coordinator, Ruth Heising, 322 Sprau Tower, 383-4080. A minor slip is required. Students must see an adviser before they have completed 8 hours in the minor.
The programs seek to provide students with a broad variety of intellectual and experiential stimuli designed to promote an understanding of areas—their history, literature and fine arts, social institutions, political processes, major intellectual currents, geography, economic problems, linguistic heritage—and the relationship of these factors to the role of these nations in the world community. Students enroll in relevant departmental courses including readings and independent courses.

The International and Area Studies Programs are designed for those undergraduate students who plan to pursue careers in education, industry, 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 fall within two categories:

1. To study leading to a coordinated major or minor.
2. To study for each registration if necessary.

For individual course descriptions see catalog listings under the participating department.

International and Area Studies

Norman C. Greenberg
Dean, International Education and Programs
Director, International and Area Studies
Dean, College of General Studies

AFRICAN STUDIES PROGRAM
Claude Phillips, Chair

ASIAN STUDIES PROGRAM
Alfred Ho, Chair

COMPARATIVE/CROSS-CULTURAL STUDIES PROGRAM
Charles O. Houston, Chair

EUROPEAN STUDIES PROGRAM
William Ritchie, Chair

LATIN AMERICAN STUDIES PROGRAM
David Chaplin, Chair

The International and Area Studies Programs were established by the Trustees and Administration of Western Michigan University as interdisciplinary programs devoted to the study of cultures located geographically outside the continental United States. Coordination of the International and Area Studies Programs is provided by the Office of the Dean of International Education and Programs.

There are numerous programs that should be of great interest to undergraduate students: a detailed description of each will be found on the following pages of this catalog. In broad outline, these programs of study fall within two categories:

1. Undergraduate co-ordinate majors of 30 semester hours, and
2. Undergraduate minors of 20-24 semester hours, including
   minors approved for the elementary and secondary education curricula. Students who enroll in any of these co-ordinate majors must also enroll in a standard major in any college in the University.

The International and Area Studies Programs are a joint endeavor by faculty and students designed to provide a curricular framework within which to examine, analyze, and—hopefully—understand the peoples and institutions of the world in cross-disciplinary perspective.

Asian Studies Program

Coordinate Major
Claude Phillips (Political Science), Adviser
3007 Friedman Hall
383-0482

The Asian Studies Program is an interdisciplinary program of concentrated study leading to a coordinated major or ordinary regular minor in Asian 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 Asian cultures and their achievements; to stimulate acquisition of languages spoken in Asia and knowledge about contemporary African affairs; and to provide a forum for the exchange, analysis, and evaluation of information and ideas concerning 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 30 semester hours of courses for the major and 20 semester hours for the minor (24 hours for students enrolled in any curriculum in the College of Education). In the planning of the major and minor, students must consult with the adviser in African studies.

African Studies Program

Coordinate Major
Claude Phillips (Political Science), Adviser
3007 Friedman Hall
383-1707

This is a program for the study of Africa, which is a large area in terms of geography and population and is an important area because of the position it has in world affairs. This area stretches from Micronesia in the East to Afghanistan in the West and from Mongolia and China in the North to India in the South. It has about fifty-seven percent of the world population. It is going through adjustments of urbanization, industrialization, modernization, and technological change. It is an area of different political, social and economic systems and institutions. This program is to help the students to gain an understanding of Africa and prepare them for careers in that part of the world.

Coordinate Major
Undergraduates interested in African affairs and culture or who hope to pursue an African-related career may choose an interdisciplinary coordinate major in African studies. This is a double major program. In addition, to fulfill the requirements of a disciplinary major in any college of the University, the student is required to take 30 credit hours of approved African studies courses. An African language is not required for this major; however, it is strongly recommended for any student planning an African-related career or African studies at the graduate level.

Minor
Undergraduates in any college of the University may choose an interdisciplinary minor in African studies. Twenty semester hours (24 for students enrolled in education curricula) of approved African studies courses are required. The minor in African studies has been approved by the State Board of Education for teacher certification at both the elementary and secondary education levels.

Comparative/Cross-Cultural Studies Program

Charles O. Houston (General Studies), Adviser
233 Moore Hall
383-0429

This program, contains a cross-disciplinary perspective, which essentially means that the curriculum is not limited to one area or region of study, but is directed in a patterned program containing courses drawn from several departments of the various colleges of the University and from as many areas and regions of the world as will reflect the

INTERDISCIPLINARY PROGRAMS

55
complexity and diversity of the cross-
disciplinary perspective.

This program will be particularly useful to those students who do not wish to concentrate upon any one particular region or area as a major or a minor concentration of study, whether in terms of personal interest, major-
minor formal programs, or possible graduate work.

The program provides a wide range of courses that will offer the student the advantages which a comparative study of the peoples and cultures, their histories and institutions can provide. Thus, it will be possible to gain familiarity, for example, with the regions of Latin America on the one hand, and of Africa, on the other, or of Southeast Asia and South Asia, or Europe and Africa, or Europe and Asia, in a variety of alternative programs.

In addition this program is ideally organized for the two students who wish to take advantage of the Student-
Planned Curriculum.
A student who enrolls for the coordinate major in this program must also have a disciplinary major in any college of the University. The program requires 30 semester hours of courses (for the major) and 20 semester hours for a minor (24 hours for students enrolled in any curriculum in the College of Education).

It is essential that in planning a major or minor, consultation with the adviser takes place.

European Studies Program
Coordinate Major
William Ritchie (Political Science), Adviser
3025 Friedman Hall
383-8002

The courses for this program concentrate on the European area. They are drawn from sixteen departments of the University which offer subject matter focused on the European area. The program is designed to appeal to those students who have an interest in Europe and wish to transcend the disciplinary boundaries of any one field of study. The European Major must be undertaken in conjunction with a disciplinary major and is designed to broaden the student out of the European area in general. Students are encouraged to concentrate on one of the major cultural-linguistic regions of Europe. For those students who have a broad interest in European culture and its institutions, and who do not wish to specialize in one of the major area complexes, there is the general option.

1. A minimum of 30 hours will be required for the completion of the coordinate major in European studies. The European studies coordinate major will be offered in the following options concerning these specific areas:
   - British Studies—Professor Dale Pattison, (Department of History)
   - Germanic Studies—Professor Peter Kravutcheshe (Department of Languages and Linguistics)
   - Romance Studies—Professor Joseph G. Risch (Department of Languages and Linguistics)
   - Slavic Studies—Professor William Ritchie (Department of Political Science)

2. The students are encouraged to consult the area advisers in the field of their interest. Their tentative program worked out by the area advisers should be brought to the European Studies Program adviser for audit and final signature.

3. Each regional option will require 8 hours of an appropriate language. Language study can be undertaken in the Department of Languages and Linguistics. Students with the knowledge of an appropriate language may have their requirement waived.

4. Candidates for coordinate major degree must select three courses appropriate to their area of interest from an approved list with the assistance of their adviser.

5. The remaining hours are elective with the requirement that they have relevance to the European area and are to be selected in consultation with the student’s adviser. Students who elect the general option of the coordinate major must select an advisory committee which will consist of the European studies adviser, or an adviser pertinent to the student’s general option, and a third member to be jointly agreed upon by the student and the European studies adviser.

Minor
Twenty semester hours (24 hour Slavic minor for students enrolled in education curricula) 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 adviser. 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 adviser.

Latin American Studies Program
Coordinate Major
David Chaplin (Sociology), Adviser
2408 Sangren
383-1735

Students enrolled in this coordinate major must select at least 30 hours from core and cognate courses available from the program adviser. Students must demonstrate intermediate-level proficiency in Spanish or Portuguese. Students wishing to enroll in the Latin American studies coordinate major are required to make this intention known to the Latin American studies adviser 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 30 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, seminar classes, and is above all, tailored to each individual's interest.

Minor
Twenty semester hours (24 for students enrolled in education curricula) taken from the list of Latin American studies core and cognate courses are required for completion of a minor concentration in Latin American studies; a minimum of 12 semester hours must be selected from the list of core courses. Students enrolled in this minor are strongly urged to acquire a proficiency in Spanish.

Students wishing to enroll in this minor concentration are required to make this desire known to the Latin American studies adviser before courses are employed to satisfy this program are taken; records of the minor are maintained and verified by the Latin American studies adviser.

Goals
The Latin American studies program offers student a combination of area specialized courses in geography, political science, economics, sociology, history, and anthropology to be linked to Spanish and Portuguese and complemented by coordinate majors in other fields. Especially appropriate choices would be international business, tourism, or economics. In addition, secondary education certification would be especially relevant. Beyond core courses focused especially on Latin America, students should also select cognate courses covering developmental problems of all third world regions. 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 participate in field seminars in Guatemala or Mexico, as well as in seminars in Latin America or Spain or Portugal. Such experiences are very valuable aid to linguistic fluency.

The Medieval Institute (MDVL)
Otto Gründler, Director and Adviser
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 the Hillside West Building.

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 theology chosen from the approved list.
Electives from the approved list with the approval of the advisor.

**Approved Courses**

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<thead>
<tr>
<th>Area</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Art</td>
<td>History of Art (to the Renaissance)</td>
<td>3</td>
</tr>
<tr>
<td>Art</td>
<td>Independent Study in Art History</td>
<td>2-3</td>
</tr>
<tr>
<td>Art</td>
<td>History of Medieval Art</td>
<td>3</td>
</tr>
<tr>
<td>Art</td>
<td>History of Renaissance Art</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td>Foreign Studies Seminar: Social Sciences</td>
<td>1-6</td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td>Foreign Studies Seminar: Humanities</td>
<td>1-6</td>
</tr>
<tr>
<td>English</td>
<td>Shakespeare</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>Development of Modern English</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>Shakespeare Seminar</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>Special Topics: Norse Literature and Mythology</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>Medieval Literature</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>Renaissance Renaissance</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>Studies in Major Writers</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>Independent Study in History</td>
<td>3</td>
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<tr>
<td>History</td>
<td>Early Medieval History</td>
<td>3</td>
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<tr>
<td>History</td>
<td>Later Medieval History</td>
<td>3</td>
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<tr>
<td>History</td>
<td>The Medieval Church</td>
<td>3</td>
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<tr>
<td>History</td>
<td>Life in the Middle Ages</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>The Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>The Reformation</td>
<td>3</td>
</tr>
<tr>
<td>French</td>
<td>Independent Study in History</td>
<td>3</td>
</tr>
<tr>
<td>Languages and Linguistics</td>
<td>Independent Study in French</td>
<td>1-3</td>
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<tr>
<td>Languages and Linguistics</td>
<td>Studies in French Literature</td>
<td>3</td>
</tr>
<tr>
<td>Languages and Linguistics</td>
<td>French</td>
<td>3</td>
</tr>
<tr>
<td>Languages and Linguistics</td>
<td>Independent Study in French</td>
<td>1-3</td>
</tr>
<tr>
<td>Languages and Linguistics</td>
<td>Independent Study in German</td>
<td>1-3</td>
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<tr>
<td>Languages and Linguistics</td>
<td>History of the German Language</td>
<td>3</td>
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<tr>
<td>Languages and Linguistics</td>
<td>Greek and Roman Mythology</td>
<td>3</td>
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<td>Languages and Linguistics</td>
<td>Independent Study in Latin</td>
<td>1-3</td>
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<td>Languages and Linguistics</td>
<td>Medieval Latin</td>
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<tr>
<td>Languages and Linguistics</td>
<td>Life and Culture of Spain</td>
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<td>Languages and Linguistics</td>
<td>Independent Study in Spanish</td>
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<td>Languages and Linguistics</td>
<td>Studies in Spanish Literature</td>
<td>3</td>
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<tr>
<td>Linguistics</td>
<td>History of Language</td>
<td>4</td>
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<tr>
<td>Linguistics</td>
<td>Readings in Linguistics</td>
<td>1-4</td>
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<tr>
<td>Linguistics</td>
<td>Basic Old English</td>
<td>1</td>
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<tr>
<td>Medieval Studies</td>
<td>Heroes and Villains of the Middle Ages</td>
<td>3</td>
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<tr>
<td>Medieval Studies</td>
<td>Interdisciplinary Studies in Medieval Culture</td>
<td>3</td>
</tr>
<tr>
<td>Music</td>
<td>Music History and Literature</td>
<td>3</td>
</tr>
<tr>
<td>Music</td>
<td>(early)</td>
<td>3</td>
</tr>
<tr>
<td>Music</td>
<td>1517 Collegium Musicism</td>
<td>1</td>
</tr>
<tr>
<td>Music</td>
<td>Western Music before 1600</td>
<td>4</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Readings in Music</td>
<td>1-4</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Independent Study</td>
<td>2-4</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Ancient and Medieval Philosophy</td>
<td>4</td>
</tr>
<tr>
<td>Political Science</td>
<td>Introduction to the History of Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>Political Science</td>
<td>598 Studies in Political Science</td>
<td>1-4</td>
</tr>
<tr>
<td>Religion</td>
<td>305 The Christian Tradition</td>
<td>4</td>
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<tr>
<td>Religion</td>
<td>306 The Jewish Tradition</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td>307 The Islamic Tradition</td>
<td>4</td>
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<tr>
<td>Religion</td>
<td>500 Historical Studies in Religion</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td>Christian T Leo to 1500</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td>Historical Studies in Religion</td>
<td>3</td>
</tr>
<tr>
<td>Religion</td>
<td>Theology of the Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>Religion</td>
<td>(Great Islamic Thinkers)</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td>Morphological and Phenomenological Studies</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td>Morphological and Phenomenological Studies</td>
<td>4</td>
</tr>
<tr>
<td>Theatre</td>
<td>Costume, I</td>
<td>3</td>
</tr>
<tr>
<td>Theatre</td>
<td>Theatre Backgrounds, I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Course Descriptions**

Course descriptions are approved by the General Education Committee. Students must refer to the General Education Program Guide for more information.

**Course Requirements**

- **145 Heroes and Villains of the Middle Ages**
  - 3 hours
  - An interdisciplinary course designed to introduce students to medieval heroes and their counterparts. Faculty from different departments will deal with the topic of the course by examining and interpreting the evidence in light of their respective fields of study such as art, history, literature, music, religion, and sociology.

**500 Interdisciplinary Studies in Medieval Culture**

- 3 hours
- An interdisciplinary course organized around selected topics in medieval and Renaissance studies. The courses may be taken in a specific period (The Twelfth Century), a religious movement (Monasticism), a political structure (Venice-A Renaissance city-state), or the social fabric (Medieval Men: Image and Reality). In each case faculty from different departments will approach the semester’s topic from the perspective and with the methodological tools of their respective disciplines, such as art, history, literature, music, philosophy, political science, and religion.

**Group Science Majors and Minors**

Departmental major and minor requirements are listed under the individual science departments (biology, chemistry, geography, geology, mathematics, physics, and psychology) and students must consult departmental advisors concerning them.

**Interdisciplinary Programs**

Group majors and minors are intended for students in the elementary and middle school and junior high school curricula. Group science minors are also available for students in special education. Group science minors are not available for students in other curricula, except in rare cases with special permission of the group science advisor. For information contact College of Arts and Sciences Advising Office.

For the group science minor in the elementary education curriculum, a minimum of one course must be completed from each “A” and “B” groups listed below and a total of at least 36 credit hours. For specific descriptions of the courses consult the departmental sections of the catalog.

Note: Courses marked with an * are recommended for Group Science minor.

**General Education Distribution Program**

- **Biology**
  - BIOL 101 Animal Biology                        | 4     |
  - BIOL 102 Plant Biology                         | 4     |
  - BIOL 107 Biological Science for El. Ed         | 4     |
  - BIOL 105 Environmental Biology                 | 3     |
  - BIOL 200 Applied Botany                        | 4     |
  - BIOL 225 Plants of Southwestern Michigan       | 3     |
  - BIOL 234 Outdoor Science                       | 4     |
  - BIOL 530 Environmental Education               | 3     |

- **Earth Science**
  - GEOG 100 World Ecological Problems and Man     | 4     |
  - GEOG 105 Our Physical Environment              | 4     |
  - GEOG 107 Planetary Science for El. Ed          | 4     |
  - (not with PHYS 104) also listed as GEOG 107 and PHYS 107
  - GEOG 130 Physical Geology                      | 4     |
  - GEOG 225 Intro. to Meteorology and Climatology | 4     |
  - GEOG 350 Principles of Conservation and Environmental Management | 3 |
  - GEOL 130 Physical Geology                      | 4     |
  - GEOL 131 Earth History and Evolution           | 4     |
  - GEOL 300 Oceanography                          | 3     |
  - GEOL 301 Minerals and Rocks                    | 3     |

- **Physical Science**
  - CHEM 102 General Chemistry 1                   | 4     |
  - GSCI 131 Physical Science in El Ed              | 4     |
  - PHYS 106 Elementary Physics                     | 4     |
  - PHYS 140 Introductory Environmental Chemistry   | 4     |
  - PHYS 104 Intro. Astronomy                       | 3     |
  - PHYS 105 General Astronomy                      | 4     |

The group science major in the Middle School and Junior High School Curriculum will include 12-13 hours of Biological Science, 11-12 hours of Earth Science and 12 hours of Physical Science. A total of 36 hours is required. The following courses are recommended.
Biological Science 12-13

BIOL 101 Animal Biology 4
BIOL 102 Plant Biology 4

One of the following:
BIOL 201 Ecology 4

BMED 210 Mammalian Anatomy 4
BIOL 220 Applied Botany 4
BIOL 231 Outdoor Science 4
BMED 250 General Genetics 3
BIOL 541 Invertebrate Zoology 3

Earth Science 11-12

One of the following:
GEOG 226 Physical Geography 3

Two of the following:
GEOL 130 Physical Geology 4
GEOL 131 Earth History & Evolution 4
GEOL 300 Oceanography 3
GEOL 301 Minerals and Rocks 3
GEOG 225 Intro. to Meteorology & Climatology 4

GEOS 350 Principles of Conservation & Environmental Management 3

Physical Science 11-12

One of the following:
PHYS 106 Elementary Physics 4
PHYS 107 General Physics I 4

PHYS 108 General Physics II 4
PHYS 109 or 105 Astronomy 3-4

PHYS 111 General Physics I 4

PHYS 226 General Physics II 4

PHYS 231 Concepts in Physical Science 4

Two of the following:
CHEM 101 General Chemistry I 4
CHEM 102 General Chemistry I 4
CHEM 103 General Chemistry I 4
CHEM 141 Intro. to Environmental Chemistry 4

CHEM 120 General Chemistry II 4

CHEM 231 Concepts in Physical Science 4

B. Required:
MATH 151 Geometry for Elementary Teachers 3
MATH 265 Probability and Statistics for Elementary Teachers 4

Level III

D. Required:
ED 401 Teaching Elementary School Science 3
MATH 552 Teaching of Elementary Mathematics 3

Level IV

Related Course Offerings.

SCI 501 Higgins Lake Field Course 1 hr.
A one-week course offered in cooperation with Eastern Michigan University, Central Michigan University and the Michigan Department of Natural Resources. Students may concentrate in one of four areas of study—Conservation, Game Bird Ornithology, Botany of Flowering Plants, and the Natural History of Michigan Mammals. The one-week course in Conservation is acceptable towards a major or minor in Geography, Biology, and Group Science. The course may be repeated provided there is no repetition in the area of specialization.

SCI 510 Studies in Space Science 3 hrs.
The properties, structure, and evolution of stars will be emphasized in this course. Topics covered will also include tools and methods of investigation, galaxies, cosmogony, and cosmological theories. Prerequisites: PHYS 106, or PHYS 110 and PHYS 111, or equivalent. PHYS 104 or equivalent.

PHYS 308 Teaching of Physical Science 3 hrs.
(See Department of Physics.)

Science and Mathematics

Teaching Minor

Adviser: Science and Mathematics Education, SAME Center

This minor is open to students enrolled in the elementary education curriculum. Advising is provided by the Science and Mathematics Education, SAME Center, B-302 Ellsworth Hall. Transfer students will need to have their previous coursework in sciences and mathematics evaluated by the Orientation and Advisement Office prior to enrolling in this minor.

Because of the interdisciplinary and sequential nature of this minor, courses must be taken in sequence going from Level I to Level IV. For example, GSCI 131 Physical Science in Elementary Education, Level I, must be completed before enrolling in GSCI 231 Concepts in Physical Science at Level II.

Level I

Select one course from the following list:
BIOL 107 Biological Science (See class schedule for section designated) 4
GEOL 107 Physical Science in Elementary Education 4
GSCI 131 Physical Science in Elementary Education 4

Level II

A. Select two courses from the following list:
Only one course from any one department may be chosen.

BIOL 220 Applied Botany 4
BIOL 234 Outdoor Science 4
GEOS 231 Concepts in Physical Science 4
CHEM 140 Environmental Chemistry 4
GSCI 231 Concepts in Physical Science 4

B. Required:
MATH 151 Geometry for Elementary Teachers 3
MATH 265 Probability and Statistics for Elementary Teachers 4

Level III

C. Required:
ED 401 Teaching Elementary School Science 3
MATH 552 Teaching of Elementary Mathematics 3

Level IV

Related Course Offering.

Additional Social Science Programs

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

For more details see a description of these programs in the Undergraduate Catalog under the heading “Division of Continuing Education.”

Social Science Major and Minor

In addition to majors and minors in the individual Social Science departments (Anthropology, Economics, History, Political Science, and Sociology), a major and a minor in social science are offered.

Requirements for the departmental majors may be found under the departmental listings. Students planning to major or minor in social science should consult with William Fox (2069 Friedmann Hall).

Major and minor programs should be arranged in conference with the adviser indicated above by the fourth semester of the student's college career.

Requirements for the major in social science

1. At least 36 credit hours in the social science departments listed above. Courses listed under “General Studies” may not be counted toward the major in social science.

2. The following basic courses must be completed. They may be applied towards either the social science major or a minor in one of the departments. Elementary education majors must satisfy this requirement by completing the specified courses in four of the five departments listed: ANTH 240 or 210, ECON 100 for Elem. Educ. Curric. 201 and 202 for Sec. Educ. and others.

HIST 210 and 211
PSY 200
SDS 200

3. A total of 9 hours credit in 300 to 500 level courses.

4. No more than 16 hours credit in any one social science department may be used to apply to the required total of 36 hours.

5. Majors in secondary and elementary education curricula may include up to two courses in geography in their major program; provided such courses are not specified for “science credit.”

6. In addition to the above, majors in the secondary education curriculum must elect Social Science 330 (Teaching of Social Studies in Secondary Schools).

Requirements for the minor in Social Science

1. The social science minor in the secondary education curriculum is open only to students who are majoring in English, geography, or one of the social science departments listed above.

2. At least 24 hours credit in the social science departments listed above. (Must include all basic courses indicated for above major.) This may not include any courses listed under “General Studies.” Students enrolled in the elementary or secondary education curriculum may include one course in geography, provided such course is not specified for “science credit.”

3. At least 6 hours credit in 300 to 500 level courses.

4. In the event the major is in one of the listed social science departments, the minor in social science must include courses in all the other listed departments.

Course Descriptions

300 Teaching of Social Studies in Secondary Schools 3 hrs. Fall
Definition of objectives; selection, organization, and use of materials; procedures and problems of effective teaching in this area. Prerequisite: Junior standing.
Women's Studies Minor
Gilda M. Greenberg, Director and Adviser
209 Moore Hall

Change in the role of women, whether in response to the reawakening of feminism or the pull of new technology, is a significant element in our current period of social change.

The women's studies minor is designed to aid students in the area of personal growth by fostering the development of their capacity to make intelligent choices in considering their own adjustments to life and its demands.

The program seeks to provide students with an expanded view of their cultural heritage, enhancing their capacity for objective and critical thinking through the examination of previously unexplored assumptions and knowledge about themselves and their past history. In so doing, the student is better prepared to deal in a creative fashion with the many problems and methodologies of the various disciplines.

In addition, the women's studies minor is designed to enhance career preparation by preparing students to deal with others in non-stereotypic fashion in their future professions.

The women's studies minor may be used in all Curricula other than Education.

Students must select courses to be used in the minor in consultation with the adviser. Exceptions, such as the inclusion of independent studies through departmental reading courses, may be made with the approval of the adviser. For specific descriptions of the courses consult the departmental sections of the catalog.

The minor consists of 20 hours.

Required:  
- GENL 222 Status of Women 4

Electives to total 16 hrs. selected from the following:  
- Check with adviser if the topic announced in the Class Schedule will be applicable toward the minor.

100 Level  
- ENGL 111 Topics: Man and Woman in Literature 3

World Literature Minor
William Combs, English Department, Adviser  
Joseph Reek, Department of Languages and Linguistics, Adviser

This is an interdepartmental program administered jointly by the English Department and the Department of Languages and Linguistics.

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 Languages and Linguistics, may elect the world literature minor. The minor should be of obvious value to students preparing to teach humanities or literature at any of several levels, but education curricula students should understand that this minor is not a teaching minor.

The world literature minor can provide useful backgrounds to students interested in foreign affairs, law, politics, journalism, mass communication, and theatre. It should also be of interest to students in business, scientific, and engineering curricula who wish to do a minor outside their main field.

The minor should interest students who, whatever their career plans or major, wish to broaden their view and mixtures of experiences of an interdepartmental program. Also, the wide range of elective possibilities would make the minor attractive to students who would like the opportunity to help shape their own programs.

Permissible Substitutions For Required Courses
With the approval of a minor adviser, students may:

- 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
- THEA 570 Development of Theatre Arts
American Studies Program

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

Anthropology

(ANTH)

Robert Jack Smith, Chair
William Cremin
Elizabeth Garland
William Garland
Norman Greenberg
Alan Jacobs
Erika Loeffler
Reinhold Loeffler
Robert Maher
Robert Sundick

Courses are designed to (1) give students a better understanding of humanity; (2) broaden familiarity with the diverse ways of human life, past and present; (3) increase understanding of the contemporary world; (4) meet the needs of students preparing to teach in the social science fields; (5) assist students to prepare for employment in a variety of applied fields in the public and private sectors; and (6) prepare students for graduate work in anthropology.

All major and minor programs must be approved by one of the department's undergraduate advisers.

A major in anthropology consists of a minimum of 30 hours of anthropology courses and must include ANTH 210, 240, and 250. Only one course at the 100 level may be counted toward the major. A minor in anthropology consists of a minimum of 20 hours of anthropology courses and must include ANTH 210, 240, and 250. Only one course at the 100 level may be counted toward the minor.

Though not required, it is recommended that at least 6 additional hours of elective work be taken in appropriately related fields, such as Black Americana studies, biology, biomedical sciences, economics, environmental studies, geography, geology, history, linguistics, philosophy, political science, religion, psychology, social work, or sociology.

A combined major in anthropology and sociology consists of a minimum of 30 hours with at least 12 hours in each department. ANTH 210, 240, and 250, and SOC 200, 300 and 382 are required.

Course Descriptions

(Courses described in italics are approved for General Education.)

100 Man in Evolutionary Perspective
3 hrs.
The nature, causes and prospects of being human as seen through an examination of the events and processes of biocultural evolution.

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.

120 Peoples of the World
3 hrs.
A general survey of the rich variety and types of traditional and contemporary societies in major culture areas of the world, such as hunting and gathering peoples, nomads, small-scale versus large-scale societies, and Non-Western kingdom states. Intended as a general introduction to the field of ethnography, with emphasis on detailed descriptions of representative societies.

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.

220 Cultural Anthropology
3 hrs. Fall, Winter
A survey of the role and relevance of "culture" in various societies throughout the world, with emphasis on the nature and function of particular cultures and their interrelationship with environment, society and the individual. (Does not count for anthropology major/minor program.)

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. (Course intended as general introduction to the field for anthropology majors and minors, combined sociology/anthropology majors, social science and Honors College students.)

250 Introduction to Physical Anthropology
4 hrs. Fall, Winter
A survey of physical anthropology, hominid and primate evolution; the living primates, human osteology, human genetics and population variation.

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.

310 Method and Interpretation in Archaeology
3 hrs.
An introduction to formal archaeological research design and an examination of the interpretive processes used in the analysis and synthesis of material culture. Topics to be discussed include fieldwork strategy, survey and excavation techniques, classification, systems theory, model building and the reconstruction of prehistoric social organizations. Prerequisite: ANTH 210 or consent of instructor.

325 Social Structure
3 hrs.
A study of the various social groups and institutions by which diverse societies and cultures throughout the world are organized, with emphasis on the nature and role of kinship, territoriality, ethnicity and other principles in ordering relations both within and between various groups and societies, with particular attention given to the various analytic concepts and theoretical approaches that are relevant to such studies. Prerequisite: ANTH 240, 220 or consent of instructor.

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.

333 Cultures of Europe 3 hrs.
A study of cultural characteristics of the various peoples of Europe, both East and West, with special emphasis placed on the comparison of world views, life styles and problems of cultural change among peoples of divergent historical and political backgrounds.

339 Native Cultures of North America 3 hrs.
A survey of the rich heritage of American Indian cultures north of Mexico. Ethnographic, ethnographic, and archaeological materials will be utilized to examine regional differences in cultural patterns.

345 Topics in Anthropology 3 hrs.
An intensive study of selected topics or emerging fields in anthropology, such as visual anthropology, museology, voluntary associates, population genetics, women and culture, socialization, and occult or utopian movements. Topics will vary and be announced each semester. (May be repeated for credit with different topics.)

346 Microcomputers in Anthropology 3 hrs.
The use and application of microcomputer programs in anthropology and social science research, with practical instruction and experience in utilizing a number of software packages specific to portable, disk-based microcomputers, such as: word processing, statistical and multi-variate analysis, data base management, and communication with other computers and network systems via a modem. Emphasis given to learning program commands for purposes of customizing software packages for specific research tasks. Students will be expected to implement one or more software packages as part of their current research activities. Prerequisite: Computer literacy or consent.

350 Human Evolution 3 hrs.
Study of both the indirect evidence and the fossil evidence concerning human evolution, including comparison with other primates living and extinct, and a consideration of the present-day human variation. Prerequisite: 250 or consent of instructor.

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, use of space, mythology 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.

490 Undergraduate Seminar in General Anthropology 2-4 hrs.
An informal seminar oriented to the integrative and synthesizing dimensions of anthropology. Through classroom discussions of readings, papers, and talks on various current concepts and topics in anthropology, students and faculty explore the relevance of the anthropological perspective for an understanding of both the general human situation and their professional development. Variable credit depending upon extent of oral and written presentations by student. Prerequisite: consent of instructor.

498 Honors Study 2 hrs.
A program of independent study (reading or research) to provide the honors student with the opportunity to explore a topic of particular interest, under the guidance of one of the faculty of the Department. May be repeated once. Permission to register must be obtained from the Department Honors Advisor.

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 announced will be announced each semester. (May be repeated for credit.) Prerequisite: Vanes with topic.

501 The Rise of Civilization 3 hrs.
The archaeological sequence in one or more of the 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. The specific area or areas to be studied will be announced each semester. (May be repeated for credit.) Prerequisite: 210 or consent of instructor.

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 companion 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: ANTH 210 or consent of instructor.

510 Field Methods in Archaeology I 3 hrs. Spring
Instruction in the 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. (May be repeated for credit.) Prerequisite: consent of instructor.

511 Field Methods in Archaeology II 3 hrs. Spring
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 cataloging 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 510. (May be repeated for credit.) Prerequisite: consent of instructor.

520 History of Ethnological Theory 3 hrs.
A systematic examination of the evolution of the significant theoretical problems and contributions in anthropology over the last two centuries. Developments are examined in relation to the prominent figures in the discipline and their times. Prerequisite: ANTH 240, 220, or consent of instructor.

522 Methodology in Ethnographic Research 3 hrs.
Emphasis is on quantitative and qualitative research materials as the basis for successful description and hypothesis testing in cultural anthropology. Considers the importance of research design and operations in generating more accurate observations on which theory building and testing rest. Includes introduction to ethnographic research techniques, e.g., participant-observation, structured and semi-structured interviews, questionnaires, sampling, technical equipment, etc. Prerequisite: ANTH 240, 220 or consent of instructor.

523 Ethnographic Field Session 3-6 hrs. Summer
Supervised field examination of human communities in respect to selected ethnographic questions. Analysis of field data and report writing. (May be repeated for credit up to a total of six hours.) Prerequisite consent of instructor.

531 Medical Anthropology 3 hrs.
An examination of anthropological research relating to cross-cultural beliefs and practices about health and illness and the relationship between folk and scientific medical care systems. Includes examination of public health programs in Western and developing societies, the effect of institutional/bureaucratic social structure on the adequacy of health care systems, and patient rights in this age of extraordinary medical technology. Prerequisites: ANTH 220, 240, or consent of instructor.

532 Culture and Personality 3 hrs.
An investigation of the interaction of culture and personality with particular attention to the role of culture as a force in the development of the individual. Prerequisite: ANTH 240, 220, or consent of instructor.

534 Peasant Societies in the Developing World 3 hrs.
A cross-cultural study of peasants as a cultural type, with emphasis on the contemporary world. Includes discussion of the history and development of peasant societies, but theoretical and substantive concentration is on the role of peasant groups in urbanized national societies. Prerequisite: ANTH 240, 220 or consent of instructor.

535 The Anthropology of Religion 3 hrs.
An examination of anthropological theories and findings relating to the origin, nature and function of religion as a universal category of culture. A scientific cross-cultural consideration of religious beliefs and practices and their relation to concepts of the nature of the universe. The role of religion in the relativistic reaction to culture contact. Prerequisite: ANTH 240, 220 or consent of instructor.
536 Cultural Evolution
3 hrs.
An inquiry into the dynamics of culture through a study of selected theories of cultural change and their application to concrete situations such as the rise of complex civilizations and the reactions of non-Western societies to contact with the West. Prerequisite: ANTH 240, 220 or consent of instructor.

537 Political Anthropology
3 hrs.
Theoretical and descriptive analysis of the political aspect of social organization, ranging from primitive to complex societies; the relationship of politics to technological development, habitat, symbolic systems and other aspects of social organization. Prerequisite: ANTH 240, 220 or consent of instructor.

538 Law and Culture
3 hrs.
A study of law through the theory and method of comparative legal dynamics. The relation of law to the whole of culture; the function of law as revealed in the comparative study of societies ranging from simple to complex. Prerequisite: ANTH 240, 220 or consent of instructor.

539 Economic Anthropology
3 hrs.
A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisites: ANTH 240, 220, ECON 201 and 202; or consent of instructor.

540 Social Impact Assessment
3 hrs.
The application of anthropological knowledge to assess and evaluate the sociocultural effects of proposed developmental policy, programs or projects as they relate to environmental impact assessment while in the planning stage, to improve project design and mitigate undesired secondary effects.

545 Topics in Ethnology
3 hrs. Fall
An intensive study of the cultures of an area of the world (e.g., Japan, Philippines, Caribbean, East Africa) or selected problems (e.g. kinship systems, millenarian movements). Topic will be announced each semester. May be repeated for credit with different topics. Prerequisite: ANTH 250.

549 Anthropology of Education
3 hrs.
A study of the Order Primates with emphasis on the similarities and differences in the physical features of hominds, the apes, the monkeys and the Lower Primates. Field studies of the behavior and social organization of monkeys and apes will be reviewed to gain insight into the early behavior and social organization of early Homo Sapiens. Prerequisite: ANTH 250 or consent of instructor.

551 Human Osteology
3 hrs.
A study of the human skeleton. Emphasis will be on morphological and metrical variation, odontology, palaeopathology, and reconstruction of the individual and the population. Prerequisite: ANTH 250 or consent of instructor.

555 Topics in Physical Anthropology
3 hrs.
A consideration of the biological relationships of specific population groups or general problems in human biology (e.g. human genetics, human growth and constitution, palaeopathology, dental anthropology). Topic will be announced each semester. May be repeated for credit with different topics. Prerequisite: ANTH 250.

598 Readings in Anthropology
1-4 hrs.
Independent study arranged in consultation with an instructor. Intended for advanced students with good academic records. One to 2 hours credit per semester, cumulative to 4 hours. Prerequisite: consent of instructor.

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536 Cultural Evolution
3 hrs.
An inquiry into the dynamics of culture through a study of selected theories of cultural change and their application to concrete situations such as the rise of complex civilizations and the reactions of non-Western societies to contact with the West. Prerequisite: ANTH 240, 220 or consent of instructor.

537 Political Anthropology
3 hrs.
Theoretical and descriptive analysis of the political aspect of social organization, ranging from primitive to complex societies; the relationship of politics to technological development, habitat, symbolic systems and other aspects of social organization. Prerequisite: ANTH 240, 220 or consent of instructor.

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3 hrs.
A study of law through the theory and method of comparative legal dynamics. The relation of law to the whole of culture; the function of law as revealed in the comparative study of societies ranging from simple to complex. Prerequisite: ANTH 240, 220 or consent of instructor.

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540 Social Impact Assessment
3 hrs.
The application of anthropological knowledge to assess and evaluate the sociocultural effects of proposed developmental policy, programs or projects as they relate to environmental impact assessment while in the planning stage, to improve project design and mitigate undesired secondary effects.

545 Topics in Ethnology
3 hrs. Fall
An intensive study of the cultures of an area of the world (e.g., Japan, Philippines, Caribbean, East Africa) or selected problems (e.g. kinship systems, millenarian movements). Topic will be announced each semester. May be repeated for credit with different topics. Prerequisite: ANTH 250.

549 Anthropology of Education
3 hrs.
A study of the Order Primates with emphasis on the similarities and differences in the physical features of hominds, the apes, the monkeys and the Lower Primates. Field studies of the behavior and social organization of monkeys and apes will be reviewed to gain insight into the early behavior and social organization of early Homo Sapiens. Prerequisite: ANTH 250 or consent of instructor.

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A study of the human skeleton. Emphasis will be on morphological and metrical variation, odontology, palaeopathology, and reconstruction of the individual and the population. Prerequisite: ANTH 250 or consent of instructor.

555 Topics in Physical Anthropology
3 hrs.
A consideration of the biological relationships of specific population groups or general problems in human biology (e.g. human genetics, human growth and constitution, palaeopathology, dental anthropology). Topic will be announced each semester. May be repeated for credit with different topics. Prerequisite: ANTH 250.

598 Readings in Anthropology
1-4 hrs.
Independent study arranged in consultation with an instructor. Intended for advanced students with good academic records. One to 2 hours credit per semester, cumulative to 4 hours. Prerequisite: consent of instructor.
3. Physics 110 (or 210) and 111 (or 211)
4. Geology 130 may be substituted for Physics 111 (or 211)

B. Preprofessional (PD, PM, etc.) curriculum

In addition to the cognates required for the ASC and LA curricula, the following cognates are needed for admission to most medical and dental schools:

1. Chemistry 361
2. Geology 130 may not be substituted for Physics 111 (or 211)

We urge you to consult with the preprofessional curriculum adviser at an early stage to determine any special requirements or variations from the above that may pertain to medical or dental schools that you are planning to apply to for admission.

Preparation for Graduate School in Biology, Botany and Zoology

In addition to the cognates required for the ASC and LA curricula, the following cognates are needed for admission to most graduate schools.

1. Geology 130 (in addition to Physics 111 and 211)
2. A course in statistics (Mathematics 260, 364, or 366)
3. A course in computer programming (Computer Science 105 or 306)

5. Only those biology courses in which a grade of “C” or better is obtained may be counted for a major.

6. Transfer students must complete a minimum of 9 hours of biology coursework at Western.

Secondary Education Curriculum

All of the requirements for biology majors listed above apply to biology majors in the SED curriculum, with the following variations:

1. BIOL 404, Problems in Teaching Biology (3 hours), is required.
2. An approved course in each of the following areas is required: plant taxonomy, animal taxonomy, and anatomy. Approval for these three courses must be obtained from a secondary education curriculum adviser in the Biology Department.
3. Cognate requirements include: CHEM 101 (or 102), 120 and MATH 118 (or 122, or 200).

4. Only those biology courses in which a grade of “C” or better is obtained may be counted for a minor.
5. Transfer students must complete a minimum of 6 hours of biology course work at Western.

Science and Mathematics Teaching Minor

The Department of Biology participates in the science and mathematics teaching minor for students in the elementary education curriculum (EED). For a full description of the program consult its listing under the “Interdisciplinary Programs” section in the College of Arts and Sciences.

Transfer Students

Questions about transfer credit or the equivalency of biology courses taken elsewhere to those at WMU should be addressed to a Biology Department adviser. Transfer students should consult with a Biology Department adviser before registering for classes.

Course Descriptions

(Courses described in italics are approved for General Education.)

101 Animal Biology
4 hrs.
An introductory course in biology in which animals are used to illustrate basic biological principles. The relationships between the structure, function, and habitat of representative animals are emphasized. Surveys of the major animal systems and the major animal phyla are included. This course may be taken concurrently with BIOL 102, Plant Biology.

102 Plant Biology
4 hrs.
An introductory course in biology in which plants are used to illustrate basic biological principles. The interaction of structure, function, and environmental factors is emphasized. A survey of monera, fungi, algae, and multicellular plants is included. This course may be taken concurrently with BIOL 101, Animal Biology.

105 Environmental Biology
3 hrs.
An ecology course that 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 major or minor in biology, botany, or zoology.)

107 Biological Science
4 hrs.
Designed to present basic biological principles, and to give the student an understanding of the operation of the world of life. (Credit does not apply toward a major or minor in biology, botany, or zoology.)

201 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 structure and function in the community and ecosystem are considered. Prerequisite: 8 hours of biology.

202 Heredity in Plants and Animals
3 hrs.
A beginning course in genetics covering patterns of heredity, DNA as the genetic material, induction of genetic changes, the genetic basis of evolution, and the basic principles of recombination, genetics, behavioral genetics and the role of the environment in genetic expression.

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.

225 Plants of Southwestern Michigan
3 hrs.
Vascular plants in this geographic region are studied in the field. Students are expected to learn to recognize 100-150 plant species on sight and know both common and scientific names. Methods of plant identification, theories of classification and evolution of vascular plants are discussed.

234 Outdoor Science
4 hrs.
A course designed to increase the student’s awareness and appreciation of the biological environment. Lectures provide introductions to basic ecological principles. Weekly field trips to a variety of environments involve identification and ecology of local aquatic and terrestrial plants and animals.

315 Cell Physiology
3 hrs.
The cell is examined as the setting of life. Its structures and organelles are related to their functions. The molecules of life are described and their roles in important processes, such as the synthesis of proteins under the control of DNA, photosynthesis, and various types of respiration. The lab encourages the development of scientific reasoning and provides opportunities for discovery, while emphasizing the accuracy of observations and the importance of data analysis.

317 Animal Physiology
4 hrs.
The field of comparative animal physiology is reviewed. Organs are compared and considered in their function of maintenance of homeostasis (healthful state). The structure
and physiology study are combined in lecture and coordinated laboratory experiences. Emphasis is placed on the experimental investigations of physiological processes, laboratory instrumentation and scientific writing. Prerequisites: organic chemistry, introductory physics, and one year of biology or consent of instructor.

319 Plant Physiology
3 hrs.
Investigations into plant functions. Basic principles are developed intensively. Advantage is taken of the discoveries and unifying principles of modern biochemistry. Prerequisites: BIOL 102 and CHEM 101 or consent of instructor.

342 Comparative Vertebrate Anatomy
4 hrs.
A study of the major structural and functional transformations that have occurred in the organ systems of vertebrates during the course of their phylogeny. Laboratory sessions provide the opportunity to carry out comprehensive dissections of the dogfish shark, the mudpuppy, and the cat. Prerequisite: 8 hours of biology, including BIOL 101.

404 Problems in the Teaching of Biology
3 hrs.
Class discussions, laboratory experiences and field work concerned with the teaching of biology in high school. Required of all students who are following a secondary education curriculum and list biology as a major or minor. This course assumes a working knowledge of plants, animals, and body chemistry, and of ecology, physiology, as well as ecology and genetics. Limited to majors and minors enrolled in a secondary education curriculum.

501 Ecological Adaptations of Organisms
3 hrs.
An investigation of the many environmental factors (light, temperature, time, magnetism, and others) that influence the life and behavior of organisms. A study will be made of the strategies used by organisms to adapt to these factors. Adaptation will be considered as adjustments in both behavior and physiology. Ecological interactions between the environment and the organisms at the molecular, cell, and organism levels will be studied. Plants, animals, and microorganisms will be used as examples. Prerequisite: consent of instructor.

502 Human Ecology
3 hrs.
A study of the various aspects of the ecology of humans, including pollution, population, land use, and nutrition. One student project and required field trips. Prerequisite: 8 hours of biology or consent of instructor.

505 Quantitative Biology
3 hrs.
The use of the computer and statistics to perform analyses of biological concern. Emphasis will be placed on ecological and physiological analyses. Lectures and regularly assigned homework exercises. Previous computer programming experience is desirable. Prerequisites: BIOL 201 and a basic statistics course, or consent of instructor.

507 The Biology of Addictive Drugs
3 hrs.
The principles of pharmacology (modes of action and effects of drugs) as related to abuse drugs, such as marijuana, alcohol, heroin, methadone, LSD, amphetamines (Speed), and cocaine. The course is designed primarily for non-science majors to give them an understanding of the objective and subjective effects of drug use. Legal and social implications of illegal drug use are discussed. No prerequisites.

509 Evolution
3 hrs.
A consideration of the theory of evolution by natural selection, including discussions of the mechanisms of evolution and predictions generated by the theory. Genetic principles needed for an understanding of evolution are covered. Prerequisites: BIOL 101, 102, and a course in genetics, or consent of instructor.

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 anatomical difficulties, and the various means employed in meeting these challenges. Prerequisite: 8 hours of biology.

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 discussion of plant composition and some of the important processes involved in plant growth, we will look into the botanical characteristics of each plant, the areas where it is grown and why, the special aspects of its composition and growth habits that account for its economic prominence, its value in human nutrition, and some of its special problems. The course is enriched with several demonstrations and lab experiences that include diverse practical applications. Prerequisites: BIOL 102, CHEM 101, or equivalent courses.

517 Advanced Cell Physiology
3 hrs.
Concerned with the details of structure and functioning of cells, both animal and plant. The current status of major problems in the field is considered. Prerequisite: BIOL 317 or consent of instructor.

520 Systematic Botany
3 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: BIOL 102 or equivalent.

521 Physiology
3 hrs.
Studies in the classification, structure, physiology, ecology and economic importance of the freshwater algae. Prerequisite: BIOL 201.

523 Heredity and Plant Breeding
3 hrs.
Principles of plant breeding quantitative genetics, population genetics, systems of mating, heterosis, and the genetics of pathogenic organisms are discussed. The basic unity of methods used in breeding self-pollinated and cross-pollinated species is considered. Prerequisite: 8 hours of biology.

525 Biological Constituents
3 hrs.
The chemical elements in plants and animals, as well as the synthesis, characterization, and degradation products of the more important compounds. Prerequisite: 12 hours of biology and one year of chemistry or consent of instructor.

526 Plant Diseases
3 hrs.
Considers plant diseases as a set of phenomena within the much larger complex of the biological sciences. Rather than being a catalog of diseases, their causes, characteristics and control, it portrays plant pathology in general terms. Prerequisite: 8 hours of biology.

528 Biology of Non-Vascular Plants
3 hrs.
A detailed comparative study of the morphology, life cycles, andycladology of the algae, fungi, and bryophytes. Laboratory study will be complemented by field investigations. An independent project may be required. Prerequisite: BIOL 102.

529 Biology of Vascular Plants
3 hrs.
A detailed comparative study of the morphology, life cycles, and phyllology of the vascular plants. Laboratory study will be complemented by field trips. An independent project may be required. Prerequisite: BIOL 102.

530 Environmental Education
3 hrs.
A review of ecological principles basic to understanding environmental problems. A survey of environmental problems through readings, discussions, and field experiences. The goal of this survey is to define problems and consider paths to solutions. Students are expected to plan and, if possible, initiate environmental education programs in their own professional areas.

533 Neuroendocrinology
3 hrs.
Neuroendocrinology is designed to acquaint the student with the interrelationships of the environment and the organisms as mediated by the neuroendocrine system. The physiology and morphology of the neuroendocrine system will be studied, as well as the chemical structure of the neurotransmitters. Regulation of cellular chemistry by the neuroendocrine products will be emphasized. Prerequisite: a course in physiology, organic chemistry or consent of instructor.

535 Plant Nutrition
3 hrs.
The elements essential for plant growth and development, their uptake, and their main functions in the plant are examined. Some important relationships of plant nutrition to human nutrition will be pointed out. Throughout the course a balance between theory and application will be maintained. The cycling of elements in nature provides insights into ecological aspects of plant nutrition. Several demonstrations and lab experiences serve to enrich the course: for example, the students makeup nutrient solutions, grow various plants in them, and observe the effects of nutrient deficiencies. Prerequisites: BIOL 102, CHEM 101, and a course in physiology.

538 Field Natural History
3 hrs.
A study of biological communities, with particular emphasis on those accessible for
use by public schools, e.g., school grounds, vacant lots, roadsides, parks, and undeveloped areas. Primarily for teachers.

539 Animal Behavior
3 hrs.
Animal behavior with emphasis on evolution and ecology. Includes an introduction to the ethological point of view. One student project. Prerequisite: 8 hours of biology or consent of instructor.

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: 12 hours of biology, including BIOL 101.

542 Entomology
3 hrs.
A general study of insects, their structure, classification, life histories, ecological relationships and economic importance. Collection and identification of local species is included. Prerequisite: 8 hours of biology, including BIOL 101.

543 Protozoology
3 hrs.
Field and laboratory studies of both free-living and parasitic protozoans, including taxonomy, morphology, life histories and ecology. Prerequisite: BIOL 101.

547 Ornithology
3 hrs.
An introductory course that explores both scientific and popular aspects of bird study. Prerequisites: BIOL 101 or equivalent.

551 Parasitology
3 hrs.
A study of parasites and host-parasite relationships illustrated by representatives of the major parasite groups. Special attention is given to the parasites of humans. Prerequisite: 12 hours of biology, including BIOL 101.

552 Plant Ecology
3 hrs.
A detailed study of the growth, distribution, survival, and environmental interactions of plants. Ecological plant analysis methods will be given strong emphasis. There will be a laboratory and field investigations. An independent project may be required. Prerequisites: BIOL 102 and 201.

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: BIOL 101 and CHEM 101 recommended.

554 Water Pollution Biology
3 hrs.
A comparison of organisms which live in clean waters compared 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: BIOL 101 and 102.

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 biont resource conservation and utilization. Selected topics of current research are included. Prerequisite: 8 hours of biology or consent of instructor.

559 Radiation Biology
3 hrs.
A study of the fundamentals of radiobiology, including radioactive decay, radiation measurements, radiation and interaction in living matter, isotopes, as well as health and safety regulations in the laboratory. Prerequisite: twelve hours of chemistry and consent of the instructor.

580 Ichthyology
3 hrs.
A general survey of fishes that considers their anatomy, physiology, ecology, behavior and phylogeny. Field and laboratory work emphasizes the methods of collection, preservation and identification of Michigan fishes. A paper may be required. Prerequisite: 8 hours of biology, including BIOL 101.

562 Vertebrate Zoology
3 hrs.
A comprehensive, phylogenetic survey of vertebrate life that emphasizes the structural, physiological, and ecological adaptations that characterize each vertebrate class. Vertebrate paleontology and the paleoecology of the time periods when major vertebrate groups arose are included. A paper is required. Prerequisite: 12 hours of biology, including BIOL 101, or consent of instructor.

598 Readings in Biology
1-3 hrs.
APPROVED APPLICATION REQUIRED.

599 Independent Studies in Biology
1-4 hrs.
APPROVED APPLICATION REQUIRED. For students who wish to carry on advanced work in special fields. Prerequisite: consent of instructor.

Biomedical Sciences (BMED)
Darwin A. Buthala, Chair
Leonard J. Beuving
Robert C. Eisenberg
Gyula Ficsor
Stephen B. Friedman
Leonard C. Grinberg
Cecil McIntire
Jack S. Wood

The Department of Biomedical Sciences is a basic science department. The biomedical sciences programs are designed to prepare students for biomedical careers by providing them with an effective foundation in the basic biomedical related sciences, including physiology, microbiology, genetics, and cell biology, coupled with extensive training in modern laboratory techniques. The specific objective of the biomedical service representative option is to produce students with a sound understanding of the biomedical sciences who are also knowledgeable in computer science, economics, psychology, marketing and interpersonal communication. Such students would be employable as technical representatives in the pharmaceutical or biomedical-industrial field.

All major and minor programs are taken under the direction of and with the approval of a Biomolecular Sciences adviser. Students who want to major in Biomedical Sciences should consult the Biomedical Sciences adviser during their first semester. Only BMED courses in which a grade of "C" or better is obtained may be counted towards a major or minor in Biomedical Sciences.

Major—General and Preprofessional Option

Biomedical Sciences Requirements
A major in Biomedical Sciences (BMED) consists of a minimum of 30 credit hours in BMED courses, including the basic core curriculum and electives. The electives must include a 3 credit BMED laboratory course, and at least 6 credit hours of electives must be at the 500 level (excluding 598 and 599). A maximum of 6 credit hours of approved WMU courses outside the biomedical sciences curriculum offerings may be applied toward the major. A student may also be eligible for equivalency and transfer credit toward the major. (See Transfer Students.)
Core Curriculum
BMED 112, 113, 200, 250, 312 and 350. BMED 112 and 113 are not required of students demonstrating satisfactory performance on proficiency exams covering the content of these courses.

Cognate Requirements
15 hours of college chemistry including organic chemistry and biochemistry, 8 hours of college mathematics (must include one of the following options: MATH 118 and 122 or 200; MATH 122 and 123; MATH 122 and 200 or 260 or 366), and 8 hours of general physics.

Major—Medical Service Representative Option

Biomedical Sciences Requirement
A major in Biomedical Sciences with a Medical Service Representative Option consists of a minimum of 30 credit hours in BMED courses, including a core curriculum and selected electives. The electives must include 2 of the following: BMED 518, 534, 569, 570 or 574.

Cognate Requirements
15 hours of college chemistry including organic chemistry and biochemistry, 8 hours of college mathematics (must include the following options: MATH 118 and 122 or 200; MATH 122 and 123; MATH 122 or 200 and 260 or 366), and 8 hours of general physics. In addition, the following specific courses must be taken: PSY 194 or 344; ECON 201 and 202; ACTY 201; MKTG 270; BUS 340; GSCI 434; and at least 6 hours from the following CAS courses: 104, 170, 270, and 331.

Minor—General Option

Biomedical Sciences Requirements
A minor in Biomedical Sciences consists of a minimum of 15 credit hours in BMED courses, including the two introductory courses in the basic BMED core (BMED 112 and 113). A maximum of 4 credit hours of approved WMU courses outside the Biomedical Sciences curricular offerings may be applied toward the minor. A student may also be eligible for equivalency and transfer credits (see Transfer Students).

Cognate requirements for a minor
8 hours of college chemistry and 4 hours of college mathematics.

Transfer Students
Proficiency examinations covering the content of BMED 112 and 113 will be available to all students transferring into the Biomedical Sciences degree major program who waive the requirements of taking these courses. The proficiency examinations will be given upon request. Successful passage of the examinations provides a waiver and not academic credit for BMED 112 and 113. The students will be provided with a signed waiver form, which will become part of his/her major or minor slip. The proficiency exam may be repeated only once. There will be no charge for the exams.

Equivalent courses taken elsewhere may be substituted for BMED 112 and/or 113. These and other substitutions will require the approval of the Biomedical Sciences adviser. A minimum of 15 hours in the major, including BMED 200, and 6 hours in the minor must be earned at Western Michigan University. Exceptions may be made at the discretion of the adviser. All other course equivalences and Biomedical Sciences credit decisions will be left to the discretion of the BMED adviser.

Suggested Sequence of Coursework for Major

Note: *Mathematics requirement: 8 hours. Must include one of the following options: MATH 118 and 122 or 200; MATH 122 and 123; MATH 122 or 200 and 260 or 366. **A course in writing is recommended. ***At least 6 hours from CAS 104, 170, 270 and 331.

General and Preprofessional Option

Freshman year:

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<th>Hrs.</th>
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<tr>
<td>15-16</td>
<td>BMED 112</td>
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<td>3-4</td>
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<td>Winter</td>
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<tr>
<td>15-16</td>
<td>BMED 113</td>
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<tr>
<td>3</td>
<td>CHEM 120</td>
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<tr>
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<tr>
<td>3-4</td>
<td>Physical Education</td>
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Sophomore year:

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<tr>
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<td>BMED 200</td>
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<td>6-8</td>
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<td>Winter</td>
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<tr>
<td>14-15</td>
<td>BMED 250</td>
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<td>Physics 110 or 210</td>
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Junior year:

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<td>BMED 350</td>
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<td>CHEM 450 or 450 &amp; 456</td>
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Senior year:

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<tr>
<td>12-17</td>
<td>BMED 598 or 599</td>
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<td></td>
<td>Complete General Education requirements</td>
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<td></td>
<td>Complete minor</td>
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<td>Completion of 122 credit hours</td>
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Medical Service Representative Option

Freshman year:

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<td>Mathematics*</td>
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<td>4</td>
<td>PSY 194 or 344</td>
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<td>Physical Education</td>
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Sophomore year:

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<td>CHEM 120</td>
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<td>Mathematics*</td>
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Junior year:

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<th>Hrs.</th>
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<tr>
<td>15</td>
<td>BMED 200</td>
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<td>CHEM 360 or 365</td>
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<td>CAS***</td>
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Senior year:

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<td>ACTY 201</td>
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Course Descriptions

(Courses described in italics are approved for General Education.)

112 Introduction to Biomedical Sciences
3 Hrs. Fall, Winter
A course designed to provide a natural science foundation for majors, minors, and general education students. Through analysis of health and medically related topics, foundation concepts in physiology, microbiology, genetics, anatomy and related disciplines are presented for students who do not have strong biology and chemistry backgrounds. This class provides a better understanding of the biomedical sciences and a conceptual framework for more advanced study.
An introduction to the major concepts of cell biology necessary to understand the working principles of modern biomedical science. Concepts which are stressed are cell structure and function, cell types, cell chemistry, cell reproduction, the transfer of information, and cell-cell interaction. This course serves two functions: (1) to provide the foundation on which further study in genetics, microbiology, and animal physiology is based, and (2) to represent the major biological principles appropriate for a terminal biological science course for the serious liberal arts student (or Honors College student). A college course in general chemistry is strongly recommended for liberal arts students as a prerequisite to this course.

200 General Biomedical Sciences Laboratory
3 hrs. Fall, Winter
A laboratory course covering the principles and transmission of those microorganisms which cause human disease. Credit does apply toward a minor in Biomedical Sciences. For Bronson Hospital nurses or by consent of instructor.

210 Mammalian Anatomy
4 hrs. Fall, Winter
A study of the gross structure of the organ systems of the mammalian body with special reference to man. The laboratory experiences utilize preserved cats. Prerequisite: BMED 112 or equivalent.

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.

232 Microbiology and Infectious Diseases
4 hrs. Winter
An introductory microbiology course emphasizing characteristics and modes of transmission of those microorganisms which cause human disease. Credit does apply toward a minor in Biomedical Sciences. For Bronson Hospital nurses or by consent of instructor.

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: BMED 112.

250 General Genetics
3 hrs. Fall, Winter
A study of the mechanisms of heredity at the level of cells, individuals, families and populations. Prerequisite: 2 courses in Biomedical Sciences or Biology.

299 Selected Topics in Biomedical Sciences
1-3 hrs.

310 Anatomical Techniques
3 hrs. Fall, Winter
This is a laboratory course designed for the student to gain an expertise in dissection techniques and experience in preparing laboratory material. Prerequisite: BMED 210.

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: BMED 200, 250, and a course in organic chemistry, or consent of instructor.

319 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. Must be in Physicians' Assistants curriculum.

330 Clinical and Pathogenic Microbiology
4 hrs. Winter
A course dealing with infectious diseases and their etiology. Emphasis will be placed on epidemiology, pathogenesis and pathology, diagnosis and treatment of various diseases. Laboratory will employ current methods utilized for cultivation and identification of most common causative microorganisms encountered in a clinical microbiology laboratory. Prerequisites: BMED 312.

350 Human Physiology for Majors
5 hrs. Fall, Winter
An introduction to the function and interrelationships of the human body organ systems with description of various physiological malfunctions. The laboratory provides experience with some types of clinical measurements, laboratory instrumentation, data organization and scientific writing. Prerequisites: BMED 250 and organic chemistry.

401 Principles and Techniques of Laboratory Diagnosis
3 hrs. Winter
This course describes the common diseases and their treatment with emphasis on the significance of laboratory findings in their diagnosis. Must be in Physicians' Assistants curriculum or permission of instructor.

430 Hematology—Serology
4 hrs. Winter
The principles of normal blood cell maturation, function and function will be discussed. Additional consideration will be given to various blood dyscrasias and immunological deficiencies. Laboratory will include an introduction to a variety of hematological and serological procedures routinely employed in hospitals and clinics, with special emphasis on the principles involved and interpretation of the test results. Prerequisites: BMED 350, CHEM 450 and 456.

495 Medical Genetics
3 hrs. Winter (alternate years)
This course will provide the information necessary to understand Medical Genetics. The principal focus will be on syndrome identification. After an introduction to the basic principles of human genetics and birth defects, genetic and congenital abnormalities associated with various parts of the body will be presented. Topics to be covered include: sensory disorders, mental retardation, genetics of cancer, skeletal abnormalities, genetic disorders of the blood system, and genetic counseling. Prerequisites: BMED 112, 240 or permission of instructor.

518 Endocrinology
3 hrs. Fall (alternate years)
A survey of the hormonal integration of organ-system function including the chemical nature of these secretions, the cellular and biochemical mechanisms of hormone actions and the endocrine feedback control mechanisms. The regulatory nature of hormones in developmental processes, in adaptation and in disease processes will be stressed. Prerequisite: BMED 250; biochemistry is recommended.

519 Endocrinology Laboratory
3 hrs. Winter (alternate years)
Laboratory experience in endocrinological concepts involved in endocrine research and clinical testing. Prerequisite: Permission of instructor.

520 Human Genetics
3 hrs. Winter (alternate years)
The principles of human heredity with particular emphasis on the clinical significance of biomechanical and chromosomal variation. Abnormalities of development and methods of risk analysis in genetic counseling are discussed. Prerequisite: BMED 250 or equivalent.

522 Cytogenetics
3 hrs. (alternate years)
The molecular, morphological and dynamic aspects of chromosomes, nuclear and allied structures in the nucleate organisms are considered. The chromosomal basis of transmission genetics involving normal, mutant and ploid genomes is discussed. Prerequisite: BMED 250 or equivalent.

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: BMED 250 and 312 or consent of instructor. Biochemistry is recommended.

525 Genetics Laboratory
3 hrs. Winter (alternate years)
Students will acquire techniques currently used in the field of genetics. Although all areas of genetic interest will be presented, emphasis will be placed on the areas of cytogenetics, biochemical genetics, genetic toxicology and genetic counseling techniques which are currently used in industrial and biomedical research areas. In addition, time will be provided for indepth experimentation. Prerequisite: BMED 250 or equivalent.

531 Biology of Aging
3 hrs.
This course is designed to provide non-majors 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: Consent of instructor.

532 Bacterial Physiology
3 hrs. Winter
Bacterial structure-function relationships are examined in a biochemical context. Current concepts of cell biochemistry are organized around the bacterial cell as a traditional model system for understanding energetics, synthesis of cell structures, transport, metabolism and regulatory mechanisms. The course is designed for advanced undergraduates and beginning graduate
students. No textbook is required; reading assignments are from the scientific literature. Prerequisite: a microbiology course and a biochemistry course.

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: BMED 312, biochemistry is recommended.

536 Immunology
3 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: BMED 312, biochemistry is recommended.

537 Histology
3 hrs. Fall
A study of the function and microscopic anatomy of mammalian tissues. Prerequisite: BMED 210 or consent of instructor.

540 Cell and Organ Culture
3 hrs. Fall
The purpose is to introduce the student to the fundamental procedures of cell and organ cultures of mammalian tissues. The application of cell and organ culture to routine clinical, research or drug screening procedures will be emphasized as well as specialized procedures employed to solve specific biomedical research problems. Prerequisite: consent of instructor.

554 Histological Techniques
2-3 hrs. Winter (alternate years)
A variety of techniques including celloidin, paraffin, decalcification and special stains will be used to prepare mammalian tissues for histological examination. Prerequisites: BMED 537 or consent of instructor.

560 Reproductive Physiology
3 hrs. Winter (alternate years)
An introduction to the physiological events associated with reproduction in higher animals. Emphasis is placed upon reproduction in mammals with constant comparison among mammals and between these and other animal groups. This course also introduces the subjects of contraception and population control, artificial insemination and birth defects. Prerequisite: BMED 350.

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: BMED core curriculum and organic chemistry.

572 Biology of Cancer
3 hrs. Fall (alternate years)
A comprehensive examination of the biological basis of cancer using animal models as examples with application to its expression in humans. This multi-disciplinary subject will utilize information from the areas of immunology, biochemistry, histology, and cytology to give a current view of this disease. Prerequisite: BMED 350, biochemistry is recommended.

574 Embryology
4 hrs. Winter (alternate years)
Embryology is the study of the development of an organism from a single fertilized cell to a complex multicellular fetus. This course will present this material from both a classical descriptive and an experimental cellular point of view. In addition to the lecture, laboratory exercises will provide experience in the recognition of the various stages of development and in the culturing and manipulations of embryos in vitro and in vivo. Prerequisite: BMED 113, 250 or equivalent.

598 Readings in Biomedical Sciences
1-3 hrs.
Approved application required.

599 Independent Studies in Biomedical Sciences
1-4 hrs.
Approved application required.

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

Chemistry (CHEM)

Robert C. Nagler, Chair
Robert H. Anderson
Donald C. Berndt
Donald J. Brown
Dean W. Cooke
J. Lindsey Foote
Robert E. Harmon
Paul E. Holkeboer
Thomas House
James A. Howell
Don C. Ittland
Adil S. Kanaan
Joseph M. Kamau
George G. Lowry
Michael E. McCarville
Ralph K. Steinhaus
Jochanan Stenesh
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 or medical colleges. The course offerings for the undergraduate student should provide 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 European 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 after three years of professional experience.

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, Vector and Multivariate Calculus
PHYS 210, Mechanics and Heat
PHYS 211, 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 510, Inorganic Chemistry
In addition two 3 or 4 hour advanced electives from 500 level chemistry or mathematics or physics as approved by the Chemistry adviser. Reading knowledge of German or Russian is required for ACS certification.
CHEMISTRY 69

CHEM 506, Chemical Laboratory Safety
CHEM 520, Instrumental Methods

Other specialized chemistry programs can be developed through the undergraduate chemistry adviser.

All chemistry majors must satisfactorily complete one of the following writing courses prior to their senior year: ENGL 105 or 305, BIS 142 or 242, or IEGM 102, or equivalent courses.

A minimum chemistry minor will contain at least 18 hours. Chemistry minors in secondary education are required to take 20 hours of chemistry 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.

Chemistry Placement Examination

The chemistry placement examination is required in order to insure that students are placed in beginning professional chemistry courses based upon the skills they possess in mathematics and chemistry. It tests mathematics at the level of one year of high school algebra (or MATH 110) and chemistry at the level of one year of high school chemistry. Passing only the mathematics portion allows a student to enroll in CHEM 100. Passing both portions meets the prerequisite for CHEM 101 and 103. A high level passing grade allows the student to enroll in CHEM 102.

Course Descriptions

(Courses described in italics are approved for General Education.)

100 Introduction to General CHEM 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 review 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. It is assumed that students have mathematical competence through MATH 110.

101 General Chemistry I 4 hrs. Fall, Winter

The theory and fundamental principles of chemistry are emphasized in this foundation course which serves primarily those who intend to enroll for two or more additional courses in chemistry. Credit for 101 is equivalent to the level of completion of CHEM 102. Prerequisite: CHEM 100 or one unit high school algebra and chemistry, with low pass on the chemistry placement examination. This course includes lecture and laboratory. Students can receive credit for only one of Chem 101, 102, 103.

102 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 more than two semesters of chemistry. Prerequisite: One unit of high school chemistry and one unit of algebra. Pass chemistry placement examination at upper level. 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.

103 General Chemistry I 4 hrs. Fall, Winter

A course primarily for students in Engineering and Technology 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. Prerequisite: One unit high school algebra and pass the chemistry placement examination. This course includes lectures and laboratory. Student can receive credit for only one of CHEM 101, 102, 103.

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 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.

120 General Chemistry II 4 hrs. Fall, Winter

The properties of a number of the more representative elements and the compounds which they form are studied. The descriptive chemistry of some common compounds and a few ions 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.

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 in CHEM 101, 102 or 103 are used, or for major or minor in chemistry.

206 Chemistry for Physicians' Assistants 5 hrs. Fall

A simplified non-theoretical approach to practical inorganic, organic and physiological chemistry. The course serves both as a background for pharmacology and for interpreting biochemical parameters in the didactic medical course. Must be in Physicians' Assistants Curriculum.
222 Quantitative Analysis
4 hrs. Fall, Winter
This course includes the theory, techniques and calculations of quantitative analysis. Instrumental techniques are used to supplement classical analytical procedures in the laboratory. Prerequisite: CHEM 120.

308 Teaching of Physical Science
3 hrs. Winter
Problems of teaching high school chemistry, physics and physical science. The main emphasis is on effective methods of instruction. Practical methods of apparatus ordering, maintenance, and construction are also considered.

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.

361 Organic Chemistry II
4 hrs. Fall, Winter
A continuation of CHEM 360. Prerequisite: CHEM 360.

365 Introduction to Organic Chemistry
4 hrs. Fall, Winter
A one semester course which surveys the chemistry of aliphatic and aromatic carbon compounds, designed for those needing a working knowledge of organic chemistry without the theoretical detail of a full year course. Credit may not be received for both 365 and 360. The course, which includes laboratory, will not serve as a prerequisite for CHEM 361. Prerequisite: CHEM 120.

390 Special Problems in Chemistry
2 hrs. Fall, Winter
This course is designed to give students that have completed basic chemistry an opportunity to receive credit for experience in chemical laboratory independent study in association with a faculty member. May be repeated once for credit. Prerequisite: 18 hours of chemistry, with approval of the Department Chairperson and a faculty director.

430 Physical Chemistry I
3 hrs. Fall, Winter
Lectures on kinetic theory of gases, thermodynamics, phase rule, equilibria, electrochemistry, quantum theory, spectroscopy, statistical mechanics, chemical kinetics and mechanics, transport properties, surface chemistry, macromolecules, crystal structure, etc. Prerequisites: PHYS 210, 211; MATH 272; CHEM 120.

431 Physical Chemistry II
3 hrs. Winter
A continuation of CHEM 430. Prerequisite: CHEM 430.

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 remodeled for a total of 2 credit hours. Prerequisites: CHEM 222 and 430 or 535. Repeatable for up to 2 credit hours.

450 Introductory Biochemistry
3 hrs. Winter
A basic course in the chemistry and metabolism of carbohydrates, lipids, proteins and nucleic acids. Not applicable to chemistry majors. Prerequisite: CHEM 365 or 361.

456 Introductory Biochemistry Laboratory
2 hrs. Winter
Basic biochemical laboratory techniques; isolation and properties of proteins, enzymes, carbohydrates, lipids and nucleic acids; studies of metabolism; determinations of clinical interest involving blood, urine, liver and brain. Prerequisite or corequisite: CHEM 450 or 550.

505 Chemical Literature
1 hr. Fall
An introduction to the use of the various types of chemical literature such as journals, abstracts, monographs, government and institutional publications and patents. Problems in the course require literature searches in analytical, inorganic, biological, organic and physical chemistry fields. Prerequisite: 24 hrs. of chemistry.

506 Chemical Laboratory Safety
1 hr. Winter
A study of toxic, corrosive, flammable, explosive, electrical, mechanical, thermal, and radiant energy hazards frequently encountered in chemical laboratory work. Emphasis is placed on precautionary methods to avoid damaging accidents and on emergency procedures to apply when accidents occur. Prerequisite: 24 hours of chemistry.

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.

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.

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, analysis, and instrumental techniques. Prerequisite or corequisite: CHEM 431, 436.

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. Prerequisite: 16 hours chemistry. MATH 123, PHYS 111 or 211.

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.

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 456. Emphasis will be on purification and properties of proteins and nucleic acids. Prerequisites: CHEM 361 and 430 or 535.

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.

556 Biochemistry II with Laboratory
4 hrs. Winter
This course consists of CHEM 554 plus laboratory. Experiments will involve more advanced techniques than CHEM 456. Emphasis will be on metabolism of carbohydrates, lipids, proteins, and nucleic acids. Prerequisite: CHEM 550 or 552.

560 Qualitative and Spectroscopic Analysis
3 hrs. Fall
A course in spectrophotometric 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.

564 Drugs and Pesticides
3 hrs. Winter
This course introduces students to the chemical nature and uses of drugs and pesticides. Abuses and potential toxicological hazards are also discussed in respect to biological-chemical properties and the behavioral-sociological implications. Prerequisite: CHEM 361 or 365.

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.

580 History of Chemistry
3 hrs. Winter
This course traces the roots of chemistry from ancient times 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.

590 Special Problems in Chemistry
2 hrs. Fall, Winter
Research work on a problem in chemistry in association with a faculty member. May be repeated once for credit. Prerequisites: CHEM 436, 24 hrs. of Chemistry, with approval of the department Chairperson and a faculty director.
Communication Arts and Sciences (CAS)

Richard J. Dieker, Chair
Roy Beck
June Cottrell
Loren Crane
James Gilchrist
Beatrice Hartman
Ruth Heing
Charles Helgesen
James Jaksa
Steven Lipkin
Peter G. Northouse
Thomas F. Pagel
Steven C. Rhodes
George Robeck
Ernest L. Stech
Peter G. Northouse
Ruth Heinig
Richard J. Dieker, Chair
Hazel Rozema
Thomas Sill
Robert L. Smith
Ernest L. Stech
Shirley A. Van Hoeven
Earl Washington
Shirley C. Woodworth
Paul Yelisma

Communication is the principal mode for establishing and maintaining human relationships. It consists of those processes by which society is made possible, by which people develop and exchange ideas, solve problems, and work cooperatively in attaining common objectives. Effective oral communication is an educational imperative for all human beings. The Department of Communication Arts and Sciences is dedicated to meeting the personal and professional communication objectives of our students. Several emphases within the major and minor are available: public relations; interpersonal communication; organizational communication; communication education; mass communication—radio, television, and film. While some students specialize in one emphasis, most take coursework in two or more of these general areas. Students planning to major in CAS or Public Relations or minor in CAS should discuss their program needs and interests with a departmental adviser at the earliest possible date. Appointments to see a departmental adviser may be made at the departmental office, 301 Sprau Tower, or by calling 333-4071.

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 mass communication—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, readers theatre performances, oral interpretation festivals, WIDRAM and FM radio stations, 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.

General Program Requirements

1. All Major/Minor programs must be approved by a departmental adviser.
2. Students must earn a grade of “C” or better in all course work applied toward a Major/Minor program.

Majors

Three Majors are available. Following the declaration of a major in Communication Arts and Sciences, majors are required to complete at least 18 semester hours toward completion of their program within the department. Petitions for exceptions to these policies should be directed to the department chairperson.

Communication Arts and Sciences Major

A communication arts and sciences major requires 30 semester hours of CAS, including CAS 170 and 27 hours of electives to be arranged in consultation with the departmental adviser. Nine of these hours must be taken at the 300-500 level.

Communication Arts and Sciences—Education Major

An education major in communication arts and sciences requires 30 semester hours of CAS, including the following courses: CAS 170, CAS 562 (for the secondary education major) or CAS 561 and CAS 365 or 366 (for the elementary education major) and electives to be arranged in consultation with a departmental adviser. Students should note that methods courses are offered only once yearly: 561 fall semesters and 562 winter semesters.

Public Relations Major

The Public Relations Major is designed to prepare students with the knowledge and skills for an entry-level position in public relations in various organizations, and to provide students with the background in communication theory and production to understand the role and function of public relations in organizations and society. Application is required for acceptance to this major. An application form is available from the Undergraduate Adviser.

A major in Public Relations consists of a minimum of 36 hours of credit in communication, including core required courses.

Core course requirements include

- 170 Interpersonal Communication
- 302 Intro. to Communication Theory
- 549 Public Relations and Organizations
- 550 Public Relations Program Development

Select one of the following:

- 358 Television and Film Scripting
- 359 Broadcast Journalism

Select one of the following:

- 104 Business and Professional Speech
- 130 Public Speaking
- 331 Persuasive Speaking

Select one of the following:

- 547 Organizational Uses of Radio & TV
- 581 Communication in Organization

Select one of the following:

- 232 Discussion
- 335 Leadership
- 570 Interviewing

Select two of the following:

- 256 Broadcast Operations
- 257 Radio Programming and Production (256 Prerequisite)
- 355 Small Format Video Production (256 Prerequisite)
- 356 Film Production (241 Prerequisite)
- 357 Television Studio Production (256 Prerequisite)
- 458 Television Performance

Select two of the following:

- 240 Broadcast Communication
- 543 Mass Communication and Social Change
- 544 Mass Communication, News and Public Affairs

Cognate course requirements include 14 hours:

- ITE 150 Graphic Arts

Select one of the following:

- ED 548 Audio Visual Media I
- ED 550 Photography Workshop

Select two of the following (required courses in English can be used as part of a journalism minor):

- ENGL 264 News Writing
- ENGL 265 News Editing (264 Prerequisite)
- ENGL 363 Advanced Reporting (264 Prerequisite)
- ENGL 364 Feature/Article Writing

Only those courses in which a grade of “C” or better is obtained may be counted for a major.

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

Minors

Two Minors are available. Following the declaration of a minor in Communication Arts and Sciences, minors are required to take at least 11 semester hours toward completion of their minor within this Department. Petitions for exceptions to these policies should be directed to the department chairperson.
Communication Arts and Sciences Minor

A communication arts and sciences minor requires 20 semester hours of CAS, including CAS 170 and CAS 130. Six of these hours must be taken at the 300-500 level.

Communication Arts and Sciences—Education Minor

An education minor requires 20 semester hours of CAS for teaching in secondary and elementary schools, including the following courses: CAS 170, and for the elementary teacher, CAS 365 or 366, and CAS 561. To teach speech in a Michigan school accredited by the North Central Association, speech teachers are required to have either 24 semester hours in speech or 20 semester hours in speech and 4 semester hours in English. (Courses in CAS are counted as courses in speech.) Students should note that the methods course, 561, is offered fall semesters only.

A Handbook for Majors and Minors in Communication, which describes career opportunities and suggested programs of study in CAS, is available free of charge from the department office, 301 Sprau Tower, or from the departmental advisers.

Integrated Language Arts Minor

The Department of Communication Arts and Sciences is one of five participating departments in the integrated language arts minor—a program designed particularly for pre-service elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. Interested persons should contact the IMAC advisor, Ruth Hening, 322 Sprau, 383-4080.

Integrated Creative Arts Minor

The Department of Communication Arts and Sciences is a participant in the integrated creative arts minor. An interdepartmental program, the minor offers elementary school teachers an opportunity to emphasize the integration of all of the arts into the core of the elementary school curriculum. Interested students should contact A. Biak, Department of Education and Professional Development.

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 arts and sciences.

Course Descriptions

(Courses described in italics are approved for General Education.) Note: Of courses CAS 104 and 130, only one may be taken for academic credit.

104 Business and Professional Speech

3 hrs.

A beginning course in speech dealing with the study and application of basic principles underlying effective oral communication. Particular attention is given to developing skill in meeting the speech situations encountered in the business and professional world.

106 Voice and Diction

3 hrs.

Individual improvement program emphasizing voice production and diction.

130 Public Speaking

3 hrs.

Study of public speech and audience psychology principles. Frequent practice to develop skill in speech composition, clarity of language, logical development and effectiveness as a speaker.

131 Parliamentary Procedure

1 hr.

Study and practice of the principles and rules which govern business meetings in voluntary organizations.

140 The Individual and the Mass Media

3 hrs.

Self discovery of the individual's relationship and response to contemporary mass media messages through an experiential approach.

170 Interpersonal Communication I

3 hrs.

An introductory course in communication theory and practice in which a student utilizes his/her powers of speech to increase his/her effectiveness in interpersonal relationships through understanding of self and others.

210 Oral Interpretation I

3 hrs.

Emphasis is placed on developing the student's appreciation of literature and his/her skill in analysis and oral reading of representative works in prose and poetry.

211 Oral Interpretation II

3 hrs.

A continuation of CAS 210. CAS 211 introduces the individual reading of dramatic scenes and the basic theory of readers theatre. Class activities include group reading of prose, poetry and drama. Prerequisite: CAS 210.

232 Discussion

3 hrs.

Study and practice in discussion and conference. Skill in participation, leadership, group thinking, and evaluation are emphasized. Recommended for students whose vocational plans involve work with groups.

236 Social Issues and Action Laboratory

1 hr.

A laboratory designed to offer experience in analyzing and participating in the communication processes related to current social issue programs. Students may accumulate a maximum of 4 hours credit.

240 Broadcast Communication

3 hrs.

A study of the impact of the contemporary broadcasting in the United States as a communication process involving a publicly owned but privately operated medium.

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

256 Broadcast Operations

3 hrs.

Introduction to the electronic theory, equipment, operating procedures and personnel involved in radio/television production, storage and distribution.

257 Radio Programming and Production

3 hrs.

Analysis of sound as a creative element in radio broadcasting and production. Studio experience in writing and producing radio formats, commercials, drama, documentary and other types of aural messages. Prerequisite: CAS 256.

302 Introduction to Communication Theory

3 hrs.

An examination of theories of perception, cognition, motivation and social psychology which relate to the process of communication.

305 Special Topics in Communication

1-3 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 offices, 301 Sprau Tower. Six hours of CAS 305 and 505 may be accumulated as credit toward a Major or Minor in CAS.

307 Intrapersonal Communication

3 hrs.

The examination of interpersonal communication models showing how imagery and symbolic processes organize patterns of thinking that permit self-direction and regulation.

311 Readers Theatre

3 hrs.

Selecting and arranging materials for readers theatre; directing and participating in performances. Prerequisite: CAS 210 or consent.

331 Persuasive Speaking

3 hrs.

The study and application of logical, emotional and ethical principles of persuasion.

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.

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.

342 The Film Industry

3 hrs.

The history and development of the American film medium from an aesthetic, social, and cultural perspective. Emphasis will be on methods of production, distribution, exhibition, and legal issues. $10 lab fee. Prerequisite: CAS 241.
355 Small Format Video Production
3 hrs.
Preprofessional 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. Prerequisite: CAS 256.

356 Film Production
3 hrs.
Production of short experimental films; scripting, planning, editing, directing and photography. Work in this course will be done within the limitations of 8 mm format. In addition to text materials, students must provide supplies averaging about $30.00 per student. Prerequisite: CAS 256.

357 TV Studio Production
3 hrs.
Explores the elements of television studio production and directing. Studio experience in equipment operation, crew roles, and producing and directing various types of television studio formats. In addition to the texts, students must provide supplies averaging about $10. Prerequisite: CAS 256.

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.

359 Broadcast Journalism
3 hrs.
Radio and TV as news and information media. Studies and applies principles of news gathering and reporting, commentary, on-the-spot news coverage, features, and structure of the newscast.

365 Oral Communication and the Early Elementary Child
4 hrs.
This course focuses on the oral communication processes, particularly as they relate to personal and social development. Particular attention is paid to the acquisition and development of oral communication by the young child; the role of oral communication in the teaching/learning environment; and the relationship between oral language and reading and writing. Deals with the child from birth through seven years. (This course is required for the integrated language arts minor.)

366 Oral Communication and the Later Elementary Child
4 hrs.
This course focuses on the oral communication processes, particularly as they relate to personal and social development. Particular attention is paid to the development of oral communication by the older child; the role of oral communication in the teaching/learning environment; and the relationship between oral language and reading and writing. Deals with the child from age seven through twelve years. (This course is required for the integrated language arts minor.)

360 The Teacher as Communicator
3 hrs.
A course in speech communication for those preparing to teach. The course examines the basic elements of speech communication and their specialized application to the various communicative roles of the teacher.

370 Interpersonal Communication II
3 hrs.
An analysis of relational communication with particular emphasis on the nature of transactional relationships. Prerequisite: CAS 170 or consent of instructor.

372 Introduction to General Semantics
3 hrs.
A study of the function of language. The course deals with the nature and meaning of symbols and differences between the communication systems of the human animal and other species. Examines the assumptions held by Western man about the structure/function of his universe as reflected in language, the problem of "reality" as distinct from "meaning." The purpose of the course is to increase the student's awareness of his/her effectiveness as a thinker or symbol-user.

373 Communication Skills and Career Planning
3 hrs.
Systematic self-assessment and job search, making use of interpersonal and intergroup communication skills. The student attempts to fit his/her personality with specific favorable job environments, researches those jobs, and builds a resume to communicate these findings. The course makes use of real interviews and outside resource people as an integral part of the experience.

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 Arts and Sciences. One to six credit may be accumulated. Prerequisite: Consent, Chairperson of Department.

441 Documentary in Film and Television
3 hrs.
A study of documentary philosophies, strategies, and accomplishments through an examination of important documentarists, movements, and films. Student lab fee: $10.

457 Advanced TV Studio Production
3 hrs.
Individual and group projects in the development and production of television programs stressing experimental techniques. Prerequisite: CAS 357 or consent of instructor.

458 Television Performance
2 hrs.
Exercises in television performance, stressing the special problems of the video performer. Prerequisite: Consent of instructor.

470 Communication, Social Issues and Change
3 hrs.
A study and practical application of communication and rhetorical methodology in contemporary social problems.

Open to Upperclass and Graduate Students

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 offices, 301 Sprau Tower. Six hours of CAS 305 and 505 may be accumulated as credit toward a major or minor in CAS.

510 Studies in Oral Interpretation: Variable Topics
3 hrs.
Projects in reading and analyses of literature to intensify the student's application of the theory and principles of oral interpretation. Topics will vary each semester and students may repeat the course. Possible topics include the following:

1. Oral Interpretation of Drama
2. Oral Interpretation of Black American Literature

530 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 CAS 530. In addition to the topics listed, additional topics are offered from time to time and will be listed in the Schedule of Classes:

1. Ethics and Freedom of Speech
2. Historical Bases of Rhetoric

540 Studies in Mass Communication: Variable Topics
3 hrs.
Analysis in depth of continuing issues in mass communication. Topics vary from semester to semester and students may take one or all topics for credit. Topics include:

1. Teaching Mass Media in the School
2. Television and Politics

541 Mass Communication Law
3 hrs.
The laws, principles and issues of mass communication regulation. Includes media ownership and licensing, programming, political broadcasting, controversy, defamation, obscenity, advertising, and the roles of the FCC, FTC, and other regulatory agencies.

542 Mass Media and the Child
3 hrs.
Assesses the impact that mass media fare from radio, television, films, comics, and other media may be having on the minds and behaviors of children.

543 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 fields of politics, advertising, and public relations are studied from the communication/change viewpoint of the practitioner and the consumer.

544 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.
545 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.

546 Mass Entertainment
3 hrs.
This course examines the role and function of mass entertainment fare 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.

547 Organizational Uses of Radio and Television
3 hrs.
Applications of radio and TV technology for the business professional, 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.

548 Broadcast Management
3 hrs.
Studies the functions and responsibilities of broadcast station management. Students examine theories of station management, audience research, budgeting and accounting principles, sales, and regulatory problems.

549 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 communication across organization boundaries.

550 Public Relations Program Development
3 hrs.
This is an advanced course in public relations emphasizing research methodology, development of training objectives, and program evaluation for corporate, governmental, educational, and social service organizations. Prerequisite: CAS 499.

551 Methods of Film Analysis
3 hrs.
An investigation of the approaches to film analysis (auteurist, intentionalist, sociological, structural, historical, ideological, psychological) by intensive "reading" and shot sequence examination and evaluation of widely divergent works. Prerequisite: CAS 241 or 356.

560 Studies in Communication Education: Variable Topics
3 hrs.
Selected studies in background, method, materials, and procedures in any one of the several speech areas. Possible topics include directing speech activities, communication behaviors of change agents, as well as others. Topics will vary from semester to semester and students may take one or all topics for credit.

561 Teaching Communication in the Elementary School
4 hrs.
Examination of the linguistic development of pre-school and elementary school children, the functions of language, study of the nature of the emotional and physical development of children as related to symbol using behaviors, study of materials and methods for affecting desired behaviors in children's thinking, communicating and enjoyment. The undergraduate student must have completed at least twelve hours of work in CAS or obtain consent of instructor. Prerequisite: ED 300 and CAS 365 or 366. Offered fall semesters only.

562 Teaching Communication in the Secondary School
4 hrs.
This is a course in becoming a professional teacher of communication. The focus of the course is self-examination, openness, and individual initiative. Some of the major topics are an examination of self in relation to teaching, the evolving and changing philosophies of speech communication education, the world of high school teaching as it now exists, innovative procedures in teaching communication, and how to get and hold a job in speech communication. The class is, for the most part, a laboratory-workshop, using a mixture of group work, guest's visitations and special projects. The student must have completed at least fifteen hours of work in CAS and, ideally, take the course immediately prior to student teaching. Prerequisite: ED 301. Offered winter semesters only.

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.

570 Studies in Communication: Variable Topics
3 hrs.
Selected areas of study within the total range of communication. Each of the courses listed below carries separate credit, and a student may take any or all of the offerings listed under CAS 570. In addition to the topics listed, additional topics are offered from time to time, and will be listed in the Schedule of Classes.
1. Group Training, Theory and Practice
2. Family Communication
3. Interviewing
4. Male/Female Communication

571 Theories of Interpersonal Communication
3 hrs.
A study of the dynamics of interpersonal communication from various theoretical perspectives. Emphasis is on the assumptions, conceptualizations and models which explain how people interact at the content and relationship levels.

572 Non-Verbal 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.

573 Personality and Communication
3 hrs.
The course examines the major personality theories as they contribute to an understanding of the role of communication in self-development. Particular emphasis is given to humanistic theories.

574 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 countries are described and analyzed.

581 Communication in Organizations
3 hrs.
A study of communication practices and problems found within organizations with emphasis given to the three aspects of organizational communication: development of theoretical perspectives; application of communication skills, and, awareness of audit and research methodologies. Students will study the relationship between communication and management/employee effectiveness.

582 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.

591 Introduction to Communication Research
3 hrs.
In this introductory course, students will acquire skills and knowledge of basic research design, data collection, data analysis, computer usage, and report writing needed for the completion of a research project.

598 Independent Study
1-4 hrs.
A program for advanced students with interest in pursuing independently a program of readings, research or projects in areas of special interest. To be arranged in consultation with a member of the staff and the Department Chairperson.
Computer Science (CS)

Kenneth Williams, Chair
Thomas Connolly
Elise de Doncker
Carl Hobson
David Johnson
Donna Kaminiski
John Kapenga
Mark Kerstetter
Dionysis Kountakis
Mohammadm Peybodi
Brian Mitchell
Dalia Motzkin
Janet Thieme
Robert Treynear
Alden Wright
Joann Wykoff

Computer Science is the study of the uses of digital computers for the effective processes of information. Degree programs are primarily concerned with the uses of computers (hardware aspects) rather than the physical construction of computers (hardware aspects). Several introductory courses in computer programming are offered as well as more complicated programs which provide a major or minor in computer science.

Students considering a major or minor in computer science should make an appointment with the departmental adviser, Dr. Marvin Druker 4064 Friedmann, as soon as possible—certainly within the second semester the student is enrolled in computer science courses. Eligibility requirements for admittance to a major or minor program are available from the computer science adviser.

Students majoring in computer science are required to complete a minor in mathematics. Students in the CSE curriculum may substitute CS 485 for CS 224 in the minor program.

General information regarding counseling and types of degrees may be found under the beginning of the Arts and Sciences section of this catalog.

Prerequisites will be strictly enforced. 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.

Enrollment will not be honored in any course if the student does not attend the first two clock hours unless prior arrangements have been made with the instructor. Under no circumstances will enrollment be honored if it is found that prerequisites are not properly met. Students whose enrollment is not honored for whatever reason are responsible for dropping classes with the Registration Office if fees are to be refunded.

Major

Computer Science Courses
CS 111 .............................................. 3
CS 112 .............................................. 3
CS 215 .............................................. 3
CS 223 .............................................. 3

Mathematics Courses
Calculus through MATH 122, 123 .......... 8
MATH 230 or 374 .................. 4
MATH 310 .................. 3
MATH 362 or 364 ...... 3-4

Electrical Engineering
EE 250 .............................................. 3

Approved electives can be CS 495, 506, 527, 542, 544, 554, MATH 440, 507, 574, PHIL 520. Electives should be approved in advance by the student's adviser.

Minor

Computer Science Courses
CS 111 .............................................. 3
CS 112 .............................................. 3
CS 223 .............................................. 3
CS 224 .............................................. 3
CS 331 .............................................. 3
Approved elective .............................................. 3

Mathematics Courses
MATH 122 or 200 .......... 4

The elective is normally CS 215 or 506. Students in the CSE curriculum may substitute CS 485 for CS 224 in the minor program.

Course Descriptions

(Courses described in italics are approved for General Education.)

105 Introduction to Computers 3 hrs.
The BASIC programming language is used to acquaint students with the computer facility and with the abilities of the computer. The course consists of one hour of lecture and two hours in recitation sections each week. Computer terminology and capabilities are explored. Student-written computer programs are executed and explained for a variety of computer applications. Illustrations will be given of programming techniques and the significance of computers in contemporary society. A student may not receive credit for both BIS 102 and CS 105. A student may not receive credit for CS 105 after the completion of any CS course except CS 306.

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: 1-1/2 years of high school algebra or MATH 111.

111 Computer Programming I 3 hrs.
A first course in the science of programming digital computers. Analysis of problems and development of correct procedures for their solution will be emphasized along with the expression of algorithmic solutions to problems in a structured computer language. Applications will involve the use of the PASCAL language to solve numerical and non-numerical problems on the computer. Prerequisite: CS 105 or BIS 102. (This prerequisite will be waved for students with a year of high school computer programming or a college level programming course.) Corequisite: MATH 122 or 200.

112 Computer Programming II 3 hrs.
This course is a continuation of Computer Programming I with more emphasis on top-down structured design and the techniques involved in the production of large modular computer programs. Problems will be done in FORTRAN. Team projects will be assigned. Prerequisites: CS 111 and (MATH 122 or 200).

215 File Processing with COBOL 3 hrs.
Structured programming techniques and an introduction to file organization. Non-numerical applications are emphasized. Programming exercises are run on DEC and IBM computers using the COBOL language. Prerequisite: CS 111.

223 Computer Organization 3 hrs.
The structure and internal organization of digital computers will be emphasized. Additional topics include addressing techniques; internal machine representation of numbers, characters, and programs; program control; arithmetic and logical operations; input-output, subroutines and linkage; system control programs in timesharing and batch environments. An introduction to assembly languages will be given. Prerequisite: CS 111.

224 Assembly Language 3 hrs.
This course is a continuation of Computer Organization. An in-depth study of the assembly language of the DEC System-10 will be made. Topics included will be subroutine linkage, monitor calls, input-output routines for disk, teletypes, etc., macros, commonly used codes (such as ASCII), number representation, stacks and lists. Prerequisite: CS 223.

306 Introductory Programming: FORTRAN 2 hrs.
An introduction to computer programming using the FORTRAN language (FORMula TRANslation). Prerequisite: 1-1/2 years of high school algebra or MATH 111.

309 Introductory Programming: ALGOL 2 hrs.
An introduction to computer programming using the ALGOL language (ALGOrithmic Language). Prerequisite: A programming course.

331 Data Structures and Algorithms 3 hrs.
Various data structures such as stacks queues, lists, trees and graphs will be modeled and implemented. Algorithms to manipulate structures will be studied and analyzed. Memory management systems as well as techniques for searching and sorting will be discussed. The idea of a data base will be introduced. Prerequisite: CS 112 and 223.

342 Software and File Systems 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 sequential and hierarchical structures. Prerequisites: CS 215 and 331.
485 Programming Languages
3 hrs.
Properties of various programming languages including scope of declarations, storage allocation, control structures and formal parameters will be studied, as well as run time representation of programs and data structures. A study of compilers and interpreters will be made. This will include loading, execution, storage allocation, symbol tables, lexical scan, parsing and object code generation. The relation of automata to formal languages and grammars will be discussed. Prerequisites: CS 331 and MATH 310.

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.

499 Senior Seminar
1 hr.
An introduction to a variety of advanced topics in Computer and Information Science will be given. Several instructors may present the material. Prerequisite: Senior status.

501 Computer Concepts for Public Administrators
3 hrs.
A fundamentals course for students in academic programs in Public Administration. An introduction to how computers work, how they are programmed and their use in information systems. Students learn to work with computer input and output on the WMU DEC System-10 and write at least one elementary computer program. Course requirements include several reports and a term project. This course may not be used towards a major or minor in Computer Science.

502 Introductory Microcomputer Concepts for Teachers
3 hrs.
This course is designed to provide teachers with a minimum foundation in computer concepts and programming. Emphasis is on the use of the BASIC language to perform a variety of educational applications on microcomputers. Computer terminology and capabilities are explored as well as the significance of computers in contemporary society. Students will write a number of programs and will receive an introduction to the use of standard system software. Flowcharting is introduced. Examples of Computer Assisted Instruction will be given. Not for Computer Science majors and minors. Prerequisite: MATH 150 or equivalent.

503 Programming the Microcomputer for Teachers
3 hrs.
A course in programming at an intermediate level for teachers: An introduction to file handling and graphics on small computers will be provided. Flowcharting, top-down design and the development of algorithms are stressed. Some programming projects in each teacher’s area of interest will be assigned. Not for Computer Science majors or minors. Prerequisite: CS 502 or equivalent experience.

504 Advanced Microcomputer Concepts for Teachers
3 hrs.
A course which will provide teachers with an understanding of how microcomputer software is developed to fit the hardware. A review of number systems and an introduction to machine and assembly languages is given. Programs will be written in these low level languages. An introduction to several data structures is provided. Concepts in graphics and file handling will be extended. Not for Computer Science majors or minors. Prerequisite: CS 503.

506 Scientific Programming
3 hrs.
Designed to give preparation in the use of numerical methods of digital computers for scientific and engineering computations. The FORTRAN language will be used. Problems such as series evaluation, multiplication and inversion of matrices, numerical integration and pointwise differentiation as well as general numerical approximation will be prepared for the computer. Prerequisites: MATH 230 or CS 311 (112 or 306). Jointly listed with Mathematics.

527 Theory of Computer Graphics
3 hrs.
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.

542 Data Base Management Systems (DBMS)
3 hrs.
This course presents the fundamental concepts and practices of data base management systems. The data base environment and administration are defined along with the roles of the data base administrator and the data dictionary. Conceptual and logical models are discussed. The three approaches—relational, hierarchical and network—are briefly described. Data access techniques such as sequential and multi-level sequential indexes, linked lists, inverted files and hashing are briefly reviewed. A few commercial systems will be surveyed. Security, reliability and integrity will be studied. Students will acquire experience with the various topics by applying them to an actual data base system. Students will also write application programs which use the data base system. Prerequisite: CS 215 or BIS 362.

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, HIPO, project management. Emphasis is placed on the solution of large software system problems using a team approach. Prerequisite: CS 331.

554 Operating Systems
3 hrs.
Fundamentals are stressed. A historical survey of the development and growth of operating systems is given to lend perspective to the ideas that follow. Basic concepts and terminology will be emphasized. Programming assignments leading to the construction of a simple operating system are required. Processes, communication and synchronization, shared resources, memory management, resource allocation, scheduling, deadlocks, file management, and protection are discussed. Applications to a real system are investigated to motivate the ideas presented in the text and lectures. Prerequisite: CS 331.

599 Independent Study in Computer Science
1-3 hrs.
Advanced students with good academic 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.
Courses are designed (1) to contribute to General Education by providing basic understanding of the economy; (2) to fulfill the requirements for the training of teachers in certain professional groups, such as social sciences, business studies, and business administration; (3) to furnish courses and explore areas of economic thought which are prerequisite to graduate study in economics; and (4) to provide areas of study as prerequisites for professional training in business administration, engineering, foreign service, journalism, law, and social work.

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 work in the department. The following are required courses for majors: Principles of Economics (201, 202), Income Analysis and Policy (306), Price Theory (303), and Statistics (502). In addition a major should choose the remainder of his courses in consultation with the undergraduate adviser, with careful attention paid to achieving a proper spread. A major in economics who intends to do graduate work in economics is advised to take MATH 122 and 123 at least, and ECON 509.

The undergraduate adviser 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 a member of the economics honors committee.

**Course Descriptions**

(Courses described in italics are approved for General Education).

**Principles and General Theory**

100 Contemporary Economic Problems 3 hrs. Fall, Winter

Focuses on several of the most important economic problems confronting our society— for example, unemployment, environmental pollution, inflation, poverty, balance of international payments, monopoly power, the standard of living in developing nations and other problems which the students may suggest. Utilizing a non-technical approach, an attempt is made to show what economics can contribute to the analysis and to possible solutions to these problems. Cannot be used to satisfy major or minor program requirements in Economics.

201 Principles of Economics 3 hrs. Fall, Winter

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.

202 Principles of Economics 3 hrs. Fall, Winter

An introduction to macroeconomics, the study of total output and employment, inflation, economic growth, and introduction to international trade and development. Prerequisite: ECON 201.

303 Price Theory 3 hrs. Fall, Winter

A basic course on economic theory, with emphasis on the theory of consumer behavior (the derivation of the demand curve), the theory of the firm and factor pricing. Prerequisites: ECON 201 and 202.

306 Income Analysis and Policy 3 hrs. Fall, Winter

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 202.

400 Managerial Economics 3 hrs. Fall, Winter

An introductory examination of the application of tools of economic analysis to management problems and decision making. The basic concepts include marginalism and cost analysis, demand pricing, capital budgeting, and selected optimality models. Prerequisites: ECON 201 and 202, MATH 116, and MGMT 200, or equivalent.


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, the labor industry, farm problems, misallocation of resources, welfare programs, unemployment and others. May be repeated for credit with a different topic. Prerequisites: ECON 201 and 202.

502 Studies in Quantitative Economics 4 hrs.

The course deals with statistical and mathematical techniques and concepts useful in economic analysis and their application to various areas in economics. Subject matter of the course will vary from semester to semester and may be chosen from such diverse topics as linear programming, game theory, input-output analysis, statistics, welfare economics, utility theory and business cycles. Prerequisites: ECON 201 and 202, MATH 122 or consent of instructor.

504 Introduction to Mathematical Economics 4 hrs. Fall

An introductory course to acquaint the student with the application of basic mathematical concepts to economic analysis, including such topics as revenue curves, cost curves, capital assets, growth models, and multipliers and accelerators. Prerequisites: ECON 201 and 202, MATH 122 or consent of instructor.

505 History of Economic Thought 4 hrs.

A survey of the origin and development of economic thought from early times to the present. After a brief consideration of early mercantilism and the evolution of the philosophy of natural liberties, special emphasis will be placed on the contributions of significant economic thinkers and the influence of various schools of economic thought on national policy and economic development. Prerequisites: ECON 201 and 202.

508 Institutional Economics 4 hrs.

An intensive examination of heterodox economic theory, conceived in terms of the basic social concepts of institutions and technology, and utilizing developments in modern social science for the resolution of persistent economic problems. Prerequisites: ECON 201 and 202.

509 Econometrics 3 hrs. Fall, Winter

An introductory course in analytical and quantitative methods in economics. Applied economic problems like linear programming and input-output analysis will be considered. Simple regression models and their uses in economics are also included. Prerequisites: ECON 201 and 202, MATH 122 or consent of instructor.

539 Economic Anthropology 3 hrs.

A thorough examination of the relationship between economic and anthropological theory, with a strong emphasis on its applicability and usefulness for explaining the nature of specific economic relationships existing in selected primitive societies. Prerequisites: ANTH 220 or 240, ECON 201 and 202; or consent of instructor.

545 The Economics of Location 3 hrs.

The application of economic analysis to the study of the location of economic activities as determined by transportation and the spatial distribution of resources and markets. Consideration is given to selected industry studies, problems in urban land usage, congestion, and the environmental effects of various economic activities. Prerequisites: ECON 201 and 202.

**Labor and Resource Economics**

313 Poverty and Economic Security 3 hrs. Fall

The course relates such risks as old age and disability to the general problem of income distribution and poverty in the United States. The welfare and social security systems are compared to proposed alternatives such as a negative income tax or guaranteed income.

318 The Economics of Medical Care 3 hrs.

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 the 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.
319 Environmental Economics
3 hrs.
The study of economic aspects of environmental problems. Benefit-cost analysis is to be introduced and applied to problems in the management of air, water and other natural resources. Environmental problems of selected industries—including transportation and electric power—economic growth, population and environmental quality are analyzed. Prerequisites: ECON 201 and 202.

410 Labor Problems
3 hrs. Winter
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.

419 The Political Economy of Food and Nutrition
3 hrs.
An examination of the economic and socio-political aspects of food, diet and nutritional patterns in the U.S. and world economies. Prerequisites: ECON 201 or 202, or consent of instructor.

512 Collective Bargaining
3 hrs. Fall
An analysis of the major problems in present day collective bargaining including the negotiation of collective agreements, the practical aspects and the economic implications. Prerequisites: ECON 201 and 202, or consent of instructor.

515 Economics of Human Resources
3 hrs.
The course will examine the development and utilization of manpower in the United States, including such topics as labor force and issues of manpower policy. Prerequisites: ECON 201 and 202.

516 Collective Bargaining in Public Employment
3 hrs. Winter
This course examines collective bargaining developments in local, state and federal governments, including bargaining units, negotiations, grievance procedures, strikes and dispute settlements. Prerequisites: ECON 201 and 202, or consent of instructor.

517 Economics of Health and Human Services
3 hrs.
Economic problems of health and human services will be considered. Alternative policy solutions are viewed from the economist's point of view. Not open to Economics graduate students.

Money, Credit, and Finance

420 Money and Credit
4 hrs. Fall, Winter
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 202.

424 Federal Government Finance
3 hrs. Fall
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.

507 Monetary Theory and Policy
3 hrs. Winter
This course concentrates on the main elements of monetary theory and policy having to do with such problems as promoting economic growth, maintaining full employment and price stability, influencing the flow of capital into the various economic sectors with different possible social goals in mind, and stabilizing international trade and financial relationships. Prerequisites: ECON 240.

525 State and Local Government Finance
3 hrs. 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.

526 The Urban Economy
3 hrs.
The course will examine the economic structure and development of the urban complex. Among the topics to be considered are: the process of suburbanization, urban sprawl and urban blight, the pricing and production of public utilities in the local economy, economies of scale in the size of urban areas, the place of planning, the impact of public services and the tax structure on the location of economic activity, intergovernmental economic relationships. Prerequisites: ECON 201 and 202.

Industrial Organization and Public Control

404 The Structure and Performance of Industry
3 hrs. Fall
This course deals with the ways in which the organization of sellers affects the performance of industrial markets and thus the nation's economic welfare. The role of government in maintaining competition in American industry is examined. Each student is required to study a particular industry to determine its current structure, conduct and performance. Prerequisite: ECON 201.

442 Business and Government
3 hrs.
A study of the economics of regulation of business. The analyses presented emphasize costs as well as benefits of control policies. Prerequisites: ECON 201 and 202.

445 Corporations and Public Policy
3 hrs. Fall, Winter
A study of the organization of economic enterprise, particularly large corporations. The history, financing, and control of these enterprises will be studied in an effort to determine how the public interest is affected and how public control has protected and can protect the public interest. Prerequisites: ECON 201 and 202.

447 Economics of Transportation and Public Utilities
3 hrs.
An examination of the economics and regulation of the public utility industries with particular emphasis on transportation. Prerequisites: ECON 201 and 202.

International Economics

480 International Economics
4 hrs. Winter
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 202.

484 Comparative Economic Systems
3 hrs.
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.

487 Studies in Asian Economics
3 hrs. Fall
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 the other Asian economies. Prerequisites: ECON 201 and 202.

580 International Trade: Theory and Policy
3 hrs.
This course is designed to study the pure theory of international trade and trade policy. Prerequisite: ECON 480, or consent of instructor.

585 The Economics of Sub-Saharan Africa
3 hrs.
A survey of the indigenous economic systems of sub-Saharan Africa and has these systems been modified over time by the intrusion of various foreign populations. The economic progress will be examined and a detailed investigation of economic, social, and political obstacles to further progress will be made. Not open to students who previously received credit in 585 Economics of North Africa and the Near East. Prerequisites: ECON 201 and 202 or consent of instructor.

588 Economic Development
4 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. Special attention will be paid to evaluating the effectiveness of the United States foreign-aid program and examining the issues arising as a result of the conflict with the U.S.S.R. Prerequisites: ECON 201 and 202.

589 The Economics of Latin America
3 hrs.
A survey of the principal economic problems of the Latin American countries. A substantial portion of the course will be devoted to case studies of the development of particular countries. Prerequisites: ECON 201 and 202.

Special Studies

500 Continuing Education in Economics: Variable Topics
1-3 hrs.
Application of economic principles and analysis to selected topics of interest to students in Continuing Education courses and workshops. Topics will vary and course may be repeated twice. May not be counted in fulfilling economics major, minor, or M.A. requirements.
An independent program of study for qualified advanced students to be arranged in consultation with the instructor. Prerequisite: Consent of chairperson of department.

**English (ENGL)**

William Combs, Chairman
Thomas Bailey
Bernadine Carlson
Norman Carlson
John Cooley
Seamus Cooney
Nancy Cutbirth
Clifford Davidson
Robert Davis
Stephanie Demetropolous
Philip S. Denenberg
Rollin Douma
Kathleen Drzick
Stuart Dybek
Hugh Fullerton
Edward Galligan
C. J. Gianaekaris
Martin Gingerich
Clare Goldfarb
Russell Goldfarb
Jamy Gordon
Maryellen Harrs
Bradley Hayden
Robert Hinkel
Karla Holloway
Edward Jayne
W. Arnold Johnston
Elise B. Jorgens
Ralph Miller
John Murphy
Maseo Pearson
David Pugh
William Rosegrant
David F. Sadler
Herbert Scott
Shirley Scott
Thomas Seiler
Robert Shafer
Thomas Small
Nancy Stone
John Stroupe
Larry Syndergaard
Anne Szalkowski
Constance Weaver
John Woods

The English Department serves students in two principal ways: In developing each person’s power to communicate and express himself or herself and in enhancing each person’s ability to participate in and understand the experiences of other people, real and imaginary, past and present. Courses and programs offered by our department—in writing, English language, and literature (including film)—enable students to concentrate in English, complement their other studies, or simply explore and sample the worlds of language and literature. As a department we are traditionally engaged in training teachers and preparing students for graduate study. We are equally concerned with the responsibility of at least 40 hours; special examination. Students planning to do graduate work in high school should consult with one of the department’s undergraduate advisers (383-1628) about transferring credit in 282 Children’s Literature, 305 Practical Writing, 307 Good Books II, 311 Perspectives Through Literature, 312 Western World Literature, 313 Asian Literature, 314 African Literature, 315 The English Bible as Literature, and other advanced courses, as appropriate to the interests and background of the student. Many of these English courses may be used to satisfy General Education requirements.

English advisers 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. Advisers’ offices are on the sixth floor of Sprau Tower (phone 383-1628).

**Majors and Minors**

1. The requirements for the English majors (listed below) are flexible enough to allow students to follow individualized courses of study. As soon as a student decides to become an English major, he or she should confer with one of the English advisers, who can help plan the major. All major programs must be approved by an English adviser. Students should see the adviser early enough to leave at least 12 credits to complete after declaring the major. Minor slips are required for all minors. Students minoring in English should see the adviser as soon as possible after they begin work on the minor.

2. A minimum of 30 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. No more than four hours of “D/C” or “D” credit 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 language in high school). The department recommends as much additional work in the language as a student can manage. Students planning to do graduate work beyond the M.A. ought to study at least two languages. French and German are most frequently required in graduate school.

5. Special Note to Transfer Students: All transfer students majoring or minoring in English should consult with one of the department’s undergraduate advisers (383-1628) about transferring credit in English courses from other colleges. An early conference will enable the student to avoid duplication of courses and possible loss of transfer credit and may enable the student 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 12 hours of transferred credit toward a minor.

6. Honors Program. The English Department honors program allows especially capable students to work for honors in English through several different means, depending on the temperament and needs of the particular student: independent study; group study in honors seminars; an “enriched” major program of at least 40 hours; special examination, research papers, or writing projects; and various combinations of these. Students...
who anticipate being able to meet the grade point average requirements for honors of 3.0 in all university work and 3.5 in the major should consult with the department’s honors director to work out an individualized honors program.

**Majors**

30 hours required

**Arts and Sciences, Liberal Arts, Other Non-Teaching Curricula**

110 Literary Interpretation: Entry to the program. Prerequisite to all required literature courses but does not count toward this major.
1. Either 310 Literary History and Criticism or 340 Development of English Verse;
2. 322 Major American Writers;
3. An English language course (371, 372, or 572);
4. Two courses chosen from those indicated with an * (courses which emphasize literature written before 1950);
5. Plus electives to complete the 30 hours. Twenty of the thirty hours must be in 300, 400, or 500 level courses. 300-305 level courses fulfilling other basic requirements of the major may be included in this total; for instance, the two * courses.
6. English advisers (383-1684) will help plan individualized programs.

**Secondary Education Curriculum**

110 Literary Interpretation: Entry to the program. Prerequisite to all required literature courses but does not count toward this major.
1. Either 310 Literary History and Criticism or 340 Development of English Verse;
2. 322 Major American Writers;
3. An English language course (either 371 The English Language or 572 American Dialects);
4. 379 Writing for the Secondary Teacher;
5. Two courses from those indicated with an * (courses which emphasize literature written before 1950);
6. 380 Teaching of Literature in the Secondary Schools is required. It is required for certification but does not count toward the 30 credits in English required for the major. ED 301 Teaching and Learning Secondary is the prerequisite for this course.
7. Twenty of the thirty hours must be in 300, 400, or 500 level courses, for instance the two * courses. 380 may not count toward this total.

**Elementary Education Curriculum**

110 Literary Interpretation. Entry to the program. Prerequisite to all required literature courses but does not count toward this major.
1. 282 Children’s Literature;
2. 264 News Writing or any option of 305 level courses fulfilling other basic requirements of the major but does not count toward this major;
3. 373 Reading and Writing as Psycholinguistic Processes;
4. Two literature courses in addition to 110 and 282;
5. One 400 or 500 level course (other than 497, 597, or 582). This course may count as one of the two literature courses required in No. 4.
6. Plus electives to make 30 hours. No more than two of the following courses—282 Children’s Literature, 283 Literature for Adolescents, and 528 Studies in Children’s Literature—may count toward the 30 hours.
7. An alternative option for the 282, 369, 373 core listed above is the ILAM/ENGL 375-376 sequence plus one course selected from 282, 369, or 373. Both 375 and 376 must be taken or no credit toward the major will be given under this option. This option requires a major slip. The student should see an adviser before completing the first eight hours of course work under this option. Elementary education English majors should not register for courses in the teaching of English (380, 385) without consulting with an English adviser.

**English Major With Writing Emphases**

Major slips required. Transfer students who wish to enter these programs should see an adviser as soon as possible after admission to work out the details of taking at least 18 hours before graduation.

**English Major With Creative Writing Emphasis**

110 Literary Interpretation: Entry to the Program. Prerequisite to all literature courses but does not count toward the major:
1. 266 Writing Fiction and Poetry (prerequisite to all other writing courses);
2. 12 hours from the following courses: 366 Advanced Fiction Writing, 367 Advanced Poetry Writing, 368 Playwriting, 566 Creative Writing Workshop (366, 367, and 368 may be taken concurrently. The prerequisite for 366 is 6 hours of creative writing courses);
3. 16 hours (four courses at the 300-500 level) chosen from the core requirements (No. 1-4) of the Arts and Sciences English Major. See above.
4. Electives to make 30 hours.

**English Major With Practical Writing Emphasis**

110 Literary Interpretation. Entry to the program. Prerequisite to all literature courses but does not count toward the major:
1. 264 News Writing or any option of 305 Practical Writing. (One of these courses is prerequisite to all other writing courses in this major);
2. 364 Feature and Article Writing (may be taken concurrently with 462, below);
3. 462 Advanced Writing (may be taken concurrently with 364, above);
4. 464 Professional Writing (Prerequisite: 2 upper level writing classes);
5. 461 Form in Non-Fiction;
6. 12 hours (three courses at the 300-500 level) chosen from the core requirements (No. 1-4) of the Arts and Sciences Major. See above.
7. Electives to make 30 hours.

**Practical Writing Program Cognate Options**

CAS 104 Business and Professional Speech (3 cr. hr.)
CAS 130 Public Speaking (3 cr. hr.)
CAS 358 Television and Film Scripting (3 cr. hr.)
CAS 359 Broadcast Journalism (3 cr. hr.)
CAS 547 Organizational Uses of Radio and TV (3 cr. hr.)
ED 548 Audiovisual Media I (3 cr. hr.)
ED 550 Photography Workshop (3 cr. hr.)
GEOG 311 Geography of Michigan (3 cr. hr. GE)
GHUM 315 Human Communication (4 cr. hr., GE)
GHUM 316 Mass Media: Messages and Manipulation (4 cr. hr., GE)
HIST 204 Business History (3 cr. hr. GE)
HIST 310 History of Michigan (3 cr. hr.)
ITE 150 Graphic Arts (3 cr. hr.)
MATH 366 Introduction to Statistics (4 cr. hr., GE)

One English course to be selected in consultation with the department adviser.

**English Major With Community Journalism Emphasis**

110 Literary Interpretation. Entry to the Program. Prerequisite to all literature courses but does not count toward the major:
1. 264 News Writing (prerequisite to other writing courses in this major. Other courses may be taken concurrently);
2. 265 News Editing
3. 363 Reporting
4. 463 Reporting Community Affairs (prerequisite: 264 and 363);
5. 461 Form in Non-Fiction
6. 12 hours (three courses at the 300-500 level) chosen from the core requirements (No. 1-4) of the Arts and Sciences Major.
   See above;
7. Electives to make 30 hours.

The English Major with Community Journalism Emphasis may be expanded from 30 to 44-46 hours by taking 3-4 courses selected from the following cognate options. GE means that the courses listed also carry General Education Credit.

**Community Journalism Program Cognate Options**

CAS 359 Broadcast Journalism (3 cr. hr.)
CAS 541 Mass Communications Law (3 cr. hr.)
CAS 544 Mass Communication, News and Public Affairs (3 cr. hr.)
ED 550 Photography Workshop (3 cr. hr.)
GEOG 311 Geography of Michigan (3 cr. hr. GE)
GHUM 316 Mass Media: Messages and Manipulation (4 cr. hr., GE)
HIST 310 History of Michigan (3 cr. hr.)
ITE 150 Graphic Arts (3 cr. hr.)
PSCI 202 State and Local Government (4 cr. hr.)

One English course to be selected in consultation with the department adviser.
Minors
20 hours required
Arts and Sciences, Liberal Arts, Other Non-Teaching Curricula
Required: 110 Literary Interpretation; at least 8 hours of coursework in 300, 400, or 500 level courses; plus electives to complete the 20 hours.
For English minors in non-teaching curriculum, only one specific course (110) is required, in order that the minor program may be individualized to supplement or complement a major in virtually any other field of study—business, technology, fine arts, the sciences, social sciences, or humanities. To discuss these possibilities, see an English adviser (383-1628).
Secondary Education Curriculum
Required: 110 Literary Interpretation; either 371 The English Language or 572 American Dialects; an American literature course; at least 8 hours of work in 300, 400, or 500 level courses; plus electives to complete the 20 hours.
The courses in the methods of teaching English (380, 385) do not count toward the English minor, but they will strengthen a student's professional preparation. The department strongly recommends that minors in secondary education see an English adviser before completion of the first twelve hours of the minor.
Elementary Education Curriculum
Required: 110 Literary Interpretation, 373 Reading and Writing as Psycholinguistic Processes, 369 Writing for Elementary Teachers, 282 Children's Literature, plus electives to complete the 20 hours.
No more than one of the following courses may be counted toward the 20 credits required in the minor: 282 Children's Literature, 283 Literature for Adolescents, 582 Studies in Children's Literature.
An alternative option for the 282, 369, 373 core listed above is the ILAM/ENGL 375-376 sequence plus one course selected from 282, 369, or 373. Both 375 and 376 must be taken, or no credit toward the major will be given under this option. This option requires a minor slip. The student should see an adviser before completing the first eight hours of coursework under this option.
Elementary education minors should not register for courses in the teaching of English (380, 385) without consulting an English adviser.
English Minor with Writing Emphasis
Students in the Arts and Sciences, Liberal Arts, or other non-teaching curricula may elect to take a practical writing minor, consisting of a cumulative series of upper-level courses in writing and analyzing English. Required: one course in English language or literature, to be taken early in the sequence from those courses which presently count toward an English major or minor, approved by an English adviser prior to enrollment, plus at least twelve hours to be selected from ENGL 305 Pro-Professional Writing, 305 Research and Report Writing, 305 other topic listed in schedule (e.g. Analytical Writing, 364 Feature and Article Writing, 464 Professional Writing, 462 Advanced Writing (recommended as capstone), plus one other course in the department. See course listings. Minor slips are required for the practical writing minor.
Practical Writing Minor
Students in the Arts and Sciences, Liberal Arts, or other non-teaching curricula may elect to take a practical writing minor, consisting of a cumulative series of upper-level courses in writing and analyzing English. Required: one course in English language or literature, to be taken early in the sequence from those courses which presently count toward an English major or minor, approved by an English adviser prior to enrollment, plus at least twelve hours to be selected from ENGL 305 Pre-Professional Writing, 305 Research and Report Writing, 305 other topic listed in schedule (e.g. Analytical Writing, 364 Feature and Article Writing, 464 Professional Writing, 462 Advanced Writing (recommended as capstone), plus one other course in the department. See course listings. Minor slips are required for the practical writing minor.
Journalism Minor
This minor, which can include key courses outside the department, is useful preparation not only for prospective reporters and editors but also for people who plan careers in broadcasting and the media, advertising, marketing, public relations, business, industry, and government. Courses within the program may also be good choices for anyone who wants to understand a vital subject: the ways we communicate in our society.
The minor allows great flexibility in course selection so that students can combine the journalistic skills and insights of their minor with any of a wide variety of major programs: political science, engineering, economics, business, and history, for example. Some of the courses listed in Groups I, II, and III below have prerequisites. See course listings.
Minor slips are required: see an English adviser (383-1628).
Basic Requirements
1. 264 News Writing
2. 265 News Editing
3. 363 Reporting
4. Electives to complete the 20 hours, selected in consultation with the adviser, from at least two of the following three groups:

GROUP I: SPECIALIZED COURSES IN JOURNALISTIC WRITING

ENGL 364 Feature and Article Writing
ENGL 385 Reviewing for the Press
ENGL 463 Reporting Community Affairs
CAS 359 Broadcast Journalism

GROUP II: RELATED COURSES IN WRITING

ENGL 266 Writing Fiction and Poetry
ENGL 305 Practical Writing (any option)
ENGL 462 Advanced Writing
ENGL 464 Professional Writing
CAS 358 TV and Film Scripting

GROUP III: RELATED COURSES IN MEDIA AND COMMUNICATIONS

CAS 240 Broadcast Communication
CAS 540 Studies in Mass Communication (where topic is applicable and with permission of adviser)
GHUM 316 Mass Media: Messages and Manipulation

World Literature Minor
The Department of English and the Department of Languages and Linguistics 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. Combs, 619 Sprau (383-1627).
Integrated Language Arts Minor
The Department of English is one of several participating departments in the integrated language arts minor—a program designed particularly for preservice elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternate learning styles. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section of the College of Arts and Sciences or its listing in the College of Education or the College of Health and Human Services or call the English Department (383-1684).
Course Descriptions
(Courses described in italics are approved for General Education.)

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.

105 Thought and Writing: Variable Topics
4 hrs.
A writing course in which the student will work closely with the instructor to develop his/her sense of language as a means for shaping and ordering his/her experience and ideas, and to develop imagination, thought, organization, and clarity in his/her written work. The student has a choice of options which vary in emphasis and approach. Current options are Writing-Exposition, Writing-Description, and Writing and Science. May be repeated for credit, but may be counted only once toward fulfillment of General Education requirements. Does not count as credit toward English major or minor. Fulfills the University Intellectual Skills college-level writing requirement.

107 Good Books
4 hrs.
An exploration of good literature, selected from all times and countries, and 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.

110 Literary Interpretation
4 hrs.
An introduction to the study of literature, aimed at developing sensitivity and skill in the critical interpretation of poetry, drama, and prose fiction. Designed for entry to any English major program but does not count toward the 30 hours required in a major.
111 Contemporary Topics in Literature
4 hrs.
Exploration of fiction, poetry, drama, and film related to current concerns. Topics are: A. Myth and Folk Literature, B. Man, Woman and Marriage in Literature.

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

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.

210 Film Interpretation
4 hrs.
Studies in the motion picture as art form.

222 American Literature and Culture
4 hrs.
A study of some of the recurrent themes in American life as seen in American literature.

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.

252 Shakespeare
4 hrs.
A survey of Shakespeare’s art through study of selected tragedies, histories, and comedies.

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.

265 News Editing
4 hrs.
Instruction and extensive practical experience in copy editing, rewrite, typography, headline writing, handling wire copy and photographs and layout. Prerequisite: 264 News Writing.

266 Writing Fiction and Poetry
4 hrs.
Study and practice in writing fiction and poetry, intended to develop the student’s understanding of formal techniques and his/her skill in the use of these techniques.

282 Children’s Literature
4 hrs.
An exploration of the human and literary values in the best of children’s books. Emphasis is on critical sensitivity and techniques necessary for interpreting and evaluating works representative of the major forms of children’s literature—folk tale, fantasy, fiction and non-fiction, myth and poetry.

If this course is counted toward the English major or minor, 283 Children’s Literature may not be counted, except by elementary education English majors proceeding under 1975-76 and later catalogs.

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.

307 Good Books II
4 hrs.
An advanced version of ENGL 107 Good Books: more challenging books for more experienced readers. No prerequisite. Does not count toward English major or minor.

310 Literary History and Criticism
4 hrs.
Discussion of important topics and problems, both historical and critical, involved in the systematic study of literature. Emphasis includes study in the chronology of English literature, its development and continuity, and an introduction to the nature and uses of formal literary criticism. Prerequisite: 110.

311 Perspectives Through Literature
4 hrs.
Exploration of an important realm of human nature and action through the special perspective provided by literature. The literary perspectives may be supplemented by materials from other arts or disciplines. Topics are: A. The Quest for the Self; B. Science Fiction and Fantasy; C. Man’s Place in Nature. 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.

312 Western World Literature
4 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.

313 Asian Literature
4 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).

314 African Literature
4 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).

315 The English Bible as Literature
4 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.

322 American Literature: Major Writers
4 hrs.
Intensive reading of representative works of major American writers. Prerequisite: 110.

340 Development of English Verse
4 hrs.
A historical study of English poetry, from its beginning to the present, emphasizing the development of poetic techniques, major verse forms and styles, and their relation to theories of poetry. Prerequisite: 110.

344 (244) The British Novel
4 hrs.
A study of the novel as a literary form reflecting, in its development and diversity, changes in human consciousness. Emphasis will be on development of the British novel from the eighteenth to the early twentieth century. Prerequisite: 110.

363 Reporting
4 hrs.
Instruction and practice in covering news beats, writing complex news stories, and developing good interviewing skills. Prerequisite: 264.

364 Feature and Article Writing
4 hrs.
Study and practice in writing feature and magazine articles, attention to contemporary techniques and styles in documentary and personal reportage. Prerequisite: A previous college-level writing course.

365 Reviewing for the Press
4 hrs.
Theory and practice in writing reviews of books, drama, films, television, concerts, and exhibitions for various kinds of mass-audience publications. Prerequisite: Previous course work in journalism, creative writing, literature, or media.

366 Advanced Fiction Writing
4 hrs.
An advanced course in the writing of fiction, with emphasis on class discussion and criticism of each student’s writing. Prerequisite: 266 or permission of the department.

367 Advanced Poetry Writing
4 hrs.
An advanced course in the writing of poetry, with emphasis on class discussion and criticism of each student’s writing. Prerequisite: 266 or permission of the department.

368 Playwriting
4 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.

369 Writing for Elementary Teachers
4 hrs.
A course intended to develop the writing skills of prospective teachers and to explore the means by which the writing ability of elementary school children can be encouraged, developed, and evaluated.
371 The English Language
4 hrs.
This course will examine the structure of the English language as a tool for understanding choice of style, for reflecting human diversity through the impact of historical as well as of cultural change, and for understanding language acquisition.

372 Development of Modern English
4 hrs.
A course in the history of the language treating the historic and linguistic forces which have affected pronunciation, grammar and vocabulary.

373 Reading and Writing as Psycholinguistic Processes
4 hrs.
A study of the processes of reading and writing English as these are explained by developments in linguistics and psycholinguistics. Particular attention is paid to the degree of complexity in sentence structure as it affects writing maturity, writing style, and reading.

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. (This course is required for the integrated language arts minor.)

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.)

379 Writing for the Secondary Teacher
4 hrs.
A course developing the abilities of prospective teachers to control language in the writing process and exploring means by which the writing ability of secondary students can be encouraged, developed and evaluated.

380 Teaching of Literature in the Secondary Schools
4 hrs.
A study of techniques and theories of teaching literature to young adults. Prerequisite: ED 301 Teaching and Learning—Secondary. Students in the elementary education curriculum must obtain permission from a department adviser before enrolling in this course. Does not count as credit toward the major or minor.

385 Special Topics in the Teaching of English
2 hrs.
Selective study of classroom problems and techniques in the teaching of English. Content varies, but emphasis will be on use of special materials or media in the English curriculum, new and experimental teaching methods or programs, or problems of classroom interaction. May be repeated for credit. Prerequisite, if any, will be announced by the English Department for each section.

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: 110.

416 Women in Literature
4 hrs.
A study of literature of different periods and cultures to identify the images of women and to interpret the search for self as experienced by women protagonists and women writers. Prerequisite: 110.

442 Modern Drama
Studies in the major styles and forms of modern drama from Ibsen to the present. Prerequisite: 110.

452 Shakespeare Seminar
4 hrs.
Intensive study of selected aspects of Shakespeare's poetic and dramatic art. Prerequisite: 110 or 292.

461 Form in Non-Fiction
4 hrs.
A literary analysis of the form and development of non-fiction. Prerequisite: 110.

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.

463 Reporting Community Affairs
4 hrs.
Practice in the covering and reporting of the police, the courts, and other governmental units. Some stress on investigative and in-depth reporting. Prerequisites: 264 and 363.

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.

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.

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.

510 Special Topics in Literature
4 hrs.
Study of a literary movement, theme, or genre, such as classicism, the Arthurian tradition, the lyric. May be repeated for credit as long as the topics are different. Prerequisite: 110 or permission of the department.

530 Medieval Literature
4 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. Prerequisite: 110.

532 English Renaissance Literature
4 hrs.
Readings in representative writers of the period 1500-1660. Prerequisite: 110.

534 Restoration and 18th Century Literature
4 hrs.
(British Literature 1660-1800) Readings in representative writers of the period, focusing on the diversity of literary forms in the period. Prerequisite: 110.

536 Nineteenth Century British Literature
4 hrs.
Readings in representative writers focusing on one or more principal movements of the century. Prerequisite: 110.

538 Modern Literature
4 hrs.
Readings in representative writers in the period 1890-1945, not exclusively in British and American literature. Prerequisite: 110.

540 Contemporary Literature
4 hrs.
Readings in representative writers who have come to prominence since 1945. Prerequisite: 110.

555 Studies in Major Writers
4 hrs.
Study of the works of classical, European or American writers. Limited to one or two authors. Prerequisite: 110.

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. Prerequisite: Six hours of creative writing, graduate standing, or permission of the department.

572 American Dialects
4 hrs.
A study of regional, social, and stylistic variation among American dialects, with emphasis on the dialects of minority ethnic groups as structured systems.

574 Linguistics for Teachers
4 hrs.
An application of the concepts of linguistics to the teaching of language, literature, composition and reading in the English curriculum. Prerequisite: 270, 271, 373, or an introduction to linguistics course, or permission of the department.

582 Studies in Children's Literature
4 hrs.
A study in depth of significant themes, movements, types in children's literature. Prerequisite: 282 or permission of the department. Only one of the three courses 282, 283, 582 may be counted toward the elementary education English minor, and only two of these three courses may be counted toward the elementary education English major.

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.

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
Environment Studies Program

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

French

See "Languages and Linguistics" in the College of Arts and Sciences.

Geography (GEOG)

Joseph P. Stottman, Chair
David G. Dickason
Val L. Eichelaub
Rainer E. Erfart
Charles F. Heller
Oscar H. Horst
Eugene C. Kirchherr
Phillip P. Micklin
Eldor C. Quandt
Henry A. Raup
Hans J. Stolle
George Vuicich

These programs are designed to provide students with an improved understanding of humanity's physical and cultural surroundings and the interrelations of 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 studies and 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 three courses (GEOG 105, 205, 203) and CS 105 are required of majors. A non-teaching major in geography with specialization provides for 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 adviser 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. Students are invited to call at Room 317, Wood Hall (phone 383-1839) for information concerning the departmental major, minor, honors program, or financial assistance.

Geography Major

32 hours credit
105 Our Physical Environment ........... 4 hrs.
205 Our Human World .................. 3 hrs.
202 Geographic Inquiry ................ 3 hrs.
Two courses from Group I at the 200 level or above
One course from Group II
One course from Group III
CS 105 Introduction to Computers ...... 3 hrs.

Geography Minor

20 hours credit
105 Our Physical Environment .......... 4 hrs.
or 205 Our Human World ................ 3 hrs.
and One of the following: GEOG 203, 265, 375, 566, or 582. Remaining courses to be selected with consent of adviser.

Geography Major Specialization

32 hours credit
The areas of specialization are: urban and regional planning, the environment, geographic techniques, physical geography, regional geography, and tourism and travel. 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.

Elementary Education—Geography Major

32 credit hours
105 Our Physical Environment .......... 4 hrs.
205 Our Human World .................. 3 hrs.
203 Geographic Inquiry ................ 3 hrs.
311 Michigan .......................... 3 hrs.
380 United States and Canada .......... 3 hrs.
CS 105 Introduction to Computers ...... 3 hrs.

Elementary Education—Geography Minor

20 credit hours
Required Courses
105 Our Physical Environment .......... 4 hrs.
or 205 Our Human World ................ 3 hrs.
and 460 Concepts and Strategies in the Teaching of Geography .......... 3 hrs.
CS 105 Introduction to Computers ...... 3 hrs.
A course will be selected from Geography Groups III if the student chooses to waive or substitute GEOG 460 for ED 507, Teaching of Social Studies in the Elementary Schools (3 hrs.). It is also acceptable to take both courses.

Secondary Education—Geography Major

32 credit hours
Same requirements as elementary major.

Secondary Education—Geography Minor

20 credit hours
105 Our Physical Environment .......... 4 hrs.
or 205 Our Human World ................ 3 hrs.
and 460 Concepts and Strategies in the Teaching of Geography .......... 3 hrs.
CS 105 Introduction to Computers ...... 3 hrs.
Remaining courses to be selected with consent of adviser. GEOG 460 may be waived and another geography course substituted if SSCI 300, Teaching of Social Studies in Secondary Schools (3 hrs.) is required in another sequence.
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 Adviser, Department of Geography, Room 321 Wood Hall, Western Michigan University, Kalamazoo, Michigan 49008.

Required

405 Our Physical Environment . . . . 4 hrs.
203 Geographic Inquiry . . . . 3 hrs.
205 Our Human World . . . . 3 hrs.
310 Research and Professional Practice . . . 4 hrs.
365 Map, Chart and Air Photo Reading . . . . 3 hrs.
408 Geography of Travel and Tourism . . . . 4 hrs.
412 Professional Practice . . . . 2-4 hrs.
CS 105 Introduction to Computers . . . . 3 hrs.
At least two of the following courses
311 Geography of Michigan . . . . 3 hrs.
360 United States and Canada . . . . 3 hrs.
381 South America . . . . 3 hrs.
382 Mexico and the Caribbean . . . . 3 hrs.
383 Western and Southern Europe . . . . 3 hrs.
384 Soviet Peoples . . . . 3 hrs.
385 The Pacific Realm . . . . 3 hrs.
386 Sub-Saharan Africa . . . . 3 hrs.
389 Monsoon Asia . . . . 3 hrs.

101 Geographic Perspectives on Mankind 2-3 hrs.
A geographic approach will be used to interpret selected characteristics of humanity and the cultural landscape. Topics include: urban problems, world poverty and social welfare, hunger, colonialism, employment crises, ethnic and minority groups, crime, types of development, and transportation systems, religion, and other issues of contemporary concern. Each offering of this course will focus on a single theme.

102 World Geography Through Media and Maps . . . . 3 hrs.
This course presents an introduction to the geography of the earth. This includes the earth as the home of humans, major urban concentrations, descriptive physical characteristics of continents and countries, political subdivision, and general man-land relationships which reflect cultural preferences. Information delivery will be through textual material with a major concentration of carefully selected audiovisual and map and graph materials to enhance in the character of distant places.

105 Our Physical Environment . . . . 4 hrs.
(Science credit) A study of the physical environment of humankind. The course examines the seasonal and latitudinal distribution of solar energy and its effect on weather, vegetation, soils, surface and subsurface waters, and the earth's major landforms. Terrestrial energy is reviewed in relation to earth materials and earth-forming processes. Artificially induced energy changes are interwoven into each topic. Maps, aerial photographs and outdoor observations are utilized as primary investigative tools. Laboratory in physical geography is part of this course.

107 Planetary Science in Elementary Education . . . . 4 hrs.
An interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among these. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites.) Not recommended for science majors.

204 National Park Landscapes . . . . 3 hrs.
(Science credit) Introduction to the physical and human landscapes of the national park system. Consideration of those natural and human processes which have produced the distinctive features of the national parks. Evolution of the national park concept, policies, and problems.

205 Our Human World . . . . 3 hrs.
An introduction to those aspects of geography concerned with the efforts of humans to cope with the environment. Included are population and settlement forms, the utilization of resources, the impact of technology on human occupation of the earth, and the origin and dispersal of cultural elements among the various world realms.

206 The Atmospheric Environment and Man . . . . 3 hrs.
(Science credit) A non-mathematical integrative approach to the atmospheric environment. Emphasis is placed on the interaction of the atmosphere with other environmental features with particular stress given to the role of the atmosphere in affecting the lives and activities of people. Inadvertent modification of the atmosphere by people, weather control, and air pollution also receive special treatment.

225 Introduction to Meteorology and Climatology . . . . 4 hrs.
(Science credit) A non-mathematical analysis of systematic and regional atmospheric behavior. First part of course deals with fundamental physical laws affecting the elements of weather—temperature, moisture and humidity, pressure, and winds. Second part of course examines the distribution of various types of climates over the earth's surface, with particular emphasis on the interaction of geographic factors with the major atmospheric climatic controls, and upon the effects of various climates on the economic activities of people. Prerequisite: GEOG 105 or consent.

237 Environmental Earth Science . . . . 4 hrs.
An interdisciplinary environmentally oriented science offering for students in the science and mathematics teaching minor. The course integrates the environmental aspects of meteorology and geology. The students spend 7-1/2 weeks in environmental geology and 7-1/2 weeks in environmental meteorology. Techniques for presenting the content of the course will model the ways in which environmental earth science can be presented to elementary students. The course is usually taught by cooperating faculty from Geography and Geology. Prerequisite: GEOL 107.

244 Geographic Patterns of Economic Activity . . . . 3 hrs.
A survey of locational economic patterns and their interrelationships, including the study of spatial variation in economic development, primary production, energy generation, manufacturing, transportation, service occupations, and trade.

350 Principles of Conservation and Environmental Management . . . . 3 hrs.
(Science Credit) Critical evaluation of the major natural resources of the United States, particularly soils, water, forests, wildlife, and minerals; examination of the utilization of these resources so as to yield the maximum benefit to people. Emphasis is placed on principles, policies and issues in the management of natural resources.

356 Introduction to City and Regional Planning . . . . 3 hrs.
Intended to provide the student with an introduction to planning thought and professional practice: examination of the evolution from traditional physical land use planning to the comprehensive planning process which incorporates physical, social, and economic elements; consideration of the impact of planners and planning movements of the 19th and early 20th centuries such as the “New Towns” programs; relationship of planning to zoning; the emergence of regional administrative units and regional planning programs.
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.

C. Political Geography. General survey of the principles and the applied aspects of political geography, primary emphasis on the physical and cultural resource bases and conflicts of national states, the assessment of location, boundary delimitation, and the international and political plot of the administrative territories, and electoral geography.

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 administrative, economic, and various water problems together with their solutions.

554 Outdoor Recreation: Resources and Planning 3 hrs. (Science Credit) Examination of extensive resource based outdoor recreation (such as parks, wilderness, wild rivers, hunting and fishing, hiking, etc.) with emphasis upon recreational 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. Readings, discussion, and student-designed and executed individual studies provide professional orientation.

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.

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.

A. 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 zoning, legal foundations of zoning, and the organization of the planning agency.

B. Regional Planning. Organization and plans of regional development programs.

C. Public Lands and Parks. Specific programs and policies relating to the preservation, land management of government-controlled lands.

557 Environmental Impact Assessment 3 hrs. (Science credit) 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. This course provides an introduction to the analysis and preparation of environmental impact statements. Prerequisites: Senior standing and GEOG 350 or permission.

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 or urbanized regions, (2) factors in city growth (activity), (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.
the derivative cultural elements are identified. Emphasis is placed upon the social and economic activities of contemporary Western Europe.

384 Soviet Peoples and Landscape: Continuity and Change
3 hrs.
A general examination of the most important aspects of the Soviet Peoples and landscape set in a spatial framework. Topics discussed include: The physical environment, population distribution and dynamics, the Soviet strategy of economic development (both national and regional), problems of agricultural development, industrial and transport patterns, and problems of environmental deterioration.

385 The Pacific Realm
3 hrs.
Selected studies of the relationships between human beings and the environment in Australia, New Zealand, Melanesia, Micronesia and Polynesia.

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 resources, development, transportation routes, regional development programs.

387 The Middle East and North Africa
3 hrs.
Study of the diversity and uniformity—both physical and cultural—of the Middle East and North Africa of (and including) the Sahara. Special attention is given to aridity problems, economic development, petroleum, Arab reunification movements, and the impact of the Muslim World on the current political scene.

389 Monsoon Asia
3 hrs.
Systematic survey of the physical and human (socio-economic) environments of the southeastern rim of Asia (Pakistan in the west to Japan in the east). Geographical background necessary to interpret present conditions is included.

Group III
Geographic Methodology and Research

203 Geographic Inquiry
3 hrs.
The student will be introduced to geography as a field of study, of research, and occupational opportunity. Geography provides a map as the basis for understanding the physical and cultural attributes of the environment. The student will have an opportunity to investigate social and environmental problems through data collection, analysis, interpretation, and map representation. The development of the various inquiry techniques in geography will be reviewed and case studies exemplifying such development will be examined. The emphasis throughout will be on the application of inquiry models to geographic problems. Prerequisite: CS 105 or equivalent.

265 Map, Chart, and Air Photo Reading
2-3 hrs.
(Science credit) The course introduces the student to a variety of maps, charts and aerial photographs. Information recognition and analysis from map, chart and photo form are emphasized for various uses. Included are terrain analysis, grid system, scale determination and conversion, marine and aerial photography, recreation uses, orienteering, landscape and vegetation analysis, and basic mapping skills.

310 Research and Regulation in Tourism
4 hrs.
This course introduces the research methods and data sources for the analysis of tourism and travel. The use of flow patterns and the predictive modeling of spatial interaction using computer and computer mapping systems form the core of the course. Geographical theories related to diffusion and nodal development shall be examined. The effects of regulations on flow patterns will be investigated.

375 Principles of Cartography
4 hrs.
(Science credit) Introduction to map construction with primary emphasis on the conceptual planning and designing of maps as a medium for communication and research. Lectures are supplemented by laboratory assignments to familiarize students with the history of cartography, drafting techniques, lettering and symbolization, the concept of scale and scale transformations, map layout and design, processes of map reproduction, the employment of projections, and the compilation procedures and creation of various map products. One one-hour lecture and two two-hour laboratory periods. Prerequisite: GEOG 355 or consent.

412 Professional Practice
2-6 hrs.
Provision for an advanced student to benefit by supplementary practical experiences in a particular branch of geography, either by assisting faculty engaged in research or by working in a departmentally-approved off-campus agency. Specific assignments are arranged in consultation with departmental advisers during the semester preceding that in which the student expects to enroll in 412. The student may enroll for one additional semester, but no student will be allowed more than six hours total credit for 412. Prerequisite: Junior standing and consent of Department Chairperson.

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 textual material in the field of geography.

566 Field Geography
2-4 hrs.
The theory and application of geographic techniques in field investigations, collection and analysis of field data, preparation and presentation of materials. The course is based primarily upon field observations. Desirable prerequisite: GEOG 375 or consent.

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.

568 Quantitative Methodology
3 hrs.
The application of quantitative concepts and methods to the solution of geographic problems. Critical review of research in quantitative geography ranging from the use of common statistical techniques to methods of model formation in the analysis of spatial interaction. Prerequisite: A course in statistics or consent.

580 Advanced Cartography
4 hrs.
(Science credit) The compilation of data and the design of maps and graphs for research papers and the application of statistical techniques in mapping geographic phenomena are applied to the more advanced cartographic techniques and photocartography. Students are assigned special problems to develop their proficiency in the use of cartography as a tool in research. One hour of lecture in conjunction with independent student projects. Prerequisite: GEOG 375 or consent.

582 Remote Sensing of the Environment
3 hrs.
(Science credit) The student will acquire proficiency in the fundamental techniques and skills of photogrammetry and photo-interpretation during the first part of the course. The remainder of the semester will be spent in interpreting photos dealing with such topics as geomorphology, archeology, vegetation and soils, water resource, rural and urban land use as well as adapted to the interest and anticipated future work of the student.

598 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. Prerequisite: Consent of department adviser and instructor.
Geology (GEOL)

Lloyd J. Schmaltz, Chair
James Akers
Ronald B. Chase
John D. Grace
William B. Harrison, III
Richard N. Passero
William Sauck
Christopher J. Schmidt
W. Thomas Straw

Geology Major

Minimum 35 Hours

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 130 Physical</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 131 Earth History and Evolution</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 433 Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 440 Petrology and Petrography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 532 Surficial Processes and Groundwater</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 535 Sedimentation and Stratigraphy</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 560 Introduction to Geophysics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Required Hours: 35

A minimum of a “C” is required in each of the required Geology courses, and a “C+” average in all cognate courses.

Supporting required courses

CHEM 101 or 102 (for students with a high school chemistry background) and 120; PHYS 110 and 111, or 210 and 211; BIOL 101 or as arranged by counselor; and MATH 122 and 123 and CS 105 Introduction to Computers. Some modification of these requirements may be made in consultation with the student’s departmental counselor. A summer field course in geology is strongly recommended for all geology majors and is indispensable for students planning professional careers. In addition, at least one year of foreign language is recommended. Geology majors should elect minors of mathematics, chemistry, physics, or biology. Students electing one of the above minors must still complete all other supporting required courses. Students not electing one of the above minors may elect the group science minor for geology majors (see below).

Suggested 4-year program of study for geology majors including all required supporting courses.

Freshman Year

Fall

GEOL 130
MATH 122
(Same as high school mathematics may have to make MATH 118 instead of 122.)

Winter

GEOL 131
MATH 123
BIOL 101

Sophomore Year

GEOL 335
CHEM 101 or 102
GEOL 433
CHEM 120

Junior Year

GEOL 336
GEOL 430
PHYS 210 or 110
GEOL 440
PHYS 211 or 111
CS 105

Summer Field Course in Geology

Senior Year

GEOL 535
GEOL 532
GEOL 560

Geology Minor

Minimum 18 Hours

The geology minor is designed as a supporting minor for students preparing to do professional work in the fields of chemistry, physics, engineering, zoology, botany, and geography. It cannot be combined with earth science as a major-minor or double minor relationship. A student may design a geology minor for his specific need.

Required Courses

<table>
<thead>
<tr>
<th>Hrs.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>131</td>
<td>Earth History and Evolution</td>
</tr>
<tr>
<td>335</td>
<td>Mineralogy</td>
</tr>
<tr>
<td>366</td>
<td>Optical Mineralogy</td>
</tr>
<tr>
<td>430</td>
<td>Structural Geology</td>
</tr>
<tr>
<td>433</td>
<td>Invertebrate Paleontology</td>
</tr>
<tr>
<td>440</td>
<td>Petrology and Petrography</td>
</tr>
</tbody>
</table>

One of the following options is recommended:

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>131</td>
<td>Earth History and Evolution</td>
</tr>
<tr>
<td>335</td>
<td>Mineralogy</td>
</tr>
<tr>
<td>366</td>
<td>Optical Mineralogy</td>
</tr>
<tr>
<td>301</td>
<td>Minerals and Rocks</td>
</tr>
<tr>
<td>433</td>
<td>Invertebrate Paleontology</td>
</tr>
</tbody>
</table>

6 additional hours in geology

Course substitution from other geology offerings can be made with the consent of the departmental adviser. This minor is not acceptable for education majors and minors.

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 designed to provide an understanding of what geophysics is and to prepare students for work in physics and geology or in related fields. A student may design a geophysics major for his specific need.

Minimum 24 Hours

Required Courses

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>General Physics</td>
</tr>
<tr>
<td>120</td>
<td>Mechanics and Heat</td>
</tr>
<tr>
<td>211</td>
<td>Electricity and Light</td>
</tr>
<tr>
<td>212</td>
<td>Introductory Modern Physics</td>
</tr>
</tbody>
</table>

One of the following is recommended:

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>Minerals and Rocks</td>
</tr>
<tr>
<td>433</td>
<td>Invertebrate Paleontology</td>
</tr>
</tbody>
</table>

6 additional hours in geology

Total Required Hours: 24-25

Total Minor Hours: 21

Required Supporting Course: CHEM 101 or 102 (4 hours)

Total Required Hours: 69-75

Electives

At least 4 credit hours selected from the physical or biological sciences with approval of student’s adviser.

Earth Science: Teaching Major and Minor

The earth science teacher 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.

Major (30 hours)

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>530</td>
<td>Thermodynamics and Kinetic Theory</td>
</tr>
<tr>
<td>352</td>
<td>Optics</td>
</tr>
<tr>
<td>540</td>
<td>Electricity and Magnetism I</td>
</tr>
</tbody>
</table>

Electives (9-12 hours)

Three electives from upper-level geology, physics, and engineering courses to be chosen with consent of adviser (9-12 hours).

Mathematics Minor (Required) (MATH)

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>122</td>
<td>Calculus I</td>
</tr>
<tr>
<td>123</td>
<td>Calculus II</td>
</tr>
<tr>
<td>272</td>
<td>Vector and Multivariable Calculus</td>
</tr>
</tbody>
</table>

Chemistry (CHEM)

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Qualitative Analysis</td>
</tr>
<tr>
<td>102</td>
<td>General Chemistry</td>
</tr>
</tbody>
</table>

Physics (PHYS)

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
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<tbody>
<tr>
<td>110</td>
<td>General Physics</td>
</tr>
<tr>
<td>111</td>
<td>General Physics</td>
</tr>
<tr>
<td>210</td>
<td>Mechanics and Heat</td>
</tr>
<tr>
<td>211</td>
<td>Electricity and Light</td>
</tr>
</tbody>
</table>

Group Science Minor for Geology Majors

Minimum 24 Hours

Required Courses

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>Earth History and Evolution</td>
</tr>
<tr>
<td>131</td>
<td>Physical Geology</td>
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</table>

One of the following options is recommended:

<table>
<thead>
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<th>Hrs.</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>301</td>
<td>Minerals and Rocks</td>
</tr>
<tr>
<td>433</td>
<td>Invertebrate Paleontology</td>
</tr>
</tbody>
</table>

6 additional hours in geology

Total Minor Hours: 24

Required Supporting Course: CHEM 101 or 102 (4 hours)

Total Required Hours: 69-75

Strongly Recommended: Field course in geology, 6-8 hours.
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, 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, Agriculture, Biology, Geography, Chemistry, Physics, and others. Courses are selected in consultation with the earth science adviser 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 and 10 credit hours for a minor including GEOL 130, 131 and 301 and/or 339.

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.

Course Descriptions

(Courses described in italics are approved for General Education)

100 Earth Studies

4 hrs. Fall, Winter, Spring

The earth we live on is both friend and foe. It provides for us only if we understand it. If not, it becomes a harsh environment which permits us only to eke out a primitive existence. GEOL 100 introduces students to the materials of which the earth is made, to the processes which have created the earth and fossil groups. Three lectures and a three-hour laboratory. Prerequisite: GEOL 100 or 130. MIN 301 and General Chemistry or consent of instructor.

107 Planetary Science in Elementary Education

4 hrs. Fall, Winter

An interdisciplinary study of the earth, atmosphere, solar system and universe, and their relationships and interactions. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisites.) Not recommended for science majors.

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.

130 Physical Geology

4 hrs. Fall, Winter, Spring

A study of 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.

131 Earth History and Evolution

4 hr. Fall, Winter, Spring

Geologic time, evolution of prehistoric life, and principles of earth history with case examples from North America. Prerequisite: GEOL 130 or consent.

237 Environmental Earth Science

4 hrs.

An interdisciplinary environmentally oriented science offering for students in the Elementary Education and Mathematics minor. The course integrates the environmental aspects of meteorology and geology. The students spend 7-1/2 weeks in environmental geology and 7-1/2 weeks in environmental meteorology. Techniques for presenting the content of the course will model the ways in which environmental earth science can be presented to elementary students. The course is taught by cooperating faculty from Geography and Geology. Prerequisite: GEOL 107.

300 Oceanography

3 hrs. Fall, Winter, Spring

Survey of oceanographic sciences including physical, chemical, biological, and geological oceanography. Lecture 3 hours a week.

301 Minerals and Rocks

3 hrs. Winter

A one semester course covering hand specimen mineralogy and petrology, includes introduction to crystallography, physical and chemical properties of minerals, and rock description and genesis. Will not count toward a major in geology. Prerequisite: GEOL 100 or 130.

312 Geology of the National Parks and Monuments

2-3 hrs.

A study of the origin of geologic features and the development of landscapes through geologic time in National Parks and selected Monuments. Students will be expected to read extensively in the available literature. Lecture 2 hours per week (2 credits).

335 Mineralogy

4 hrs. Fall

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 130 and General Chemistry or consent of instructor.

336 Optical Mineralogy

3 hrs. Fall

Principles and methods of optical crystallography. Study of minerals in crushed grains and in thin sections. Lecture 2 hours a week. Laboratory 3 hours a week. Prerequisite: GEOL 335 (may be taken concurrently).

339 Field Studies in Geology

1-6 hrs.

Field study of specific subjects in Geology. Subject offered will be announced in advance and selected from: Field mapping, stratigraphy and sedimentation, regional geology, and so forth. The required course, GEOL 339, in the teaching of Earth Science major is normally taught the two weeks of summer prior to the fall term, but may be offered at other times during the summer. Students planning to take this course should check with the Earth Science adviser in the Department of Geology.

430 Structural Geology

3 hrs. Fall

Development of rock structures and mechanics of rock deformation. Structural interpretation of geologic maps, cross-sections, and aerial photographs. Lecture 2 hours a week. Laboratory 2 hours a week. Prerequisites: GEOL 130 or consent of instructor.

433 Invertebrate Paleontology

4 hrs. Winter

Morphology, classification, evolution, and stratigraphic distribution of major invertebrate fossil groups. Three lectures and a three-hour laboratory. Prerequisite: GEOL 130 or consent.

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 instructor.

440 Petrology and Petrography

3 hrs. Winter

Classification, origin, and description of igneous, sedimentary, and metamorphic rocks. Laboratory study of rocks and thin sections. Lecture 3 hours a week. Laboratory 3 hours a week. Prerequisite: GEOL 336.

502 Problems in Geology and Earth Science

1-3 hrs. Fall, Winter

Individual problems involving topical reading and/or research problems in earth sciences. May be repeated for credit. Prerequisite: Consent of instructor.

505 Regional Geomorphology of the United States

3 hrs.

A study of geomorphic processes and landforms by consideration of geographic regions of the United States. Prerequisite: GEOL 131 or consent.

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 335, or consent of instructor.

530 Plate Tectonics and Earth Structure

3 hrs. Fall

Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tenents of plate tectonics. Prerequisites: GEOL 131, 301 or 335.
532 Surficial Processes and Ground-water Geology
3 hrs. Winter
Detailed consideration of fluvial, eolian, and glacial processes and the geological aspects of surface water and ground-water hydrology. Qualitative and quantitative aspects of ground-water movement, location, and evaluation and the influences of man on the hydrologic system. Prerequisite: GEOL 130.

535 Sedimentation and Stratigraphy
4 hrs. Fall
Processes, characteristics, and relationships among fluvial, deltaic, strand plain, lagoon, shell, 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 3-day field trip. Three lectures and one three-hour laboratory per week. Prerequisite: GEOL 131.

536 Glacial Geology
3 hrs. Spring
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 131 and consent of instructor.

543 Paleoecology
3 hrs.
Study will include the ecology, life, habits and environmental interactions of ancient organisms. Prerequisite: GEOL 433 or BIOL 541.

544 Environmental Geology
3 hrs. Fall
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 or consent.

545 Carbonate and Evaporite Depositional Systems
3 hrs.
Processes, characteristics, and relationships of modern and ancient platform and basin carbonate and evaporite facies. Course includes an 11-day field trip (Spring Vacation) to investigate Holocene, Pleistocene, and Tertiary carbonate environments and facies in Florida, and a 3-day trip to northern Indiana and Ohio to examine Silurian Platform carbonates. Student projects include logging, description, and interpretation of core and slabs at the mesoscopic level. Two 2-hour meetings per week. Prerequisites: GEOL 433, GEOL 535 and consent.

560 Introduction to Geophysics
3 hrs. Winter
Seismology, gravity, geomagnetism, electrical resistivity, and heat measurements applied to the determination of the internal structure of the earth. Two lectures and 3 hr. practical laboratory-introduction to geophysical instrumentation. Prerequisites: GEOL 130, MATH 122, two semesters of Univ. Physics.

561 Seismic Methods
3 hrs.
Reflection and refraction seismology as applied to the search for petroleum, seafloor studies in civil engineering, and other geologic problems. Two lectures and 3 hr. practical laboratory and field exercises and problems. Prerequisites: GEOL 560, CS 306, and MATH 123.

562 Gravity and Magnetic Methods
3 hrs.
Potential field methods as used in mining and petroleum exploration, for geologic mapping, and ground-water problems. Analytical solutions, numerical modeling, and other interpretational techniques. Prerequisites: GEOL 560, CS 306, and MATH 123.

563 Electrical Methods
3 hrs.
Resistivity sounding and profiling, induces 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, and PHYS 540 (recommended).

564 Field Geophysics
3 hrs.
Field studies demonstrating the use of seismic reflection, gravity, and electrical resistivity methods for glacial geology and ground-water problems in the Kalamazoo area. Course also includes 1-week trip to Michigan’s Upper Peninsula to apply magnetic, self potential, electromagnetic, and gravity methods in Precambrian terrain. Prerequisite: GEOL 560.

German
See “Languages and Linguistics” in the College of Arts and Sciences.

History (HIST)

Ernst A. Breisach, Chair
George T. Beech
Alan S. Brown
Walter J. Brunhumer
Richard T. Burke
Albert E. Castel
Sherwood S. Corrider
Ronald W. Davis
Ross Gregory
Robert J. Hahn
H. Nicholas Hannen
Robert W. Hannah
Graham P. Hawks
Paul L. Maer
Gilbert W. Morell
Andrew C. Nahm
Emanuel Nodel
Dale P. Pattison
Peter Schmitt
John Yzenbaard

The Department of History offers training in several broad professional and preparatory areas:
1. Public History: historical administration, consultancy, conservation and interpretation, applied research.
2. Education: teaching at various levels.
3. Preprofessional and Graduate: preparation for graduate study in history, law, theology, related social sciences and humanities.
4. Liberal Education: development in all students of historical awareness and perspective, an autonomous structure of understanding that taps the vast human experience which no longer may be observed directly.

Programs
Ronald Davis, Undergraduate Adviser
4075 Friedmann Hall
(383-1731)

Advising: All students in history programs are strongly urged to meet with the department’s undergraduate adviser prior to registering for each semester or session. Major and minor slips are required for graduation audits.

Transfer Students: Transfer students who major in history must complete at Western at least 18 hrs. of coursework applied to major requirements. Transfer students who minor in history must complete at Western at least 12 hrs. of coursework applied to minor requirements. Questions about transfer credit, or equivalencies of history courses elsewhere to those at Western should be addressed to the undergraduate adviser.

Advanced Placement: Credit earned through various advanced placement examinations ordinarily entitles students to proceed with additional advanced work but does not reduce the minimum number of hours required for a major or minor in history.

Correspondence Courses: Courses taken by correspondence may not be used to fulfill major or minor requirements.

Minimum Grades: Only courses in which a grade of “C” or better is earned may be applied toward history major or minor requirements.

Honors in History: Each year the department faculty designates a small number of majors as honors graduates. To be eligible for consideration for such designation, students
HISTORY

must possess a minimum grade point
average of 3.5 in history and overall. It is not

3. Theory and Practice: at least two courses
chosen from:

College in order to be consiaered for honors
in history.

Secondary Education Curriculum:
Students enrolled in this curriculum and

majoring or minoring in history are required

to complete with a grade of "C" or better
SSCI 300: Teaching of Social Studies in
Secondary Schools, unless some other
course, recognized by the College of

Education as a teaching methods course and
acceptable to the Department of History as

such, is substituted. Credit earned in SSCI
300 does not count toward fulfillment of

credit hour requirements for a history major
or minor.

Elementary Education Curriculum:
Students enrolled in this curriculum and

majoring or minoring in history are required
to complete with a grade of "C" or better ED
507: Teaching of Social Studies in the
Elementary Schools, unless some other
course, recognized by the College of
Education as a teaching methods course and
acceptable to the Department of History as
such, is substituted. Credit earned in ED 507
does not count toward fulfillment of credit

hour requirements for a history major or

minor.

I Major requirements for students in arts
and sciences, education, business,

preprofessional, and other curricula:

1.

Basic Courses

100 Early Western World

4 hrs.

101

Modern Western World

4 hrs.

201

Historians in the Modern
World

210 United States to 1877
211 United States since 1877
2.

1 hr.

3 hrs.
3 hrs.

Advanced Courses: at least 15 hrs.

exclusive of theory and practice courses,
in courses numbered 300 through 589,
including at least 9 hrs. in courses
numbered 500 through 589. Advanced

coursework must be distributed in three of

the following areas:
A.

North America

chosen from:

390 Introduction to the Study
of History

2 hrs.

392 Great Historians

3 hrs.

511

3 hrs.

505 Local and Regional History. . . .3 hrs.
Introduction to Archives

590 Current Developments in Historical
Theory and Practice
2 hrs.
593 Philosophy of History
2 hrs.
4.

A total of at least 34 hrs. of coursework in

history

II. Major requirements for students in the
public history curriculum:
1.

2.

Basic Courses

100 Early Western World

4 hrs.

101

Modern Western World

4 hrs.

201

Historians in the Modern World . 1 hr.

210 United States to 1877
211 United States since 1877
Advanced Courses: at least 15 hrs.

history.

3 hrs.
3 hrs.

exclusive of theory and practice courses,
in courses numbered 300 through 589,
including at least 9 hrs. in courses
numbered 520 through 527 and at least
one course in European history.

History

3 hrs.

HIST 512 Introduction to Museum
Studies
3 hrs.
HIST 513 Historic Preservation ... .3 hrs.

ART 220, 221, 396, 597
CRT 326, 327, 355, 356

Minor Requirements-

HIST 315

All Curricula
1

3 hrs.

3. One of the following:

4.

Basic Courses

100 Early Western World

4 hrs.

101 Modern Western World
4 hrs.
210 United States to 1877
3 hrs.
211 United States since 1877
3 hrs.
2. Advanced courses: at least 9 hrs. in

courses numbered 300 through 593,
including at least 3 hrs. in courses
numbered 500 through 589. Advanced

coursework must be distributed in at least

two of the following areas:
A.

North America

C.

Non-Western World

Electives:
ANTH 540

HIST 390, 392, 500, 520, 521, 522, 523,

524, 525, 526, 527, 590, 593, 599

5. A total of at least 23 hrs. of coursework

is required for the minor.

Course Descriptions
(Courses described in italics are approved for
General Education.)

Basic Courses

B. Europe

100 The Early Western World
4 hrs.

D. General

E. Theory and Practice

3. A total of at least 23 hrs. of coursework

in history.

This program is designed to prepare students
for a wide variety of entry-level positions in
fields of public history. It includes a 36 hr.
major in history (see above), a cognate
package and an internship experience. The
cognate package comprises:

1. A core of public history courses, required
coursework in anthropology, courses in art
history and laboratory science, and at
least one course in computer usage.
2. A minor in one of the following fields:
anthropology, applied statistics, art history,
biology, communication arts and sciences,
earth science, general industrial

education, geography, interior design
emphasis in consumer resources, political
science, sociology. NOTE: In come cases
minor requirements are quite specific and
may differ from standard departmental
History Department undergraduate adviser

3. Theory and Practice: At least two courses

Archaeology
HIST 505 Local and Regional

Studies
3 hrs.
513 Historic Preservation
3 hrs.
4. A total of at least 36 hrs. of coursework in

should be chosen in consultation with the

Non-Western World

D. General

ANTH 210 Introduction to

3 hrs.

requirements. Courses for the minor

B. Europe

C.

511 Introduction to Archives
512 Introduction to Museum

Public History Curriculum

Major Requirements

2. Two of the following:

505 Local and Regional History... 3 hrs.

necessary to be involved with the Honors

91

as well as with departmental advisers.

3. Electives chosen from an approved list.
Students in the public history curriculum
also must complete University
requirements in General Education and
physical education and compile at least

122 hrs. of credit for graduation.
Admission to the curriculum requires prior
consultation with and consent of the History
Department undergraduate adviser.

Throughout the centuries western man has
constantly adjusted his life style in response
to the challenge of his times. In the process
he has created many government forms,
social stuctures, interpretations of man,
ideological systems, and modes of artistic
expressions. The course examines these
creations and shows how the historian

analyzes the patterns of persistence and
change which they reflect. Periods covered:

Ancient Greece, Ancient Rome, Middle Ages,
Renaissance, Reformation.

101 The Modern Western World
4 hrs.

Throughout the centuries western man has
constantly adjusted his life style in response
to the challenge of his times. In the process
he has created many government forms,
social structures, interpretations of man,
ideological systems, and modes of artistic
expression. The course examines these
creations and shows how the historian

analyzes the patterns of persistence and
change which they reflect. Period covered:
1648-the Present.

102 History Through Literature
3 hrs.

The written works of any age reveal the

moods, tensions, interests, outlook, tastes,

and problems of that period. This course
shows specifically how the effects of wars,
revolutions, depressions, machines, and
social conditions are reflected in novels and

other writings. How people have reacted to
their problems in the past will suggest how
we may deal with those of the present.
103 History and Current Events
3 hrs.

Public History Minor

The mass media supply modern man with

such a wealth of information on current

This minor is designed for students in
antropology, business, geography, public
administration, art history, and other areas

social, political, and economic developments

who wish an introduction to the fundamental

make well-considered choices. This course

aspects of public histdry. It is not a teaching
minor.

1. Required Courses
HIST 201

Historians in the Modern

World
HIST 210 United States to 1877

HIST 211
HIST 511

1 hr.
. . .3 hrs.

United States since 1877 .3 hrs.
Introduction to Archives . .3 hrs.

that confusion often results. Nevertheless the

citizen of a democratic state is expected to
will show what history can contribute to a
clearer and deeper understanding of great
contemporary problems such as the

relationship between the West and the Third
World, the balance of power between the

U.S., USSR., and China, the stabilization of

Europe, and the new ecological situation.


This course teaches writing in the context of University Intellectual Skills college-level writing course requirement. A survey of the historical professions and the academic preparation needed to enter them.

**204 Business History**

3 hrs.

This course will focus on business and business leaders as an integral part of society. Extensive use will be made of the case study method and business biography to explore questions of production, distribution, finance, management, and industrial and public relations in a variety of historical settings. The case study topics will cover the whole range of Western history with a special emphasis on the American experience, one which cannot be properly understood without taking business and its development into account.

**210 United States to 1877**

3 hrs.

This is an introductory course but not the traditional, narrative survey. Emphasis is placed upon basic intellectual, political, economic, and social influences that have shaped American life. Selected themes that reveal continuities in the American experience are used to demonstrate the American heritage.

**211 United States Since 1877**

3 hrs.

The story of how modern America was shaped with an emphasis upon the emergence of the United States as a world power and the consequences of this development. The focus is upon selected themes such as urbanization, industrialization, and reform that reveal continuities in the American experience. Particular attention is given to various attempts to interpret twentieth-century American development.

**275 Introduction to Canadian Studies**

3 hrs.

An interdisciplinary survey of contemporary Canada taught by a faculty team from various departments of the University.

**298 Directed Reading in History**

1-3 hrs.

Designed for students with special interests. Registration requires a minimum 2.6 GPA, sophomore standing, approval of the supervising faculty member and the Department Chairman. May be repeated to a maximum of 3 semester hours.

**North America**

**310 History of Michigan**

3 hrs.

The development of Michigan from a primitive wilderness to an industrial state, with emphasis on the relation of the history of the state to that of the nation.

**312 Representative Americans**

3 hrs.

An examination of important themes and movements in American history through the reading and discussion of the biographies of representative figures. The pattern of topics may vary from year to year, but the staples are Puritanism, the Founding Fathers, Jacksonian democracy, the Civil War, industrialization, Progressivism, the New Deal, and the Black Revolution.

**314 American History**

Fall

A survey of the Black American experience from African origins to the contemporary American scene. Although the changing cultural and historical framework will not be ignored, attention will center on what Black Americans did, said, and thought. Individual reading assignments on the lives of outstanding figures from Phillis Wheatley to Eldridge Cleaver will be utilized.

**315 Popular Art and Architecture in America**

3 hrs.

Introduction to popular themes in American history as shown in paintings, buildings, cartoons, and commercial art. While issues will vary, the topics will include the Middle Americans, the Environment, the Frontier, the City, and Industrialization. Extensive use will be made of local illustrations which could be adapted to elementary and secondary teaching.

**316 U.S. Economic History**

3 hrs.

A study of American economic growth and change from colonial beginnings to the present. Major topics or themes examined include the changing fortunes and significance of various socio-economic groups, the impact of technology and research, the growing role of government, and the causes and consequences of the revolutions in agriculture, transportation, and industry. Attention is given to the quantitative approach to the problem of generalization in economic history.

**317 The History of the United States Constitution**

3 hrs.

The Constitution is the Supreme Law of the land. But judges apply that law. Consequently, judges exercise far more power in the United States than in any other nation. How and why did this occur? And with what results, good and bad?

**319 America and War**

3 hrs.

The United States regards itself as a "peace-loving" nation. Yet it was born of war, has survived by war, and in modern times has been almost constantly at war. A knowledge of the military history of the United States is a key to understanding all of its history, both as it has unfolded and as it is unfolding.

**375 Canadian History**

3 hrs.

Canadian History is a survey of that country's past from the first explorations to the beginnings of the fur trade in the 16th century to the new nationalism of the 1860s. Special attention is given to the sources of Anglo-French development and the changing relationship with the United States.

**520 Colonial America**

3 hrs.

The American colonies as part of the British empire; their role in colonial political, social, and economic growth, and the economic causes of the end of the American Revolution.

**521 The Era of the American Revolution**

1763-1789

3 hrs.

The causes, development, nature, and consequences of the American Revolution. Emphasis is given to the factors which induced the British to alter existing relationships with the American colonies; and the reasons for, and the variety of American responses to, are examined. Efforts made by both British and American leaders to preserve the imperial connection are studied along with the gradual development of the American movement to independence. Military and diplomatic aspects of the Revolution are examined and an attempt is made to evaluate societal changes brought by American independence.

**522 The Age of Democracy and Expansion, 1789-1848**

3 hrs.

The United States is a democracy. Or is it? This course attempts to answer that question by examining the origin and development of American political institutions during a time that is much like our own—that is, a time of rapid changes and intense ideological, racial, international, sectional, and personal conflict.

**523 The American West**

3 hrs.

A study of the exploration, conquest, and occupation of the North American continent. Among the topics included are Indian relations, the fur trade, land disposition, the cattle frontier, the mining frontier, and problems of law and order.

**524 The Civil War and Reconstruction**

3 hrs.

Between 1861 and 1865 over 600,000 Americans died fighting each other. Why? And with what results? The answers to these questions do not simply illuminate the past; they also tell us much about the present—a present in which many of the basic factors which produced the Civil War are still operating.

**525 The Emergence of Modern America, 1877-1914**

3 hrs.

This course will focus on the causes and consequences of industrialization, urbanization, progressivism, and the concurrent revolutions in agriculture, transportation, and communications. Attention will also be given to changing attitudes and values, the problems of generalization, and the anonymous American.

**526 United States, 1914-1945**

3 hrs.

This course deals with four periods of recent American history: the Great War and Peace Conference of 1914-1919, the 1920s, the Depression, and American participation in World War I. Focus is on major social, political and economic trends, problems and personalities of the era, and the vastly changed position of the United States in world affairs.

**527 United States Since 1945**

3 hrs.

This course deals with the efforts of the nation, and groups within the nation, to cope with the enormous social, political, and economic problems of the decades after World War II. It traces the growth of American involvement in foreign affairs as a world power.

**576 History of United States Foreign Relations**

3 hrs.

While this course traces the full scope of American foreign relations, from the American Revolution to the present, it emphasizes diplomacy of the twentieth century. The course gives attention to major diplomatic problems, but it also considers such themes
as the effect of personality and politics on foreign policy, and the various "schools" of diplomatic thought.

**Europe**

340 Tsarist Russia 3 hrs.
Rise and Fall of Novgorod-Kiev, the Emergence of Muscovy, and the Rise of Imperial Russia through the reign of Alexander III, with special emphasis upon the social evolution of the Russian peasants, the rise and decline of the nobility, the symbolic nature of Church and state, and the emergence of a unique Russian Civilization.

341 The Soviet Union 3 hrs.
This survey course is designed to give the student a knowledge and appreciation of the various facets of the history of the Union of Soviet Socialist Republics from 1917 to the present. Aspects of the U.S.S.R. that are studied include: Marxian Leninism, the Communist Party, the Government, foreign policy, planned economy, the systems of health and education, and contemporary art, literature, and music.

342 Great Britain and the British Empire 3 hrs.
A general survey of British history beginning with the building of modern Britain in the 16th Century and including the emergence of the empire, the birth pangs of representative government, the civil war, restoration and revolution during the 17th Century, the establishment of political stability, the economic revolution, and the loss of an empire in the 18th Century, and the problems created by the French Revolution and Napoleon in early 19th Century.

343 Great Britain and the British Commonwealth 3 hrs.
A summary of British history in recent times from the age of reform and the era of world supremacy during the reign of Victoria in the 19th Century through the struggle for freedom in two world wars, emergence of the Commonwealth, the problems between the wars, socialist revolution and its consequence in the 20th Century.

344 Modern Eastern Europe 3 hrs.
Life and death of the ancient Bulgarian, Serbian, and Hungarian Empires, and the struggle of Balkan and South-East European nations against the Ottoman, Hapsburg, Tsarist, and Soviet Empires, with special emphasis upon the periods of national independence.

345 The Baltic Region 3 hrs.
An examination of the themes and movements that formed the national life histories of Finland, Estonia, Latvia, and Lithuania, as well as the centuries-long struggle between Russia's drive toward the domination of the Baltic Area and the development of distinct national consciousness on the part of the Baltic peoples.

346 Modern Germany 3 hrs.
German history since the 18th Century raises questions of wide human concern. What is a country? What is treason? What makes for a good life? Why work hard at anything? How free is anyone to think or to act? The search for answers has evoked further questions as to the nature of freedom, bigotry, conditioned behavior, dissent, defeat, genius, creativity, Fascism, Socialism, Communism, Democracy, militarism, and much more.

349 The Ancient Near East 3 hrs.
The cradles of civilization in ancient Mesopotamia and Egypt are explored in this course. An introduction to archaeology and early society is followed by a survey of the ancient Sumerian, Babylonian, Egyptian, Hittite, Phoenician and Hebrew cultures, as well as the Assyrian and Persian imperialism that replaced them.

350 Ancient Greece 3 hrs.
This course surveys the origin of the ancient Greeks, their role in the Aegean civilization of Crete and Troy, the Hellenic Age, and the development of the polis. Special emphasis is placed on the contrasting city-states of Athens and Sparta, as well as the unique achievements and cultural legacy of Hellenism. The course closes with the decline of Greece, Alexander the Great, and the Hellenistic world.

351 Ancient Rome 3 hrs.
This course surveys the early Italic, Etruscan, and Greek cultures of ancient Italy prior to the founding of Rome. The rise of the Roman Republic; the conquest of the Mediterranean, and the civil wars come next into focus, with a final segment devoted to the Roman Empire, its cultural achievements, and its ultimate decline and fall.

352 Early Medieval History 3 hrs.
The genesis of modern European civilization from the fall of Rome through the twelfth century. We will study the legacy of early Christianity, classical culture, and the Germanic peoples of the West. We will also consider how these elements were synthesized in the time of Charlemagne and modified in the age of feudalism. All this will lead up to a study of the medieval Reformation and the twelfth-century Renaissances. Although political and economic questions will be considered, the main emphasis will be on the contributions of medieval thought, life, and culture to the modern world.

353 Later Medieval History 3 hrs.
The flowering, then the break-up of medieval unity. We will study the peculiar relationship between church and state in the thirteenth century, the thought of that century which contributed so much to the modern world in the areas of science, art, religion, and university life. We will look at medieval society with an eye to its impact on modern thought, from the notion of progress to attitudes toward dissidents. We will also briefly consider how medieval attitudes changed during the crisis of the Fourteenth Century, the Renaissance, and the Reformations.

501 Studies in European History 3 hrs.
The topics will 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 be chosen from those areas of European history which are not adequately covered by regularly scheduled courses.

534 Medieval France 3 hrs.
A study of the formation of the French people and nation during the thousand years which followed the fall of the Roman Empire in the 5th century A.D. Threatening this from process were the disruptive forces of provincialism and invasion by foreigners. Contributing to its success were the growth of a unified church, a national monarchy, the expansion of a vigorous rural and urban economy, and the development of a national language and literature.

535 Medieval England 3 hrs.
The story of growth of the English people from scattered tribes of Anglo-Saxon invaders in the 5th century into one of the most highly organized European nations by the 14th century. Basic to this growth were the creation of a powerful kingship based on a common law and Parliament, the establishment of a vigorous national church, the prosperity of countryside and town, and the development of national language and literature.

538 Victorian England: The Era of the Middle Class 3 hrs.
A look at the years of Victoria's long reign as Great Britain attempted to solve the problems caused by the French and Economic Revolutions through parliamentary reform and additional democracy, resulting in the transition from a rural to an urban society, the rise of the middle class to a position of dominance, and the emergence of Britain as the greatest industrial nation and the most powerful empire in the world.

539 Contemporary Britain: The Era of the Common Man 3 hrs.
An exploration of the history of Great Britain during the crucial years of challenge to its position as a world power, to its position as head of the empire, to its democratic monarchy, and consideration of the ways in which these challenges were met, two world wars successfully fought, a Commonwealth organized with all members equal among equals, and a state responsible for the welfare of all subjects of the Crown from the cradle to the grave established in the socialist revolution after World War II.

551 Imperial Rome (The First Century) 3 hrs.
A study in depth of Roman politics and culture from the close of the Republic through the reigns of the emperors Augustus, Tiberius, Caligula, Claudius, and Nero. Emphasis will be placed on use of original sources in shaping the history of the century 30 B.C. to 70 A.D.

552 The Medieval Church 3 hrs.
Christianity is the most obvious and perhaps, the most important element in early Western culture. In this course we are not so much interested in the Church as an institution as in the growth of Western culture in the age from the time of Jesus to that of Luther—in which Christian values were so important in everyday life. Among the topics we will consider are the impact of Classical and Germanic cultures on the Church, the church and feudalism, church-state relations, the rise and fall of papal theocracy, scholasticism, and mysticism. The emphasis throughout will be on topics most important for the understanding of our own values and society.
Life in the Middle Ages
3 hrs.
This course seeks to capture the reality of everyday life for the three main groups of lay people in medieval society, peasants, nobles, and townspeople, by studying members of each of those groups from the following viewpoints: (1) the ways in which they made a living, i.e., their work, the way it was organized, as for instance in the manor or the guild, and the methods, techniques, and equipment available to them; (2) the ways in which they spent their leisure time; (3) their standard of living as measured by their food, clothing, and other material possessions; (4) the social groups of which they were members and which gave meaning to their lives such as the family, the local community, and their social class; (5) their beliefs, values, and general outlook with special emphasis on the consequences of widespread illiteracy—the course will not discuss the culture of the educated elite such as in medieval philosophy and theology, and finally (6) their normal life cycle from childhood to old age looking at decisive events such as marriage, the birth of children, and death, and giving special attention to the high birth and death rates and low life expectancy, and their causes and consequences.

The Renaissance
3 hrs.
Between 1300 and 1517 great changes in European life were brought about by the catastrophic Black Death, the activities of merchant venturers, the coming of gunpowder and diplomacy, the state as a new form of life as well as by new ideas about humanity, God, and the universe and by the geniuses of the brilliant Italian Renaissance (Petrarch, Goiito, Michelangelo, Leonardo da Vinci, and others).

The Reformation
3 hrs.
After 1517 the Western church broke apart and with it vanished the last remainder of European unity. Luther, Calvin, and Zwingli reshaped religious thought. Regional churches appeared. The Roman Catholic Church underwent a renewal. All of that was accompanied by bitter religious wars but also by early traces of the sciences, visionary social schemes, and a feverish artistic activity.

The Age of Enlightenment
3 hrs.
A wide-ranging study of a creative period during which many modern institutions and values took form: social structure and economic development; domestic politics and international relations; currents in religion and the arts.

The French Revolution and Napoleon
3 hrs.
Theories respecting the French and related revolutions, and the nature of revolution and of the revolutionary psychology, the 18th century background; the moderate and radical phases of the Revolution proper; the rise and fall of the Napoleonic Empire.

Nineteenth Century Europe
3 hrs.
A study of the revolutionary currents pulsating through Europe in the 19th century, of the conflicts they engendered, and the profound changes they wrought.

Hitler’s Europe: 1914-1945
3 hrs.
The first modern generation of Europe is associated with an era of unprecedented violence. The course is concerned with the experiences of people and the events of states that raise questions as to the dynamics of revolution, hate, radicalism, propaganda, optimism, wars, economic ambitions, progress, and murder.

Europe Since 1945
3 hrs.
The recovery of Europe from World War II; the movement toward European unity; the defense of Europe; and the role of Europe in the international community.

The Soviet Union in World Affairs
3 hrs.
Consideration is given to the various factors constituting the background necessary for the appreciation of the role of the Union of Soviet Socialist Republics in world affairs from 1917 to the present time. This includes a study of the geographical, ideological, political, economic, military, social, and human aspects of Soviet foreign policy. The nature of Soviet foreign policy as affected by national and international events during the leadership of Lenin, Stalin, Khrushchev, and Brezhnev-Kosygin is studied.

Non-Western World
3 hrs.

History of Latin America
3 hrs.
A survey is undertaken of the historical development of the Latin American region from its pre-Columbian Indian and Iberian ancestry to its contemporary expression in national entities. Attention is given to people and motives as well as institutions and attitudes insofar as each of them determined the character of a given epoch and contributed to the pattern of overall development.

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 forces shaping the modern Middle East, including Arab nationalism, Zionism, and colonialism.

Studies in Non-Western History
3 hrs.
The topics will 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 be chosen from those areas of African, Latin American, and Asian History which are not adequately covered by regularly scheduled courses.

Modern China
3 hrs.
A study of the rise of Chinese nationalism; the revolutionary movement of the Nationalists: the Kuomintang rule; the Japanese aggression in China; the rise of communism and Mao Ts-tung; the Great Leap Forward and Cultural Revolution in Communist China.

Modern Japan
3 hrs.
A study of the growth of nationalism, colonialism, militarism, and imperialism in Japan, international relations of Japan; the fall and the Allied Occupation and reconstruction; Japan’s new role in the world.

Modern Korea
3 hrs.
A study of the decline of the Yi dynasty; Korea’s struggle against foreign encroachment; the era of Japanese colonial rule; the liberation of Korea; and establishment of two Koreas.

Mexico: The Building of a Nation
3 hrs.
A review of the 19th century gropings toward national unity and identity, and of the 20th century era of violent revolutionary paroxysm and post-revolutionary ordered development in the Latin American nation which has impinged most immediately and continuously on the conscious awareness of the United States.

General History
300 Issues in History
1-3 hrs.
Variable topics in historical studies including problems in applications, public historical awareness, local history, and historical analysis of issues in the contemporary world. Repeatable for separate credit so long as the topic varies. Consult Schedule of Classes for topics.

Law and Justice in Western History
3 hrs.
The theorist who devises the ritual of the law, the advocate who argues it, and the judge who pronounces it; the philosopher who examines ethical principle and the moralist who expresses it; the investigator of crime, the criminal, and the punisher; the ordinary person who is sustained, ennobled, abandoned or oppressed by the moral customs of his fellows—all are familiar figures in any organized society, and their activities and the manner in which they interact help establish the tone and quality of life of that society. The course observes and analyzes these activities on a comparative basis over the centuries of Western history.
302 History of Medicine and Medical Care 3 hrs.
A study of the development of medicine throughout history. Medicine will be covered as (1) a science, (2) a healing agency, and (3) a social institution. Topics under (1) will include Near Eastern medicine, Herophilus, Hellenistic medicine, medical science at Alexandria, Galen and Greek medicine at Rome, the transmission of Greek medicine through the Arabic and Byzantine cultures, medical theory and practice in the Middle Ages, the Renaissance recovery of ancient Greek medical writing, emergence of modern medical concepts, specifically the emergence of the cell theory and cellular pathology, the germ theory of disease, the rise of bacteriology and immunology. (2) will deal with the development of methods of diagnosis, of treatment, and of hospitals, and the evolution of the nursing profession. (3) will show the changing role of medical experts in different cultures, the types of medical education in the past, the development of medical social work as well as of organization and social role of medical research.

303 Women in the Western World 3 hrs.
This course is designed to explore the condition of women in various periods of the history of the World. It will be given to women's roles and status in each period in order to come to some conclusions about women's contributions to Western history and culture.

306 Main Currents of Western Thought 3 hrs.
This course treats the ideas and values which have shaped Western life since the ancient world to today. It investigates the origin of ideas, their meaning, and their impact on human life. Groups of interlocking ideas are shown to form currents of thought which have shaped all of Western man's activities. Objects of study are: The Judeo-Christian concepts, the Greek philosophical revolution, the medieval synthesis; the Humanist Renaissance recovery of ancient Greek medical writing, emergence of modern medical concepts, specifically the emergence of the cell theory and cellular pathology, the germ theory of disease, the rise of bacteriology and immunology; (2) will deal with the development of methods of diagnosis, of treatment, and of hospitals, and the evolution of the nursing profession. (3) will show the changing role of medical experts in different cultures, the types of medical education in the past, the development of medical social work as well as of organization and social role of medical research.

320 History of War 3 hrs.
The history of war from the age of Louis XIV to the era of the World Wars. An examination of the evolution of war and the role of conflict in the international relations.

350 Problems in History 1-3 hrs.
Variable topics in historical studies including problems in application, public historical awareness, local history, and historical analysis of issues in the contemporary world. Repeatable for separate credit so long as the topic varies. Consult Schedule of Classes for topics.

579 War in the Modern World 3 hrs.
Select topics in modern war and current military developments. Topics for each semester will appear in the Schedule of Classes. The course may be repeated for separate credit as long as the topic varies.

Theory and Practice

390 Introduction to the Study of History 2 hrs.
Through the ages man has asked why heroes, dynasties, and empires rise and fall, revolutions occur, populations grow and recede, and ever new ways have been devised to "make a living." Man has tried hard to find order and meaning in the maze of events. This course deals with the many human attempts first to reconstruct what happened and then with the interpretations given to make sense of the past.

392 Great Historians 3 hrs.
Historical writings arise from a curiosity about the human condition. Can a person do good? What is the source of evil in life? What stresses to people in social situations? Does a person make his/her own fate and is it deserved? Historical writings suggest the problems in any search for truth, its description, and its evaluation. The course includes a survey of historical writings and an opportunity to read from within their wide variety.

505 Local and Regional History 3 hrs.
Studies of small areas in great detail, pursued by interested laymen as well as professional historians, frequently precede, modify, or augment historical studies of wider scope. The local historian relies almost exclusively on primary sources: archives and manuscript collections, oral history, genealogy, records of local government units, and so on. This course is an introduction to the specialized techniques and sources of local history, how they may be located and exploited for a variety of research objectives.

511 Introduction to Archives 3 hrs.
Theory, techniques, and practice in the development and administration of archives and archival materials.

512 Introduction to Museum Studies 3 hrs.
A survey course dealing with the history, philosophy, organization, and practice of museums. The course will examine the organization and structure of various types of museums, and will cover such topics as collecting theory, conservations and security, care of collections, display techniques, historic preservation, registration and cataloging, and museum ethics.

513 Historic Preservation 3 hrs.
Examination of problems in developing historic sites and districts. Topics include documenting historic sites, registration procedures, preservation law, funding sources, history of the preservation movement, social issues in urban rehabilitation, public, private and citizen interaction.

590 Current Developments in Historical Theory and Practice 2 hrs.
This course surveys the major theoretical, technical, and interpretive issues in the field of history as they emerge from ongoing research. It assesses the impact of such disciplines as archaeology, geography, computer science, environmental studies, and psychology upon history, the development of new techniques for evaluating all forms of historical documentation and data, and the major historical interpretations currently before the academic world and the public.

593 Philosophy of History 2 hrs.
What do all the rules, battles, catastrophes, cultures, clones, and defeats add up to? Is there a goal toward which all of history marches or is there no rhyme or reason to the collective human experience? Thinkers such as Thucydides, St. Augustine, Vico, Hegel, Marx, Spengler, Toynbee and the existentialists gave different answers to these questions.

Other Courses

470 Senior Thesis 2-3 hrs.
Written preparation and defense of a supervised research project. The thesis must be supervised and approved by at least two faculty members. Two copies of the final draft must be filed with the Department of History. Registration requires junior standing, a declared major in History, and approval of the supervising faculty members and the Undergraduate Adviser.

598 Independent Reading in History 3 hrs.
Research supervised by a faculty member. Registration requires a minimum of 3.0 GPA, junior standing, a declared major in History, and a research proposal developed by the student and the supervising faculty member. Registration also requires approval by the Undergraduate Adviser and the Department Chairmen.

599 Professional and Field Experience Variable Credit
Upon prior approval by the Department of History students may earn credit through appropriate professional experiences such as museum internships, work in archives and manuscript collection, historic preservation advocacy, historical editing, or other meaningful activities. Graded on a credit/no credit basis.

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

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

International and Area Studies Program
See "Interdisciplinary Programs" in the College of Arts and Sciences.
Foreign Language in English Translation

Courses described in italics are approved for General Education.

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
3 hrs.

The content of the course will stress the observation and experience of another society and culture as depicted in some of the great writings of foreign literature through reading in English. Universal themes about the human condition and insight into their treatment by representative native writers will be presented. The course will consider the differences in treatment of individuals and society and will offer a comparison to contemporary life through various literary works and the social-historical background for each of the selections.

This course does not apply toward a major or minor in French, German, or Spanish, but it may apply toward a major or minor in Latin or a minor in Russian. The course may be taken in more than one language area.

Representative topics which may be treated in this course include:

Classical Drama in English Translation
Reading and analysis of selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes as dramas and as expression of the Greek view of life. Some attention to Roman Drama.

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 Borchert.

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, Turgeniev, Dostoevski, Tolstoy, Gorki, Sholokhov, Pasternak, and Solzhenitsyn.

Spanish-American Literature in English Translation
Selected prose and poetry from late 19th century (Ruben Dano and Modernismo) to the contemporary writers of Hispanic America.

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

**Classics Courses in English**

(Courses described in italics are approved for General Education.) All courses listed below will be taught entirely in English, have no foreign language requirement, and are open to any student.

**250 (Classics) Ancient-Modern Studies**

3 hrs. The course is designed to examine the Greco-Roman world and its influence on the modern world in as many perspectives as possible. Examples: the rebel in society, concepts of justice, ancient literary criticism, ancient and modern technology. Topics vary and will be announced each year. May be repeated for credit with different topics.

**350 (Classics) Classical Art and Architecture of the Aegean World**

3 hrs. A course dealing with the classic forms of art and architecture as they developed from the Cretan civilization to the height of Greek culture and as they were reflected in later Roman civilization. No prerequisite.

**450 (Classics) 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.

**Language Teaching Courses**

**558 Modern Language Instruction (in French, German, Spanish or other language)**

3 hrs. Required for modern language teaching majors and minors (but the hours may not be counted toward the minor). 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. Preferably, students should complete this course before beginning directed teaching.

This course will be offered regularly.

The comparable methods course for Latin, 557 Teaching of Latin, is described under Classical Studies.

**Course Descriptions**

(Courses described in italics are approved for General Education.)

**Classical Studies**

**Greek (GREK)**

**100 Basic Greek**

4 hrs. Fundamentals of classical Greek. readings emphasize Greek thought, culture, and civilization.

**101 Basic Greek**

4 hrs. Continuation of 100. Prerequisite: GREK 100 or equivalent.

**Latin (LAT)**

**100 Basic Latin**

4 hrs. Fundamentals of Latin, readings emphasize Roman thought, culture, and civilization.

**101 Basic Latin**

4 hrs. Continuation of 100. Prerequisite: LAT 100 or equivalent.

**200 Vergil**

4 hrs. Intermediate Latin. Development in use of fundamental language skills and the understanding and appreciation of the thought and style of the Aeneid. Prerequisite: LAT 101 or two years of high school Latin.

**201 Lyric Poetry**

4 hrs. Intermediate Latin. Readings from Latin lyric poems, with special attention to development in use of fundamental language skills, prosody, literary style and appreciation. Prerequisite: LAT 101 or two years of high school Latin.

**320 French Phonetics**

4 hrs. Exercises to develop ease and accuracy in pronunciation. Prerequisite: FREN 200 or equivalent.

**321 French Composition**

4 hrs. A course dealing with the classic forms of art and architecture as they developed from the Cretan civilization to the height of Greek culture and as they were reflected in later Roman civilization. No prerequisite.

**329 Introduction to French Poetry and Drama**

3 hrs. A close examination of selected French prose works, to include the novel, the short story and the essay. Prerequisites: FREN 316 and 317 or permission of instructor.

**330 French Civilization**

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 330 may be taken concurrently with FREN 201.)

**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 a "C" card. No oral work.

**450 (Classics) 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.

**459 Special Topics**

This course will be offered regularly.}

**Latin (LAT)**

**100 Basic Latin**

4 hrs. Fundamentals of Latin, readings emphasize Roman thought, culture, and civilization.

**101 Basic Latin**

4 hrs. Continuation of 100. Prerequisite: LAT 100 or equivalent.

**200 Vergil**

4 hrs. Intermediate Latin. Development in use of fundamental language skills and the understanding and appreciation of the thought and style of the Aeneid. Prerequisite: LAT 101 or two years of high school Latin.

**201 Lyric Poetry**

4 hrs. Intermediate Latin. Readings from Latin lyric poems, with special attention to development in use of fundamental language skills, prosody, literary style and appreciation. Prerequisite: LAT 101 or two years of high school Latin.

**320 Latin Literature**

4 hrs. Selections from Latin prose and poetry from the beginning of Latin literature through the Silver Age. Prerequisite: LAT 200 or 201 or equivalent.

**550 Independent Study in Latin**

1-3 hrs. Directed, individual study of a specific topic or genre in a Latin literary or linguistic area, e.g. biography, bucolic poetry, comedy, history, or satire. Departmental approval required for admission. Prerequisite: a minimum grade point average of 3.0 in the major.

**557 Teaching of Latin**


**560 Medieval Latin**

3 hrs. A study of the period 500-1500 A.D., when Classical Latin was blending into the new vernaculars to form eventual Romance Languages. Prose and poetic readings include a variety of themes reflecting the intellectual, cultural and religious thinking of the times. Prerequisite: One of LAT 200, 201, 324 or equivalent or permission of instructor.

**French (FREN)**

**100 Basic French**


**101 Basic French**

4 hrs. Continuation of 100. Prerequisite: FREN 100 or equivalent.

**104 Mini-French for Fashion Merchandising Majors**

1 hr. This course is specifically designed for students with careers in fashion merchandising and will include exposure to relevant fashion terminology, cultural insights, and practice in written and spoken French.

**200 Intermediate French**

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.

**201 Intermediate French**

4 hrs. The continued development of spoken and written expression in the French language through readings and discussions of civilization and culture text/ur-s/Prerequisite: FREN 200 or equivalent.

**316 French Composition**

4 hrs. Emphasis upon increasing the student's command of written French. Prerequisite: FREN 201 or equivalent.

**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.

**320 French Phonetics**

4 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.)

**322 French Civilization**

3 hrs. A study of selected aspects of French life and culture and their historical settings. Prerequisite: FREN 201 or equivalent.

**328 Introduction to French Prose**

3 hrs. A close examination of selected French prose works, to include the novel, the short story and the essay. Prerequisites: FREN 316 and 317 or permission of instructor.

**329 Introduction to French Poetry and Drama**

3 hrs. A close examination of selected French poetry and dramatic literature. Prerequisites: FREN 316 and 317 or permission of instructor.

**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 France with full explanations by an instructor of all points visited. Each student submits a term paper investigating one phase of his/her experience. Prerequisite: FREN 200 or equivalent or permission of instructor.

**Open to Upperclass Students**

**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 a “C” card. No oral work.
401 Intermediate French for Reading Proficiency
4 hrs.
Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student’s major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Undergraduates must secure a “C” card.

550 Independent Study in French
1-3 hrs.
Directed individual study of a specific topic in a French literary or linguistic area. Departmental approval required for admission. Prerequisite: One 500-level course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

551 Advanced French Grammar and Composition
3 hrs.
Intensive review of French structure and practice in composition. Prerequisite: FREN 316 and 317 or equivalent.

552 Advanced French Conversation
3 hrs.
Intensive practice with spoken French. Prerequisite: FREN 316 and 317 or equivalent.

560 Studies in French 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: FREN 316, 317, 329 and 329 or permission of instructor.

Representative topics which may be treated in this area include:
- Medieval Literature—Outstanding works from various genres of the medieval period, such as chansons de geste, romans courtois, didactic works, farces, and poetry.
- Renaissance Literature—Outstanding works from the period, to include Montaigne, Rabelais, and the Pleiade.
- Seventeenth Century Literature—Literary trends of the seventeenth century to include Corneille, Moliere, Racine, Pascal, and La Rochefoucauld.
- Eighteenth Century Literature—Literature and philosophies of the French Enlightenment, to include major works by Voltaire, Rousseau, Diderot and Montesquieu.
- Nineteenth Century Literature—Studies in realism and naturalism.
- Twentieth Century Literature—Studies in the contemporary novel.

Twentieth Century Literature—Studies in the modern French theatre.

German (GER)

100 Basic German
4 hrs.
Fundamentals of German with audiolingual emphasis. German cultural readings. Does not count toward a major or a minor.

101 Basic German
4 hrs.
Continuation of 100. Prerequisite: GER 100 or equivalent. Does not count toward a major or a minor.

200 Intermediate German
4 hrs.
The development of spoken and written expression in the German language with an emphasis on grammar review. Prerequisite: GER 101 or two years of high school German, or equivalent.

201 Intermediate German
4 hrs.
The continued development of spoken and written expression in the German language through readings and discussions of civilization and culture materials. Prerequisite: GER 200 or equivalent.

316 German Composition
3 hrs.
Emphasis upon increasing the student’s command of written German. Prerequisite: GER 201 or equivalent. (GER 316 may be taken concurrently with GER 201.)

317 German Conversation
3 hrs.
Emphasis upon increasing the student’s command of spoken German. Prerequisite: GER 201 or equivalent. (GER 317 may be taken concurrently with GER 201.)

322 German Life and Culture
3 hrs.
Investigates cultural aspects necessary for an understanding of Germany. Historic, geographic, social and religious factors are treated. Prerequisites: GER 316 and 317. (GER 316 and 317 may be taken concurrently.)

325 Introduction to the Study of German Literature
3 hrs.
An appreciation of German literature through reading and critical interpretation of selected works of various literary types. Prerequisites: GER 316 and 317 or equivalent. (GER 316 and 317 may be taken concurrently.)

Open to Advanced Undergraduates

400 Elementary German for Reading Proficiency
4 hrs.
Intensive grammar and elementary reading for translation and research purposes. The course is primarily for the graduate student who has had little or no study in the language. However, undergraduates who desire a thorough reading knowledge may also apply. Undergraduates must secure a “C” card. No oral work.

401 Intermediate German for Reading Proficiency
4 hrs.
Prerequisite: 400 or equivalent. Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to student’s major field. Completion of 401 with a minimum grade of B constitutes graduate proficiency in the language. Undergraduates must secure a “C” card.

528 Survey of German Literature
3 hrs.
A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: GER 316, 317, and 325 or equivalent.

529 Survey of German Literature
3 hrs.
A comprehensive study of German literature from German Realism to the present. Prerequisites: GER 316, 317, and 325 or equivalent.

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. Prerequisite: One 500-level course in the major; a minimum grade point average of 3.0 in the major. Not open to minors.

552 Advanced German Composition
3 hrs.
Intensive practice in composition and stylistics directed towards appreciation of literary and other written expression in German with work in free composition at an advanced level. Prerequisites: GER 316 and 317.

553 Advanced German Conversation
3 hrs.
Intensive training in conversational German with emphasis on colloquial language and idiom. Prerequisites: GER 316 and 317.

559 History of the German Language
3 hrs.
Survey of the development. Prerequisite: 6 hours of 300-level German or above.

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, and 325 or equivalent. 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 Klaest, Grillparzer, Hebbel, and Hauptmann.
- Twentieth Century Drama—Representative selections.

Greek
(See Classical Studies.)

Latin
(See Classical Studies.)

Russian (RUSS)

100 Basic Russian
4 hrs.
Fundamentals of Russian with audiolingual emphasis.

101 Basic Russian
4 hrs.
Continuation of RUSS 100. Prerequisite: RUSS 100 or equivalent.

102 Russian for Travel
2 hrs.
This course is specifically designed for students, faculty, and individuals outside the University community who wish to acquire the reading and basic communication skills necessary to derive the fullest possible benefit from a trip to the Soviet Union and to permit free movement within a Russian city without a guide.

104 Scientific Russian
4 hrs.
Basic grammar and practice in translation of scientific and technical material from Russian to English. Course is intended for undergraduates who are declared majors in physical or social sciences and desire a knowledge of Russian for reading purposes only. Course is open on a non-credit basis to graduate students and interested faculty and staff.
Open to Advanced Undergraduates

550 Independent Study in Spanish
1-3 hrs.
Directed individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission. Prerequisite: One 500-level course.

552 Advanced Russian Composition and Conversation
3 hrs.
Practice in composition and stylistics directed towards a command of literary and other written expression in Russian combined with training in conversational Russian with an emphasis on the colloquial idiom. Prerequisites: 316, 317, and 328.

556 Studies in Russian Literature
3 hrs.
Topic varies according to genre, author, and period and will be announced. Each of these courses carries separate credit, although all are listed under 550. Thus a student may take any or all of the offerings at various times. Prerequisites: 316, 317, 328, 375.

Topics treated in this area include but are not restricted to:
- The Poetry of Pushkin: Emphasis on the tales and Byronic narrative.
- Classic Russian Short Stories: Emphasis on the works of Turgenev, Gogol, Tolstoy, and Leskov.
- Modern Russian Poetry: Form, content and history.

Spanish (SPAN)

101 Basic Spanish
4 hrs.
Fundamentals of Spanish with audiolingual emphasis. 101

103 Intermediate Spanish
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.

201 Intermediate Spanish
4 hrs.
The continued development of spoken and written expression in the Spanish language through readings and discussions of culture and literature. Prerequisite: SPAN 200 or equivalent.

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.)

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.)

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).

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).

325 Introduction to the Study of Spanish Literature
3 hrs.
An appreciation of Spanish literature through reading and critical interpretation of selected works of various literary types. Prerequisites: SPAN 316 and 317 or equivalent.

510 Studies in Hispanic Culture
3 hrs.
An intensive study of various aspects of Spanish and Spanish American culture. Emphasis is on cultural understanding as an avenue to increased proficiency in the Spanish language. Since specific topics will vary each semester, this course may be repeated for credit. Prerequisites: SPAN 316, 317, or either 322 or 323, plus one additional course at the 300 or 500 level.

526 Survey of Spanish Literature to the 18th Century
3 hrs.
A survey of Spanish literature from its origin to, and including, the eighteenth century. Prerequisites: SPAN 316, 317 and 325.

527 Survey of Spanish Literature from the 18th Century to the Present
3 hrs.
A survey of Spanish literature from the eighteenth century to the present. Prerequisites: SPAN 316, 317 and 325.

528 Survey of Spanish American Literature to Modernismo
3 hrs.
A survey of Spanish American literature from its origin to the era of Modernismo (late 19th century). Prerequisites: SPAN 316, 317, and 325.

529 Survey of Spanish American Literature from Modernismo to the Present
3 hrs.
A survey of Spanish American literature from late 19th century to the present. Prerequisites: SPAN 316, 317, and 325.

LANGUAGES AND LINGUISTICS 99

Open to Advanced Undergraduates

550 Independent Study in Spanish
1-3 hrs.
Directed, individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission. Prerequisite: One 500-level literature course in the major, a minimum grade point average of 3.0 in the major. Not open to minors.

552 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 of 526, 527, 528, or 529 are recommended.

553 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 of 526, 527, 528, or 529 are recommended.

560 Studies in Spanish Literatures
3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: SPAN 510. 3 hours 526, 527, 528, 529 or departmental permission. Representative topics may be treated in this area include:
- Cervantes—Don Quixote and other works of Cervantes together with his life and thought
- Seventeenth century theater—Main works of Lope de Vega through Calderon de la Barca
- Nineteenth century—The Romantic Movement
- Nineteenth century novel—Development of the regional novel from Ferran Caballerio through Blasco Ibanez
- Generation of ‘98—Thought and works of typical representatives such as Unamuno, Azorin, Baroja, and A. Sabato
- Contemporary theater—Evolution and analysis of the characteristics
- Spanish-American short story—Significant short stories along with the cultural and social background
- Contemporary Spanish-American novel—The new Spanish—American novel along with the cultural and social background

Linguistics and Critical Languages

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.

The Linguistics program at Western Michigan University is responsible for maintaining an undergraduate major and minor program in general linguistics, for teaching English as a second language to foreign students at the University, and for offering up to six semesters of study in a number of "critical" (neglected) languages.
The linguistics major is intended either as a second major for undergraduates with a major in another department or as a first major for those who expect to pursue a career in linguistics. The major program requires 24 hours of credit in linguistics courses and up to 6 hours in cognate courses. One college year of a foreign language, or its equivalent, is required.

The linguistics minor is intended as a supporting minor for undergraduates with a major in another related department. Its purpose is to complement and strengthen the student's major concentration. The minor program requires completion of 20 hours of credit in the five undergraduate core courses: 105, 321, 331, 421, 597.

Both majors and minors are required to consult with the adviser, 410 Sprau Tower, to receive a signed recommendation for their program. The adviser is authorized to grant additional credit in the five undergraduate core courses: 105, 321, 331, 421, 597.

Linguistics is suggested as a supporting major or minor for majors in anthropology, communication arts and sciences, English, French, German, philosophy, psychology, sociology, Spanish, and speech pathology and audiology. Linguistics has been approved by the State Board of Education as a minor or second major in the secondary education curriculum, as a second major in the junior high school curriculum, and as a minor in the elementary curriculum.

A critical language minor is available for those undergraduates who wish to specialize in one of a limited number of neglected languages. This minor is open only to those persons who are not in an Education program. Interested students must consult with the critical languages supervisor to determine which languages are eligible and to receive a signed recommendation for their program.

### Programs

#### Linguistics Major and Minor (LING)

<table>
<thead>
<tr>
<th>Program</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>I. Core Courses in Linguistics</td>
<td></td>
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<tr>
<td>(20 hrs. required for both majors and minors.)</td>
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<tr>
<td>Linguistics Hrs.</td>
<td></td>
</tr>
<tr>
<td>105 The Nature of Language</td>
<td>4</td>
</tr>
<tr>
<td>321 Phonology and Morphology</td>
<td>4</td>
</tr>
<tr>
<td>331 Syntax and Semantics</td>
<td>4</td>
</tr>
<tr>
<td>421 Development of Language History and Dialects</td>
<td>4</td>
</tr>
<tr>
<td>597 Seminar in Linguistics</td>
<td>4</td>
</tr>
<tr>
<td>II. Elective Courses in Linguistics ( Majors must take at least 4 hrs.)</td>
<td></td>
</tr>
<tr>
<td>Linguistics Hrs.</td>
<td>24</td>
</tr>
<tr>
<td>100 Basic Critical Languages I</td>
<td>4</td>
</tr>
<tr>
<td>511 Methods of Teaching English as a Second Language</td>
<td>4</td>
</tr>
<tr>
<td>512 Principles of TESL</td>
<td>4</td>
</tr>
<tr>
<td>515 Methods of Teaching Critical Languages</td>
<td>2</td>
</tr>
<tr>
<td>540 Generative Grammar</td>
<td>4</td>
</tr>
<tr>
<td>551 Psycholinguistics</td>
<td>4</td>
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<tr>
<td>552 Sociolinguistics</td>
<td>4</td>
</tr>
</tbody>
</table>

| III. Cognate Courses in Other Departments ( Majors may take up to 6 hrs.) |      |
| Anthropology Hrs.                                                      | 3    |

### Critical Language Minor (CRI)

#### I. Introductory Linguistics Course

- To be taken during first year of minor.
- LING 105 The Nature of Language (4 hrs.)

#### II. Basic Courses

- Both in the given language.
- LING 100 Basic Critical Languages I (4 hrs.)
- LING 101 Basic Critical Languages II (4 hrs.)
- Prerequisite: 100.

#### III. Intermediate Courses

- Both in the given language.
- LING 200 Intermediate Critical Languages I (4 hrs.)
- LING 201 Intermediate Critical Languages II (4 hrs.)
- Prerequisite: 200.

#### IV. Literacy Courses

- Optional—see below.
- LING 315 Reading Critical Languages (4 hrs.)
- Prerequisite: 201.
- LING 316 Writing Critical Languages (4 hrs.)
- Prerequisite: 201.

### Admission to the Program

Undergraduate students (including linguistics majors and minors) may be admitted to the critical language minor at any level, provided that they are not in a teacher education curriculum and are not native, fluent, and literate speakers of the language.

### Eligible Languages

The eligibility of languages varies from year to year. Languages currently scheduled by the department in one of the five participating departments in the integrated language arts program are: Arabic, Chinese, French, German, Hebrew, Japanese, Spanish, and a second modern or classical language. Eligibility of others depends on available resources. Contact the critical languages supervisor in Linguistics for up-to-date information.

### Credit by Examination

Undergraduate students who feel that they possess the equivalent of 100, 101, 200, 201, 315, or 316 may 'comp out' of these courses for credit, provided that they pay the fees and pass an examination with a grade of 'C' or better.

### Integrated Language Arts Minor

The Department of Languages and Linguistics is one of five participating departments in the integrated language arts minor—a program designed particularly for those who are not native speakers of English and wish to pursue a career in teaching. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program, consult its listing under the 'Interdisciplinary Programs' section of the College of Arts and Sciences or its listing in the College of Education or the College of Health and Human Services.

### Course Descriptions

- **General Linguistics Courses**
  - 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.
  - 321 Phonology and Morphology (4 hrs.)
  - An introduction to the study of sound systems (phonology) and word systems (morphology) and to the principles and methods of their analysis and description. Prerequisite: One linguistically-related course.

- **500 Introduction to Linguistics** (4 hrs.)
  - An introduction to modern linguistic theory and to the application of that theory to linguistically-related disciplines.

- **511 Methods of Teaching English as a Second Language** (4 hrs.)
  - Study of the application of linguistics and other disciplines to the teaching of Standard American English to speakers of other languages, with emphasis on current methods and materials for instruction and testing. Course work will include tutorial experience.
512 Principles of Teaching English as a Second Language
4 hrs.
Study of the linguistic theory and historical development of the teaching of English to speakers of other languages, as well as an examination of second language acquisition and the various aspects of bilingualism. Prerequisite: an introductory course in linguistics.

515 Methods of Teaching Critical Languages
2 hrs.
Study of the application of linguistics to the teaching of one or more “critical” languages (e.g., Latvian, Hebrew, Japanese, Arabic, Korean, etc.). Emphasis will be on modern and traditional methods and materials for instruction and testing. Course work will include tutorial experience. May be repeated for credit for a different language. Prerequisite: LING 201 or equivalent.

540 Generative Grammar
4 hrs.
An examination of the theories of Transformational Grammar and Generative Semantics, and a study of their origins, development, modification, and applications. Prerequisite: LING 500 or equivalent.

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.

552 Sociolinguistics
4 hrs.
A systematic study of the linguistic correlates of social behavior and the influence of society on the nature of language.

597 Seminar in Linguistics—Variable Topics
2-4 hrs.
Each seminar will deal with a selected topic relating to language and/or linguistics. Since content will vary from semester to semester, students are advised to check course descriptions in the Department office. The Department will welcome suggestions for seminar topics from students. Prerequisite: major or minor status or permission of instructor.

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. Prerequisite: permission of instructor and chairperson.

English as a Second Language Courses (for foreign students)

111 Standard American English: Intermediate
4 hrs.
Intermediate-level instruction in oral and written Standard American English for speakers of other languages. An attempt will be made to provide individual tutoring where necessary. Credit/No Credit only.

112 Standard American English: Advanced
4 hrs.
Advanced-level instruction in oral and written Standard American English for speakers of other languages. A continuation of LING 111, with emphasis on advanced reading and writing skills. Prerequisite: LING 111 or equivalent. Credit/No credit only.

Critical Languages Courses

100 Basic Critical Languages I
4 hrs.
Study of a critical language at the elementary level with emphasis on conversation. The writing system will be introduced at an appropriate time, depending on the nature of the individual language.

101 Basic Critical Languages II
4 hrs.
Continuation of 100. Prerequisite: LING 100 or equivalent.

200 Intermediate Critical Languages I
4 hrs.
Continuation of LING 101, with greater attention to achieving self-reliance in conversation and to increasing reading and writing skills with the help of a dictionary. Prerequisite: LING 101 or equivalent.

201 Intermediate Critical Languages II
4 hrs.
Continuation of 200. Prerequisite: LING 200 or equivalent.

315 Reading Critical Languages
4 hrs.
Intensive practice in reading literature, newspapers, and other literary materials in the critical language, including sources from the student’s major field of study. Prerequisite: LING 201 or equivalent.

316 Writing Critical Languages
4 hrs.
Intensive practice in writing a critical language to improve the student’s ability to express himself/herself effectively and to develop an individual style of composition. Prerequisite: LING 201 or equivalent.

Latin
See “Languages and Linguistics” in the College of Arts and Sciences.

Linguistics
See “Languages and Linguistics” in the College of Arts and Sciences.

Mathematics (MATH)
James H. Powell, Chair
Yousef Alavi
Robert Bielek
Joseph F. Buckley
Dwayne Channell
Gary Chartrand
A. Bruce Clarke
Paul Eenigenburg
Linda Foster
Anthony Gioia
Donald Goldsmith
Christian Hirsch
Philip Hsieh
S. F. Kapoor
Robert Laing
Don R. Luck
Paul Lin
Joseph McCully
Joseph McKean
Ruth Meyer
J. Donald Nelson
John W. Petro
James Riley
Erik A. Schreiner
Robert Sechter
Gerald Sievers
Arthur Stoddart
Michael Stoline
Walter Turner
Arthur White
Alden Wright
Kung-Wei Yang

The Mathematics Department offers a wide variety of courses and programs in both theoretical and applied areas. In addition to a traditional general mathematics major program in preparation for graduate study, there are major programs that prepare students for careers in teaching, applied mathematics, and statistics. Mathematics and statistics minors are quite flexible, allowing students to concentrate on areas which complement their major area of study. Major and minor requirements in mathematics and statistics are summarized in the following tables. Students considering a mathematics or statistics major or minor should contact an adviser as soon as possible, preferably no later than the first semester of the sophomore year. Major and minor programs must be prepared by a departmental adviser.

Information on “Programs in Computer Science” is listed elsewhere in this catalog.

Major Options

General Mathematics Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>MATH 122</td>
<td>4</td>
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<tr>
<td>MATH 123</td>
<td>4</td>
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<tr>
<td>CS 105 or 306</td>
<td>2</td>
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<tr>
<td>MATH 230</td>
<td>4</td>
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<tr>
<td>MATH 314</td>
<td>3</td>
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<td>MATH 330</td>
<td>4</td>
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<tr>
<td>MATH 272</td>
<td>4</td>
</tr>
<tr>
<td>MATH 570</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Approved electives can be MATH 274, 340, 362, 440, 490, 506, 530, 574, 576, or 580. (At least two electives must be at 400 level or above.)
Secondary Teaching Option

MATH 122 .................................. 4
MATH 123 .................................. 4
CS 105 ..................................... 2
MATH 230 .................................. 4
MATH 314 .................................. 3
MATH 330 .................................. 4
MATH 340 .................................. 3
MATH 350 .................................. 2
MATH 550 (See course description for an alternative program which includes teaching experience in public schools.) .............................................. 3
Approved electives .......................... 9
Approved electives can be 272, 364, 408, 440, 490, 506, 530, 540, or 580. (At least one elective must be at the 400 level or above.)

Applied Mathematics Option

MATH 122 .................................. 4
MATH 123 .................................. 4
CS 306 ..................................... 2
MATH 230 and 274, or 374 .................. 7-4
MATH 310 or 314 ............................. 3
MATH 272 .................................. 4
MATH 364 .................................. 4
MATH 506 .................................. 3
Approved Electives .......................... 6-9
Approved Electives can be MATH 408, 490, 507, 547, 575, or 576. Note: Any student considering graduate work should also elect MATH 330 and MATH 570.

Minor Options

General Minor

MATH 122 .................................. 4
MATH 123 .................................. 4
CS 105 or 306 ................................ 2
MATH 230 or 374 ............................. 4
Approved electives .......................... 6

Teaching Minor

Secondary

MATH 122 .................................. 4
MATH 123 .................................. 4
CS 105 ..................................... 2
MATH 230 .................................. 4
MATH 314 .................................. 3
MATH 350 .................................. 2
Approved electives .......................... 3-4

Elementary

(For students in elementary education curricula only)

MATH 130 .................................. 4
MATH 151 .................................. 3
MATH 265 .................................. 4
MATH 452 .................................. 4
MATH 552 .................................. 3
MATH 553 or 595 ............................. 2

Honors in Mathematics

Selected students may qualify for a major with honors in mathematics. The purpose of this honors program in mathematics is to give the conscientious, industrious student the special attention that his/her superior performance and interest in mathematics warrant. Students who are enrolled in, or have completed, MATH 314 or 230 may be recommended by a member of the mathematics faculty for consideration as honors students. For further information, see the chairperson of the departmental honors program.

Statistics

The field of statistics is concerned with the collection of numerical data, with various descriptive and inferential methods of analyzing the data and with the proper interpretation of the results. The Department of Mathematics offers a major and a minor in statistics. These programs include coursework in mathematics, computer science, and statistics. Graduates of these programs should be qualified for positions in government and industry and for entrance into graduate programs in statistics and related fields.

It is important for statistics majors to choose a minor in a field that has statistical applications. There are special combined programs available with other departments for students interested in particular fields of application. The statistics major is available as a major for students earning a BBA degree in the College of Business. For more information see a faculty advisor.

Several introductory courses in statistics are available for students in other programs.

Major Requirements

CS 306 ..................................... 2
MATH 122 .................................. 4
MATH 123 .................................. 4
MATH 230 .................................. 4
MATH 272 .................................. 4
MATH 362 .................................. 3
MATH 364 .................................. 4
MATH 460 .................................. 3
MATH/CS 506 .................................. 3
MATH 567 .................................. 4
Two of MATH 563, 566, 568 .................. 6

Minor Requirements

MATH 260, 364 or 366 .......................... 4
MATH 362 .................................. 3
MATH 567 or 568 ............................. 4-3
CS 306 ..................................... 2
Approved Elective .......................... 3-4

The elective would normally be selected from the following list of courses: MATH 563, 566, 567 and 568. An approved introductory course in statistics may be substituted for either 260, 364 or 366.

Applied Statistics Minor

CS 306 ..................................... 2
MATH 366 or equivalent .......................... 4
MATH 567 .................................. 4
Two of MATH 563, 566, 568 .................. 6

Science and Mathematics

Teaching Minor

The Department of Mathematics 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.

Course Descriptions

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.

(Courses described in italics are approved for General Education.)

099 Skills: Special Topics
No Credit

101 Trigonometry
2 hrs.
Basic introductory course in trigonometry. Topics include angles and their measurement, trigonometric functions and their graphs, triangle computations; identities; solution of equations and inequalities; inverse trig functions. Students cannot receive full credit for both MATH 101 and 118.

Prerequisite: Three years of college preparatory mathematics and satisfactory score on placement test, or MATH 111.

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.

110 Algebra I
3 hrs.
A course in algebra at the level usually covered in high school. Review and practice with basic algebraic skills. Topics include arithmetic foundations of algebra, properties of real numbers, linear equations and inequalities, and systems of linear equations. This is a continuous progress, mastery-based course. Credit for MATH 110 will not be granted to anyone having already received credit with grade of “C” or better in any of MATH 101, 111, 116, 118, 122, or 200 or equivalent transferable courses. Prerequisite: MATH 109 or satisfactory score on placement test.

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 grade of “C” or better in any of MATH 101, 111, 116, 118, 122, or 200 or equivalent transferable courses. Prerequisite: MATH 110, or 1 year of high school algebra and satisfactory score on placement test.

116 Finite Mathematics with Applications
3 hrs.
This course is designed to give the student a background in the elements of finite mathematics. Included will be a discussion of sets, relations and functions, systems of linear equations and 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.
MATHEMATICS 103

118 Precalculus Mathematics 4 hrs.
This course is designed to provide the student with basic algebraic and trigonometric concepts necessary for calculus. Topics include: real numbers, inequalities, coordinate systems, functions, polynomial equations, 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.

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, logarithmic and exponential functions. Prerequisite: MATH 118, or at least 3 1/2 years of college preparatory mathematics, including trigonometry and satisfactory score on placement test.

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. (ICS 105 or 106 recommended). Students will not receive full credit for MATH 123 and 200.

150 Structure of Arithmetic 4 hrs.
This course is designed to provide the elementary teacher with a minimum foundation in the structure of arithmetic. Included will be a discussion of sets, relations, and properties of natural numbers, integers, rational numbers and real numbers, as well as selected topics from number theory and algebra. This course can only be applied to the mathematics requirements of a program leading towards elementary teacher certification. Prerequisite: MATH 110 or adequate performance on admissions test.

151 Geometry for Elementary Teachers 3 hrs.
This course is devoted to an analysis of geometric figures in the plane and space and to an investigation of metric and topological transformations, their invariants and related topics, including symmetry, symmetry groups and measurement. Emphasis will be on the active participation of the student in the process of discovering and communicating mathematical ideas. Prerequisite: MATH 150.

190 Survey of Mathematical Ideas 4 hrs.
A survey of significant, active areas of mathematics with the emphasis on concepts rather than calculations. The historical origin and development of certain mathematical ideas will be included. The areas of mathematics investigated will include topics from set theory, probability theory, number theory, geometry, algebra, and graph theory. This course will not satisfy any program requirements in mathematics.

200 Analysis and Applications 4 hrs.
Topics include: sets, functions, rates, limits, differentiation, integration, applications. The course should not be elected by those students taking courses in the Mathematics 122-123 sequence. Prerequisite: MATH 111, or 1 1/2 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.

230 Elementary Linear Algebra 4 hrs.
Vectors and geometry in two and three dimensions, systems of linear equations, matrix algebra, linear transformations in R^n and R^m, generalizations to the vector spaces R^n, inner products, determinants. Some emphasis on proofs. Prerequisite: MATH 222 (MATH 123 recommended).

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, ch-square, F distributions; interval estimates; tests of hypotheses. Students can receive credit for only one of 260, 360, 364, 366. Prerequisite: MATH 200 or 122.

265 Probability and Statistics for Elementary Teachers 4 hrs.
The topics in this course will include the organization of statistical data into graphs and tables, descriptive statistical measures, probability and decision making, testing hypotheses, and correlation. Students will learn the rudiments of a programming language and subsequently use computer techniques to assist in data analysis. The problems of teaching probability and statistics to elementary school children will be considered. Prerequisite: MATH 151.

272 Vector and Multivariate Calculus 4 hrs.
Vector calculus, functions of several variables, partial differentiation, multiple integration. Prerequisite: MATH 123.

274 Introduction to Differential Equation 3 hrs.
Techniques of solving differential equations. Prerequisite: 123.

310 Discrete Mathematical Structures 3 hrs.
Sets, relations, functions, counting techniques, proof techniques and mathematical induction; algebraic flowchart language, graphs, directed graphs and labeled trees; Boolean algebras. The relationship of these and related concepts with computer science will be emphasized. Math 310 and 314 may not both be used for the same major or minor. Prerequisite: MATH 230 or 374, and an introductory programming course.

314 Fundamental Concepts of Mathematics 3 hrs.
The primary objective of this course is to involve the students in mathematical proofs and their presentations. Various mathematical subjects, which may include logic, set theory, relations and functions may be used to provide a framework for the course. It is intended that the course proceed with thoroughness and depth rather than attempting to survey a large number of topics. MATH 314 and 310 may not both be used for the same major or minor. Prerequisite: MATH 123, and 230 or 374.

330 Modern Algebra 4 hrs.
Introduction to groups, rings, integral domains, fields. Emphasis will be placed on the integers and polynomial rings over a field. Prerequisite: MATH 314 or consent of instructor.

340 Fundamental Concepts of Geometry 3 hrs.
A critical re-examination of plane and solid euclidean geometry followed by euclidean geometry of four dimensions and noneuclidean geometry. Prerequisite: MATH 314.

350 Teaching of Junior High Mathematics 2 hrs.
In this course consideration is given to curriculum problems and trends in junior high school mathematics and to specific problems of teaching mathematics effectively to junior high school pupils. Activity and laboratory approaches for teaching mathematics will be emphasized. Prerequisite: MATH 314 or consent of instructor.

360 Probability and Statistics for Engineers 4 hrs.
The purpose of this course is to provide the engineering student with an adequate background in probability and a brief introduction to the methods of statistical inference. Topics include: discrete probability spaces, conditional probability, discrete and continuous random variables, joint distributions, population moments, special distributions, sampling distribution, interval estimation, hypothesis testing. Students can receive credit for only one of MATH 260, 360, 364, 366. Prerequisite: MATH 272.

362 Probability 3 hrs.
Discrete probability spaces, conditional probability, discrete and continuous random variables, expectations, joint distributions, special distributions. Prerequisite: MATH 123.

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 260, 360, 364, 366. Prerequisite: MATH 123.

366 Introduction to Statistics 4 hrs.
An introductory course in statistics for upper level students possessing a limited mathematics 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 260, 360, 364, 366.

374 Introduction to Linear Algebra and Differential Equations 4 hrs.
This course covers elementary linear algebra and differential equations, applying techniques of linear algebra to the solution of differential equations. Topics chosen from: first order equations and applications, matrices, vector spaces, linear transformations, linear differential equations, systems of differential equations, and series solutions. Students cannot receive credit for both 274 and 374, or 230 and 374. Prerequisite: MATH 272.
such as series evaluation, multiplication and inversion of matrices, numerical integration and pointwise differentiation as well as general numerical approximation will be prepared for the computer. Prerequisite: MATH 230 or 374, and CS 112 or 306. Jointly listed with Computer Science.

507 Numerical Analysis

3 hrs.
Numerical methods including polynomial evaluation and interpolation, solution of systems of linear equations, solution of nonlinear equations, differentiation, integration and the solution of differential equations. Additional topics may include systems of nonlinear equations, optimization, approximation by polynomials, fast Fourier transforms and boundary value problems. Corequisite: MATH or CS 506.

510 Multivariate Mathematical Methods

3 hrs.
Topics from multivariate calculus, including Jacobians and optimization techniques, and from linear algebra, including eigenvalues, idempotent matrices and generalized inverses. Emphasis on applications and examples from statistics. Prerequisite: MATH 230 and 272.

530 Linear Algebra

3 hrs.
Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: MATH 330.

540 Advanced Geometry

3 hrs.
Topics to be selected from projective geometry, algebraic geometry, differential geometry, or non-euclidean geometry. Prerequisite: Consent of instructor.

550 Teaching of Secondary Mathematics

3 hrs.
In this course consideration is given to curriculum problems and trends in secondary school mathematics and to specific problems of teaching mathematics effectively to secondary school students. This course may be taken in conjunction with ED 301 through participating in the Cooperative Mathematics Program conducted during winter semester. Contact the departmental office at least one semester in advance for additional information. Prerequisite: MATH 330 and 350.

551 Participation in Teaching Secondary Mathematics

2 hrs.
School experiences and related seminar designed to provide the prospective teacher of secondary mathematics with tutorial, small group and a limited amount of total class teaching experience in the junior or senior high school mathematics classroom. Enrollment is restricted to students concurrently enrolled in MATH 550. Can be elected on Credit/No Credit basis only. Prerequisite: Approval of instructor.

552 Teaching of Elementary Mathematics

3 hrs.
Consideration is given to curriculum problems and trends in elementary school mathematics and to specific problems of teaching mathematics effectively to elementary school children. Prerequisite: MATH 150.

553 Participation in Elementary Mathematics Teaching

2 hrs.
Students will work cooperatively with an elementary school teacher in an elementary classroom in various aspects of helping children learn mathematics. The course will provide the prospective elementary teacher with an opportunity to work with small groups of young children and to observe them in mathematics learning. The student will be required to maintain a journal and meet weekly with a staff member supervising the course. Can be elected on Credit/No Credit basis only. Prerequisite: MATH 552.

560 Applied Probability

3 hrs.
A first course in probability for upper division and graduate students interested in applications. Topics will include: probability spaces, expectation, moment generating functions, central limit theorem, special discrete and continuous distributions. Applications will include reliability and production problems, and Markov chain methods. Not recommended for students who have taken MATH 562 or 660. Prerequisite: MATH 272.

562 Statistical Analysis I

4 hrs.
The first course in the sequence 562, 662 or applied statistics which will cover both theory and applications. Topics include: elementary theory of estimation and hypothesis testing; the use of the normal, binomial, chi-square, F and t distributions in statistics problems involving means and variances; simple linear regression and correlation; one way analysis of variance; and fixed effects models. Prerequisite: MATH 560 or 362.

563 Sample Survey Methods

3 hrs.
This course consists of a broad overview of the techniques of survey data collection and analysis and contains a minimum of theory. Topics may include: simple random, stratified, systematic, single-stage cluster, and two-stage cluster sampling; ratio and regression estimation; subpopulation analyses; problems of nonresponse; surveys of sensitive issues; minimization of survey costs; sample size determination. Real surveys are discussed and actual survey data are analyzed. Prerequisite: An introductory statistics course and consent of instructor.

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.

567 Statistical Design and Analysis of Experiments

4 hrs.
A course in experimental design and the analysis of variance with particular emphasis on industrial experiments. Topics include: complete randomized, randomized complete block, latin square, and split-plot designs, orthogonal contrasts and polynomials, multiple comparisons, factorial arrangement of treatments, confounding; fractional replication. The course is molded around the complete analysis of group of applied problems. Prerequisite: An introductory statistics course.

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; stepwise regression; use of indicator variables; non-linear regression. Prerequisite: An introductory statistics course.

570 Advanced Calculus
3 hrs.
Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Prerequisites: MATH 272 and 330.

574 Ordinary Differential Equations
3 hrs.
Methods of solution, linear differential equations, ordinary and singular points, series solutions. Bessel and Legendre series; solutions of Laplace equations, heat equations and wave equations as examples. Prerequisite: MATH 574 or consent of instructor.

575 Introduction to Partial Differential Equations
3 hrs.
Quasi-linear equations of the first order, linear and quasi-linear equations of the second order, separation of variables and Fourier series; solutions of Laplace equations, heat equations and wave equations as examples of elliptic, parabolic and hyperbolic equations. Prerequisites: MATH 574 or consent of instructor.

576 Introduction to Complex Analysis
3 hrs.
Complex numbers, elementary functions, differentiation of complex functions, integration, properties of real numbers, Cauchy's integral formula. Prerequisites: MATH 576 and 676. Prerequisite: MATH 272.

580 Number Theory
3 hrs.
Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: MATH 330.

595 Seminar in Elementary Mathematics Education
1-3 hrs.
Current curriculum problems in the area of elementary mathematics education are identified and discussed. Students are required to identify a problem and give both an oral and written report on research in that area. Prerequisite: MATH 552.

599 Independent Study in Mathematics
1-3 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Approval of chairperson of Department.

Medieval Institute Program
See “Interdisciplinary Programs” in the College of Arts and Sciences.

Philosophy (PHIL)
Michael Prechtard, Chair
Joseph Dillworth
Arthur Falk
Richard Pulaski
Gregory Sheridan
Dale Westhal

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 read-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 concentrators. Students who select the university’s “student planned curriculum,” described in the General Information section of this catalog. The Philosophy Department encourages those concentrations and members of the staff will be happy to serve as advisers to students wishing to construct concentrations that involve philosophy.

The Philosophy Department offices are located on the fifth floor of Friedmann 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 pre-registration 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. Before pre-registration for the semester, the student can know which courses will probably be offered in the following fall, winter, spring, and summer.

Robert Friedmann Philosophy Prize
A prize normally $50, named in honor of Dr. Friedmann, the first person to teach philosophy at Western, is awarded annually to an outstanding senior philosophy student.

Honors Program
Applications to the departmental honors program are invited from qualified students. A student wishing to enter the program must submit a proposal for independent research to a faculty committee. Normally, the honors candidate works in close association with a professor of his/her choice and submits a paper (or other project of philosophic merit) to the department. To achieve honors in philosophy the candidate’s academic record must be of high quality and the project must be outstanding.

Interdisciplinary work involving faculty from other departments is encouraged. Normally, but not necessarily, the honors student is a senior major; in exceptional cases non-seniors or non-majors may be considered.

Major and Minor Requirements
Because the Philosophy Department believes that there is no single “correct” approach to the study of philosophy, that, as much as possible, each student under the guidance of a faculty member should design a program in accordance with his/her interests, ability, and intellectual maturity, there are no required courses in philosophy. Instead, students majoring in philosophy must plan their program with a faculty adviser. Every faculty member serves as a student adviser and normally students may select their adviser they prefer. The adviser works closely with the student in planning a program of studies and helps the student make an informed and intelligent choice of courses.

The student should select an adviser as soon as he/she is fairly certain that he/she intends to major in philosophy. Normally this would not occur until after he/she has taken at least one, and possibly two philosophy courses. Every major must choose and consult with an adviser no later that 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 adviser has been obtained (transfer students may apply for exemptions from this rule if they wish to transfer more than 8 hours). Students are encouraged to see their advisers frequently, but consultation should occur at least once every academic year.

A major consists of a minimum of 28 hours in philosophy. 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.

Minors: 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 advisers (preferable 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, 5011 Friedmann Hall.

Students Not Majoring or Minoring in Philosophy
Students not majoring or minoring in philosophy find that philosophy adds intellectual depth to their major field of study. Philosophy by its nature touches on many areas of life and thought, frequently from a perspective that students find valuable and exciting. Non-majors often consider their philosophy courses an essential element in their general intellectual growth.

In recognition of this, the department offers a wide range of courses for non-major/minors. Students interested in a general introduction to philosophy should consider PHIL 100 or 200. Students interested in a more specialized 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 332 (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.

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.
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.

Course Descriptions
(Courses described in italics are approved for General Education.)

Introductory Courses

100 Philosophizing
4 hrs.
A seminar for students who wish to improve their ability to think analytically, argue logically, and express a train of thought carefully and cogently in writing. There will be frequent writing assignments which will focus on issues raised by readings of broad philosophical interest. Class time will be about equally divided between discussion of the readings and critical analysis of the student's own writings. Fulfills the University Intellectual Skills college-level writing requirement.

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.

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?

220 Elementary Logic
4 hrs.
A study of the rules and techniques of deductive reasoning and the sources of some common fallacies. Topics included are syllogisms and the logic of propositions. Open to first-year students.

300-Level Courses
Each semester detailed course descriptions are posted outside room 5011 Friedmann Hall prior to pre-registration. If you are in doubt about whether you have adequate background for taking a course, talk with the instructor.

301 History of Modern Philosophy
4 hrs.
A survey of modern philosophy from the Renaissance through Kant, with emphasis upon Descartes, Leibniz, Locke, Berkeley, Hume, and Kant.

303 Existentialist Philosophies
4 hrs.
A concentrated study of leading thinkers in modern philosophical existentialism: Kierkegaard, Nietzsche, Jaspers, Sartre, and Camus.

307 Phenomenology
4 hrs.
A systematic study of the origins and developments of the phenomenological movement. The writings of several major phenomenologists will be considered, e.g. Husserl, Heidegger, Merleau-Ponty, etc.

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.

311 Political Philosophy
4 hrs.
An examination of fundamental problems arising from political and social relationships. The main emphasis is on such political value concepts as liberty, equality, human rights and justice. Topics that might be considered include, but are not necessarily restricted to: the nature and basis of political authority and obligation; civil disobedience; tolerance and dissent; the aims of political institutions; law and morality.

312 Philosophy of Art
4 hrs.
An analysis of the nature of art and esthetic experience, and its significance in human life. The course may cover all forms of art, or concentrate on a few, for instance, literature, drama and music.

313 Philosophy of Law
4 hrs.
The course considers the nature of law and the goals, policies and limitations of a legal system. The connections between law and justice, law and freedom, and law and morality will be examined.

314 Philosophy and Public Affairs
4 hrs.
A philosophical examination of principles and values underlying contemporary social issues. The course will focus on specific issues such as racial and sexual equality, abortion, privacy, censorship, violence, and goals and methods of social change, as well as social movements such as Marxism, the women's movement, and various utopian ideals. Topics to be announced in the time schedule.

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.

324 Philosophy of the Sciences
4 hrs.
A critical examination of the concepts, methods, presuppositions and conclusions of the natural and social sciences.

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.

333 Metaphysics
4 hrs.
A study of basic metaphysical questions, discussing traditional solutions but emphasizing recent approaches. Questions will be selected from such topics as: substances, qualities and relations, universals and particulars, identity, space and time, causation, mind and body, persons, free will.

334 Philosophical Problems of Psychology
4 hrs.
Problems in the philosophy of mind with emphasis on recent analysis and solutions. Among the possible topics are the definition of "mind" and its relation to "the body," to "behavior," and to "experience," teleological and mechanistic explanations of behavior, including behaviorism and functionalism, machine-models of thinking, "thinking machines," robots, servomechanisms and the concept of a person, privacy of one's own mind and one's knowledge of other minds, consciousness of self and of world, free will and determinism.

Advanced Courses

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 from students are welcomed. Seminars may be set up to be taken for variable credit and to last more or less than a semester's length.

498 Independent Study
2-4 hrs.
Independent study is for those students who have attained a degree of competence in philosophy and wish to embark upon a project to be carried out without the usual close guidance of the instructor in the classroom. Independent study may not be elected as a substitute for a regularly scheduled course. Prerequisite: Permission of the instructor with whom the student wishes to work.

500 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.

520 Mathematical Logic
3 hrs.
This course covers the basic ideas in modern mathematical logic. First the fundamentals of the propositional and quantificational calculi (including the symbolization of English sentences) are discussed. Next comes a study of the basic features of formal languages and axiomatic theories with special emphasis on the notions of formal proofs in, and models for, such systems. Finally, the course includes an introduction to the metamathematics of formal theories through a study of such topics as consistency and completeness, the deduction theorem, recursive functions, the Godel and Church theorems, decidable vs. undecidable theories. Prerequisite: MATH 310 or MATH 314, or permission of instructor.
534 Moral and Philosophical Foundations of Health Care
4 hrs.
In this course philosophical reflection and biological science are combined in a critical examination of the nature and purpose of the health sciences. Topics to be considered include: the aims of the health sciences; the interplay of fact and value in health care; competing images of humankind embedded in health science; patient autonomy, dignity, and medical paternalism. This is a cross-college interdisciplinary course which is team taught with faculty from the General Studies Science Area.

598 Readings in Philosophy
2.4 hrs.
Research on some selected period or topic under supervision of a member of the Philosophy faculty. Approval of instructor involved must be secured in advance of registration.

Physics (PHYS)

Eugene Bernstein, Chair
David Carley
Stanley Derby
Dean Halderson
Gerald Hardie
Dean Kau
Arthur McGunn
Larry Oppeliger
Robert Shamu
Michitoshi Soga
John Tans
James Zietlow

The Department of Physics offers two programs of study leading to a major in physics. The physics major program in the arts and sciences curriculum (ASC) prepares students for graduate study or professional employment in physics, and the secondary education (SED) physics major program prepares students to teach physics at the high school level. A geophysics major program, sponsored jointly by the Geology and Physics Departments, is also available, enabling students to prepare for a career in an important area of applied physics.

Any student contemplating majoring in physics should contact the Physics Department as early as possible. This is especially true for the transfer students from community colleges in regard to transfer credit and course of study. Students will want to contact the undergraduate adviser in the department regarding courses, employment opportunities, and graduate study in physics.

Any physics major may qualify for departmental honors in physics by fulfilling the following requirements:
1. Complete the courses recommended for students planning to enter graduate school.
2. Attain by the end of the semester preceding graduation an accumulated honor point ratio of at least 3.5 (BA) in his/her physics courses, and an accumulated honor point ratio of 3.0 or more in his/her other courses.

Minor programs are also available in the ASC and SED curricula, and there is a science and mathematics teaching minor for students in the elementary education curriculum.

The Physics Department is concerned about the science education of all University students and offers several introductory-level courses approved for General Education credit. The descriptions of such approved courses are italicized in the course listings below. A conference with the department chairperson or the undergraduate adviser will ensure a selection appropriate to the student's interest and experience.

ASC Physics Major

The courses required for the ASC physics major are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>210 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>211 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>330 Thermodynamics and</td>
<td>3</td>
</tr>
<tr>
<td>Kinetic Theory</td>
<td></td>
</tr>
<tr>
<td>342 Electronics</td>
<td>4</td>
</tr>
<tr>
<td>520 Analytical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>540 Electricity and Magnetism</td>
<td>3</td>
</tr>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>560 Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>562 Atomic and Molecular Physics</td>
<td></td>
</tr>
<tr>
<td>563 Solid State Physics</td>
<td>3</td>
</tr>
<tr>
<td>564 Nuclear and Particle Physics</td>
<td></td>
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<tr>
<td>566 Advanced Laboratory</td>
<td>3</td>
</tr>
</tbody>
</table>

Students planning to work in industry are advised to take PHYS 344 Microprocessor Electronics. It is strongly recommended that students planning to enter graduate school also take PHYS 541 Electricity and Magnetism II. A suggested course of study for the ASC physics major is as follows:

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>3.4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
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<tr>
<td>Elective</td>
<td>4</td>
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<td>16-17</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MATH 123</td>
<td>4</td>
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<tr>
<td>PHYS 210</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 120</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>3.4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
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<tr>
<td>Total</td>
<td>16-17</td>
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Third Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MATH 272</td>
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</tr>
<tr>
<td>PHYS 211</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
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<tr>
<td>Elective</td>
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<td>Total</td>
<td>16</td>
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Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 274 or 374</td>
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<tr>
<td>PHYS 342</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
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<td>Elective</td>
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Fifth Semester

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 574</td>
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<tr>
<td>PHYS 340</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 520</td>
<td>4</td>
</tr>
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<td>General Education</td>
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<td>Elective</td>
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Sixth Semester

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<th>Course</th>
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<tbody>
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<td>MATH 575</td>
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</tr>
<tr>
<td>PHYS 540</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 560</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
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<tr>
<td>Elective</td>
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Seventh Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 306 or 506</td>
<td>2.3</td>
</tr>
<tr>
<td>PHYS 562</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 563</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
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<tr>
<td>Elective</td>
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Eighth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 564</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 566</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
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<td>Total</td>
<td>15</td>
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</table>

Secondary Education Physics Major

The courses required for the SED physics major are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 General Astronomy</td>
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</tr>
<tr>
<td>210 Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>211 Electricity and Light</td>
<td>4</td>
</tr>
<tr>
<td>212 Introductory Modern Physics</td>
<td></td>
</tr>
<tr>
<td>342 Electronics</td>
<td>4</td>
</tr>
<tr>
<td>352 Optics</td>
<td>4</td>
</tr>
</tbody>
</table>

Two additional physics courses number above 300 are also required. PHYS 308 does not carry credit towards the major but is a required course for those in secondary education.

A suggested course of study for the SED physics major is as follows:
### First Semester
- MATH 122 ........................................ 4
- PHYS 105 ........................................ 4
- CHIM 101 or 102 ................................. 4
- General Education ............................ 3-4
- Physical Education ................................ 1
  16-17

### Second Semester
- MATH 123 ........................................ 4
- PHYS 210 ........................................ 4
- CHIM 122 ........................................ 4
- General Education ............................ 3-4
- Physical Education ................................ 1
  16-17

### Third Semester
- MATH 272 ........................................ 4
- PHYS 211 ........................................ 4
- General Education ............................ 4
- Elective .......................................... 3-4
  15-16

### Fourth Semester
- MATH 274 or 374 ............................... 3
- PHYS 212 ........................................ 4
- General Education ............................ 4
- ED 250 ........................................... 4
  15

### Fifth Semester
- Physics Elective ................................ 3
- CS 306 ........................................... 2
- ED 301 ........................................... 4
- General Education ............................ 4
- Elective .......................................... 3-4
  15-16

### Sixth Semester
- PHYS 308 ........................................ 3
- PHYS 342 ........................................ 4
- General Education ............................ 4
- Elective .......................................... 4
  15

### Seventh Semester
- ED 410 ........................................... 4
- ED 450 ........................................... 4
- ED 470 ........................................... 6
  17

### Eighth Semester
- Directed Teaching ................................ 14

### Geophysics Major

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 122</td>
<td>4</td>
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<tr>
<td>PHYS 105</td>
<td>4</td>
</tr>
<tr>
<td>CHIM 101 or 102</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>3-4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
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<tr>
<td>MATH 123</td>
<td>4</td>
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<tr>
<td>PHYS 210</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 212</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 342 or 344</td>
<td>3-4</td>
</tr>
<tr>
<td>One of the following:</td>
<td></td>
</tr>
<tr>
<td>PHYS 330</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 352</td>
<td>4</td>
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<tr>
<td>PHYS 540</td>
<td>3</td>
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<tr>
<td>GEOL 130</td>
<td>4</td>
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<td>GEOL 131</td>
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<td>GEOL 301</td>
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<td>GEOL 430</td>
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<td>GEOL 560</td>
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<tr>
<td>CHEM 101 or 102</td>
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<tr>
<td>MATH 272</td>
<td>4</td>
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<tr>
<td>MATH 374</td>
<td>4</td>
</tr>
<tr>
<td>CS 306</td>
<td>2</td>
</tr>
<tr>
<td>MATHICS 506</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, a student is required to take three electives from upper-level geology, physics, and engineering courses to be chosen with the consent of the adviser. A field course in geology (6-8 hrs.) is strongly recommended.

### ASC Physics Minor

The courses required for the ASC physics minor are:
- 210 Mechanics and Heat ................. 4
- 211 Electricity and Light ............ 4
- 212 Introductory Modern Physics .... 4

In addition, three physics courses numbered above 300 are required.

### Secondary Education Physics Minor

The courses required for the SED physics minor are:
- 210 Mechanics and Heat ................. 4
- 211 Electricity and Light ............ 4
- 212 Introductory Modern Physics .... 4
- 342 Electronics ........................... 4
- 352 Optics .................................. 4

With consent of the department, PHYS 110 and 111 may be substituted for 210 and 211 in the ASC and SED minor programs.

### Science and Mathematics Teaching Minor

The Department of Physics participates in the science and mathematics teaching minor for students in the elementary education curriculum. For a full description of the program, consult its listing under the "Interdisciplinary Programs" section in the College of Arts and Sciences.

### Course Descriptions

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Acoustics</td>
<td>2 hrs.</td>
</tr>
<tr>
<td>101 Principles of Photography</td>
<td>2 hrs.</td>
</tr>
</tbody>
</table>

### Physics and the Environment

3 hrs. Fall

The objective of this course is to provide the student with an understanding of some of the fundamental principles of the physical sciences to underlie selected environmental problems. Topics covered include the physical aspects of air pollution, the energy problem, and radioactivity. The course consists of three lectures per week. No previous training in physics is required. This course may not be applied towards either a major or minor in physics.

### 104 Introductory Astronomy

3 hrs. Fall, Winter

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 the simplest aspects of arithmetic and high school algebra. The course consists of three lectures per week. Some evening observation sessions will be offered during the semester. Students majoring in the physical sciences or mathematics are advised to take PHYS 105.

### 105 General Astronomy

4 hrs. Fall

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. Algebra and trigonometry are required to do the laboratory experiments. Three lecture-recitations and two hours of evening observation and laboratory per week are required. While PHYS 105 and PHYS 104 have common lecture sections, the students in PHYS 105 may expect additional assignments. Recommended for majors and minors in mathematics and/or a physical science. A student may not receive credit for both 104 and 105.

### 106 Elementary Physics

4 hrs. Fall, Winter

This course surveys physics from mechanics to modern physics in one semester. It is designed for students not requiring four credit hours at the level of general college physics. The course consists of four lectures and one two-hour laboratory per week. A student may not receive credit for both 106 and either 110 or 210.

### 107 Planetary Science in Elementary Education

4 hrs.

An interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among them. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Student will study each of the three topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisite.) Not recommended for science majors.

### 110 General Physics

4 hrs. Fall, Winter, and Spring

A general college physics course in the principles and practical application of mechanics, sound, and heat. Required of all
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 staff member. Prerequisite: Consent of instructor.

520 Analytical Mechanics
3 hrs. Fall
The topics studied include the dynamics of a single particle and the motion of a system 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 211 and either MATH 274 or 374. The mathematics course may be taken concurrently.

540 Electricity and Magnetism I
3 hrs. Winter
This is a theoretical course providing a thorough investigation of electric and magnetic fields. The application of theorems of Gauss and Ampere are emphasized, and Maxwell's equations and other applications to topics such as time-dependent fields, wave guides, and radiation will form the principal topics of the course. Prerequisite: PHYS 540.

560 Quantum Mechanics
3 hrs. Winter
In this course the development of quantum mechanics is traced, and simple applications of the theory are discussed. Topics include cavity radiation, the photoelectric effect, deBroglie waves, the Rutherford-Bohr atom, the uncertainty principle, the Schrödinger equation with solutions, the coupling of angular momenta, and perturbation theory. Prerequisite: PHYS 211 and 520 or consent of instructor.

562 Atomic and Molecular Physics
3 hrs. Fall
This course continues the study of the applications of quantum mechanics. Topics include the helium atom, multielectron atoms, the Raman, Zeeman, and Stark effects, stimulated emission, transition rates, selection rules, the diatomic molecule, and molecular physics. Prerequisite: PHYS 560 or consent of the instructor.

563 Solid State Physics
3 hrs.
After an initial study of symmetry and crystal structure, quantum mechanics is used to describe the cohesion of solids, x-ray and neutron diffraction, the elasticity of solids, lattice vibrations, and the thermal and electrical properties of solids, with particular emphasis on metals. Prerequisite: PHYS 560 or consent of the instructor.

564 Nuclear and Particle Physics
3 hrs. Winter
This course covers such topics as properties of nucleons, 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 560 or consent of the instructor.
The objectives of this course are to provide the student with experience in the use of modern laboratory equipment and with a better 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 three-three-hour-laboratory periods each week. Prerequisites PHYS 342 and PHYS 560. (560 may be elected concurrently with 566.)

This course is primarily devoted to the special theory of relativity. Topics include the Lorentz transformation, space-time diagrams, mechanics of systems of point masses, collisions, electromagnetism, and conservation laws. An introduction to the general theory of relativity will also be given. Prerequisites PHYS 520 (may be taken concurrently).

This course affords an opportunity for advanced students to record in Physics to pursue independently the study of some subject of interest to them. Prerequisite: Consent of instructor.

A minor consists of 20 semester hours in the department. It is expected that transfer students will take at least one-half of the minimum required 20 hours in the department. A minor shall take a minimum of one course in two of the following fields: American Political System, International Relations, Foreign and Comparative Political Systems, Political Theory and Methodology. Requirements may be waived with the written permission of the chairperson of the department.

Students planning to use this major to meet teacher certification requirements are required to take SSCI 300-Teaching of Social Studies in the Secondary Schools (For questions see Prof. Wm. Fox, 1402 Sangren Hall or 2005 Friedmann Hall).

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.

Criminal Justice is concerned with the institutional and individual problems that arise out of criminal behavior, and the functions of the police, courts, and correctional agencies in the American system of justice.

Students interested in the Concentration should see the Criminal Justice Adviser of the Political Science Department, Dr. Peter Renstrom—3029 Friedmann Hall (383-0483).

To obtain a major in political science with a concentration in criminal justice, a student must complete the following program.

**Required Core:**
- **PSCI 250 International Relations** 3 hrs.
- **PSCI 320 American Judicial Process** 4 hrs.
- **PSCI 340-354** One Comparative Politics Course (340, 341, 342, 343, or 344) 4 hrs.
- **PSCI 520 Constitutional Law** 3 hrs.
- **PSCI 522 Civil Liberties and Civil Rights** 3 hrs.
- **PSCI 525** One Theory Course (360, 361, 362, 562, 563, or 564) 3-4 hrs.
- **SOC 362** Criminology 3 hrs.
- **PSCI 525** Politics of Criminal Justice 3 hrs.

**Complete TWO of the following:**
- **PSCI 200** National Government 3 hrs.
- **PSCI 300** Urban Politics in the United States 3 hrs.
- **PSCI 330** Introduction to Public Administration 3 hrs.
- **PSCI 520** Constitutional Law 3 hrs.
- **PSCI 522** Civil Liberties and Civil Rights 3 hrs.
- **PSCI 534** Administrative Theory 3 hrs.
- **PSCI 590** Research Methodology 3 hrs.
- **PSCI 591** Statistics for Political Scientists 3 hrs.
Complete TWO of the following:

FCL 340 Legal Environment .................................. 3 hrs.
FCL 560 Seminar in Criminal Law and Procedure ............................... 3 hrs.
PHIL 313 Philosophy of Law .................................. 4 hrs.
SOC 462 Criminal Justice Process .................................. 3 hrs.
SOC 464 Sociology of Law Enforcement .................................. 3 hrs.
SOC 564 Juvenile Delinquency .................................. 3 hrs.
SOC 566 Advanced Criminology .................................. 3 hrs.

39 hrs.

Minimum Hours Required (30 Political Science hrs. plus 3 Cognate courses).

American Political Institutions and 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 American Political Institutions and Public Policy is aimed at preparing students for careers in government service at national, state, and local levels, in politics, and in teaching in the American government field. A public policy focus is found in each of the courses required for the Major and Minor in this field.

Students interested in a Major or Minor in Political Science with a Concentration in American Political Institutions and Public Policy should see one of the Department’s advisers.

To complete the Major or the Minor, a student must complete the following:

Major

31 hrs.
PSCI 200 National Government .................................. 3 hrs.
PSCI 210 Citizen Politics .................................. 3 hrs.
PSCI 250 International Relations .................................. 3 hrs.
PSCI 314 The Presidency .................................. 3 hrs.
PSCI 315 The Politics of Congress .................................. 3 hrs.
PSCI 320 The American Judicial Process .................................. 3 hrs.
PSCI 34- One Course in Foreign and Comparative Systems (340, 341, 342, 343, or 344) .................................. 3 hrs.
PSCI — One Course in Political Theory (351, 352, 353, 354, or 355) .................................. 3 hrs.

Minor

20 Hours

PSCI 200 National Government .................................. 3 hrs.
PSCI 210 Citizen Politics .................................. 3 hrs.
PSCI 314 The Presidency .................................. 3 hrs.
PSCI 315 The Politics of Congress .................................. 3 hrs.
PSCI 320 The American Judicial System .................................. 3 hrs.

*This course, PSCI 506, will serve as the capstone for both the Major and Minor programs. The course is limited in enrollment to American Political Institutions and Public Policy Majors and Minors and to graduate students interested in American Government and Politics. Each student will be expected to prepare a research paper, present the paper to the class, and engage in critiques of other student papers.

Programs in Public Administration

These programs are designed to prepare students for entrance level positions in public and public related agencies by equipping them with a knowledge and understanding of the political, social, economic, and legal environment of public agencies, by introducing them to operational and procedural problems of public agencies, and by providing them with an understanding of selected administrative tools.

The major in public administration has an interdisciplinary focus, which includes required courses in accounting, computers, economics, and statistics as well as political science. Internships which permit students to assist public administrators in their work are available. Credits can be obtained in these internships.

All students who elect the public administration programs are to complete a major or minor card in consultation with a public administration adviser in the Department of Political Science. The student must consult with his or her adviser upon entering the program.

The political science major program in public administration (Curriculum PAP) requires 39 semester credit hours divided among: (1) a 33-semester-hour core of required courses; and (2) 6 hours of electives.

Major Required Core

Required Core

1. PSCI 200 National Government .................................. 3 hrs.
PSCI 202 State and Local Government .................................. 3 hrs.
PSCI 330 Intro. to Public Admin. .................................. 3 hrs.
PSCI 526 Admin. Law and Public Reg. .................................. 3 hrs.
PSCI 533 Public Personnel Admin. .................................. 3 hrs.
PSCI 535 Policies of Governmental Budgeting and Finance .................................. 3 hrs.

2. ECON 201 Principles of Economics .................................. 3 hrs.
ECON 202 Principles of Economics .................................. 3 hrs.
ACTY 201 Accounting Concepts and Application or ACTY 210 Principles of Accounting .................................. 3 hrs.

In addition, each major must complete both of the following:

(a) One approved course in statistics, and
(b) One introductory course in computers

Electives

3. Choose TWO from the following:
PSCI 390 Field Work in Pol. Sci .................................. 3 hrs.
PSCI 504 Making of Public Policy .................................. 3 hrs.
PSCI 530 Problems in Pub. Admin. .................................. 3 hrs.
PSCI 531 Admin. in Local and Regional Govts. .................................. 3 hrs.
PSCI 534 Administrative Theory .................................. 3 hrs.
PSCI 536 Comparative Pub. Admin. .................................. 3 hrs.
PSCI 542 Admin. in Devel. Countries .................................. 3 hrs.

4. Majors must choose one directed minor (15-24 hrs.) in consultation with a public administration adviser—contact departmental office for details.

Minor

The minor in public administration requires 22 hours, including all courses listed in section 1. and one course (3 hrs.) drawn from section 3. Many political science majors choose to minor in public administration.

The Department of Political Science also cooperates with the College of Business in offering a curriculum in public administration (PAB) designed for students planning careers in the private sector involving contact with governmental agencies and activities.

The student takes a Bachelor of Business Administration with a business administration major plus the political science minor in public administration as described above. For further details, see Business Administration: Related majors. For counseling see the general business adviser and the public administration coordinator.

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 adviser, Dr. Alan C. Isaak.

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.

For further information, see Dr. Lawrence Ziring, Director, Institute of Government and Politics, Friedmann Hall (383-0491).

Course Descriptions

(Courses described in italics are approved for General Education.)

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.
270 Political Topics
1 hr.
A specifically focused course dealing with a political topic of general student interest. The course will be primarily substantive rather than theoretical to accommodate students with no previous training in political science. The topic will be announced in advance, and the course may be repeated for credit with a different topic. Not approved for major or minor credit.

American Political System

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.

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.

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.

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 city will be viewed as a center of economic and social problems that necessitate political activity and as a laboratory for the advancement of general knowledge of politics.

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.

310 Political Parties and Elections
4 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.

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.

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.

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.

504 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.

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.

516 Political Campaigning
4 hrs.
How are elections won? This course provides a practical guide on how to organize and conduct a political campaign. For the potential candidate or campaign worker, it tells how to do it. For others it describes how campaigns are trying to affect your vote.

520 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.

522 Civil Liberties and Civil Rights
3 hrs.
An examination of Supreme Court responses to First Amendment, criminal procedure, and equal protection questions with particular emphasis on political, social and policy-making aspects.

525 The Politics of Criminal Justice
3 hrs.
An examination of the processes of criminal justice with particular emphasis on the relationship between the political system and the administration of justice as it relates to those accused of crimes.

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 regulation 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.

Public Administration

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.

330 Introduction to Public Administration
3 hrs.
An introductory course in the administrative process in the public service. Special attention is 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.

504 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.

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 regulation 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.

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.

531 Administration in Local and Regional Governments
3 hrs.
The administrative organization, structure, procedure and forms of local units of government are analyzed.

532 The Bureaucracy
3 hrs.
An analysis of the role of public bureaucracies in the decision process of government.

533 Public Personnel Administration
3 hrs.
This course emphasizes the development of public personnel patronage and merit systems, their structure, staffing effectiveness and current problems related to the staffing of public agencies.

534 Administrative Theory
3 hrs.
A study of descriptive theories of organizational and administrative behavior relevant to governmental administrative agencies. Theories of complex formal organization, decisional theories and systems theories will be analyzed.
535 The Politics of Governmental Budgeting and Finance
3 hrs.
A survey of the political process of governmental budgeting and finance. Budget systems including program planning and budgeting systems are studied. The politics of taxation and other governmental revenues including intergovernmental transfers are studied for their impact on public policy choices.

536 Comparative Public Administration
3 hrs.
This course introduces students to a variety of public administration systems found in the contemporary world and includes a brief evolutionary history of these systems. Various theoretical models of administration and bureaucracy are compared with current practice in Western Europe, North America, the Soviet Union, and in contemporary Asian and African systems.

541 Comparative Political Systems
3 hrs.
A study of the principal types of political systems. The course examines, comparatively and theoretically, governmental institutions, political processes, political behavior, and political development.

542 Administration in Developing Countries
3 hrs.
A consideration of the role of the bureaucracy in the political system and the nature of, obstacles to, administrative modernization.

543 Latin American Political Systems
4 hrs.
A systematic survey of the political, economic and social problems of Latin America. Political problems dealing with political modernization are analyzed.

544 Soviet and East European Political Systems
4 hrs.
The governmental organization and political structure of the Soviet Union and the states of Eastern Europe. Special attention is directed to the Communist Party and its relationship to the organization of the state. The social and economic bases of the current system are stressed.

545 International Law
3 hrs.
The theory, sources, development, and general principles of international law, and the relationship of law to the dynamics of international politics. Decisions of international and municipal tribunals and the practices of states will be used to demonstrate the basic rights and obligations of states in time of peace and war. Such topics as recognition of states, diplomatic practice, treaties and neutrality will also be discussed.

557 Studies in Foreign Policy
3 or 4 hrs.
Examinations selected topics within the field of foreign policy. Topics will vary and will be announced each semester. Course may be repeated.

Foreign and Comparative Political Systems

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.

341 African Political Systems
4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes, including both traditional and modern forms, are examined in detail. Major political problems dealing with political modernization are analyzed.

342 The People and Politics of Asia
4 hrs.
A systematic survey of the social, economic and political characteristics of the area. Political culture, institutions and processes, including both traditional and modern forms, are examined in detail. Major political problems, country differences, and various paths to modernization, are analyzed.

343 Latin American Political Systems
4 hrs.
A systematic survey of the social, economic, and political characteristics of that area. Political culture, institutions and processes are examined in detail. Intra-regional differences and major political problems are analyzed.

344 Soviet and East European Political Systems
4 hrs.
The governmental organization and political structure of the Soviet Union and the states of Eastern Europe. Special attention is directed to the Communist Party and its relationship to the organization of the state. The social and economic bases of the current system are stressed.

556 International Relations
3 hrs.
This course introduces students to a variety of public administration systems found in the contemporary world and includes a brief evolutionary history of these systems. Various theoretical models of administration and bureaucracy are compared with current practice in Western Europe, North America, the Soviet Union, and in contemporary Asian and African systems.

559 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.

International Relations

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.

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.

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.

553 United Nations
3 hrs.
A study of the United Nations in action. Attention is focused on significant political problems confronting world organization, i.e. functional and dysfunctional aspects of the UN Charter, nationalism vs internationalism within the UN; conflict resolution and UN peacekeeping efforts; specific UN accomplishments in maintaining a dynamic international equilibrium; UN weakness and the future of world organization.

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.

563 Theories of Revolution
4 hrs.
Examines significant classical and contemporary theories of revolution with reference to both their analytical and normative implications.

564 Introduction to Political Analysis
3 hrs.
A consideration of the approaches and methods used by contemporary political scientists with an emphasis on the application of scientific method to the study of politics. Included are applications of leading models of politics and the formulation of concepts, generalizations and theories.
Special Studies
370 Issues in Contemporary Politics 3 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.

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.

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.

Psychology (PSY)
David O. Lyon, Chair
Galen J. Alessi
Eston J. Asher
Dale M. Brethower
Howard E. Bruns
Barbara J. Fulton
R. Wayne Fuqua
Frederick P. Gault
Bradley E. Hultena
Neil D. Kent
Chris Koronakos
Marilyn K. Malott
Richard W. Malott
Jack L. Michael
Paul T. Mountjoy
John E. Nangle
Norman M. Peterson
Alan Poling
Malcolm H. Robertson
Arthur G. Snapper
Roger E. Ulrich

The Psychology Department offers a variety of courses and programs in both experimental and applied analysis of behavior. The programs are designed both for the student who plans to pursue graduate study and for the student who plans to terminate with the baccalaureate degree.

The sequencing of courses within the various programs is extremely important. Consequently, students should consult with a Psychology Department adviser as early as possible in their course work.

Psychology credit transferred from community colleges and other accredited institutions will count toward the partial fulfillment of the requirements for a major or minor in psychology. Transfer students must consult with a Department adviser before enrolling in psychology courses, so that they might begin their studies at a point within the course sequence that is most appropriate to their previous training. Psychology students unable to sequence properly the required courses in their schedule option, should obtain permission from a departmental adviser to enroll concurrently in some of the courses.

Office 255 Wood Hall
Phone: 383-1830

Major Options
A student majoring in psychology has three options: (a) the experimental analysis of behavior option, (b) the human services option, and (c) the secondary school teaching option. The requirements for each of these options are summarized below.

Human Services Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>PSY 151</td>
<td>Introduction to Behavior Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PSY 160</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 250</td>
<td>Abnormal and Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 300</td>
<td>Statistics for the Behavioral Sciences</td>
<td>3</td>
</tr>
<tr>
<td>PSY 330</td>
<td>Methodology of Applied Behavior Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PSY 460</td>
<td>Survey of Applied Behavior Analysis Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Select from one of the following combinations

PSY 267 Supervised Practicum in Child Psychology 3
PSY 269 Research Practicum in Child Psychology 3 or
PSY 357 Practicum with Special Populations 3
PSY 359 Research Practicum with Special Populations 3

Select 24 hours required

Select 24 hours from the following 24 hours

PSY 344 Organizational Psychology 3
PSY 350 Behavior Modification and Radical Behaviorism 3
PSY 367 Practicum in Child Care 3
PSY 372 Physiological Psychology 3
PSY 374 Toward Experimental Living 3
PSY 384 Behavior Analysis of Education 3
PSY 387 Practicum in Behavior Analysis of Education 3
PSY 464 Systems and Theories in Psychology 3 or
PSY 595 History of Psychology 3

Experimental Analysis of Behavior Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>PSY 151</td>
<td>Introduction to Behavior Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PSY 158</td>
<td>Introductory Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PSY 160</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 250</td>
<td>Abnormal and Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 252</td>
<td>Experimental Analysis of Behavior I</td>
<td>3</td>
</tr>
<tr>
<td>PSY 258</td>
<td>Laboratory in Experimental Analysis of Behavior I</td>
<td>2</td>
</tr>
<tr>
<td>PSY 262</td>
<td>Experimental Analysis of Behavior II</td>
<td>3</td>
</tr>
<tr>
<td>PSY 268</td>
<td>Laboratory in Experimental Analysis of Behavior II</td>
<td>2</td>
</tr>
<tr>
<td>PSY 372</td>
<td>Physiological Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 378</td>
<td>Laboratory in Physiological Psychology</td>
<td>2</td>
</tr>
<tr>
<td>PSY 300</td>
<td>Statistics for the Behavioral Sciences</td>
<td>3</td>
</tr>
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<td>PSY 464</td>
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<td>3</td>
</tr>
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<td>PSY 595</td>
<td>History of Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Approved electives 344, 350, 367, 374, 384, 387, 464, 595 35

Acceptable minors: anthropology, biology, chemistry, communication, economics, English, linguistics, mathematics, philosophy, physics, political science, sociology, social work and, others approved by departmental advisers.

Because of the differences in the emphasis of the human services and the experimental analysis options, students might consider a major in human services with a minor in experimental analysis, or a major in experimental analysis with a minor in human services. The combination of basic science with applied human service shifts provides additional options in the selection of a career in psychology.
Secondary School Teaching Option

Students who plan to obtain a secondary school teaching certificate may elect to complete the required courses in either the experimental analysis of behavior option or the human services option. They must also complete PSY 517. These students are urged to complete teachable minors in one of the sciences or mathematics although other teachable minors may be approved by departmental advisers.

Minor Options

A student who elects to minor in Psychology has three options: (a) the experimental analysis of behavior option, (b) the general psychology option and (c) the secondary school teaching option. The requirements for each of these options are summarized in the tables below.

General Psychology Option (18 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PSY 151 Introduction to Behavior</td>
<td>3</td>
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<tr>
<td>or</td>
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<tr>
<td>PSY 150 Introduction to Human Behavior</td>
<td>3</td>
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<tr>
<td>PSY 160 Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 250 Abnormal and Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>3</td>
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</tbody>
</table>

18 hrs.

Experimental Analysis of Behavior Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PSY 151 Introduction to Behavior Analysis</td>
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</tr>
<tr>
<td>PSY 158 Introductory Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PSY 252 Experimental Analysis of Behavior I</td>
<td>3</td>
</tr>
<tr>
<td>PSY 258 Laboratory in Experimental Analysis of Behavior I</td>
<td>2</td>
</tr>
<tr>
<td>PSY 362 Experimental Analysis of Behavior II</td>
<td>3</td>
</tr>
<tr>
<td>PSY 368 Laboratory in Experimental Analysis of Behavior II</td>
<td>2</td>
</tr>
<tr>
<td>PSY 372 Physiological Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 378 Laboratory in Physiological Psychology</td>
<td>2</td>
</tr>
</tbody>
</table>

20 hrs.

Secondary School Teaching Option

Students who plan to obtain a secondary school teaching certificate with psychology as a teachable minor may elect to complete either the experimental analysis of behavior minor option or the general psychology minor option. They must also complete PSY 517.

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. Completion of a major in Psychology.
2. A University grade point average of 3.5 and a department grade point average of 3.8.
3. Completion of PSY 499, Honors Project in Psychology (6 credit hours) and the preparation of an Honors Thesis.
4. The successful defense of the Honors Thesis before a departmental committee.
5. Participation in a professional apprenticeship program (2 credit hours).

Course Descriptions

(Course described in italics is approved for General Education.)

150 Introduction to Human Behavior
3 hrs. Fall, Winter
An introduction to general psychology from the point of view of humanistic behaviorism: the use of the science of behavior to help people achieve their full potential as human beings. Emphasizes how the environment has a major influence on the way we are and how the environment can be changed so that we can become the kind of people we wish to be. Open to first year students.

151 Introduction to Applied Behavior Analysis
3 hrs. Fall, Winter
An introduction to the principles of behavior illustrated by examples of solutions to human problems. Applications are made to such areas as education, business, marriage, child rearing, and mental health.

155 Teaching Apprenticeship in Introductory Psychology
2-4 hrs. Fall, Winter
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.

157 Advanced Teaching Apprenticeship in Introductory Psychology
2-4 hrs. Fall, Winter
A laboratory course in instructional methods of teaching introductory psychology. May be repeated for credit, but does not fulfill major/minor requirements.

158 Introductory Research Laboratory
2 hrs. Fall
A companion laboratory to PSY 151, emphasizing the acquisition of basic laboratory skills in the experimental analysis of behavior. Designed for students intending to major or minor in the experimental analysis option.

160 Child Psychology
3 hrs. Fall, Winter
An introduction of behavior principles in the analysis of complex behavior with an emphasis upon early childhood learning and the techniques for teaching the child at home and at school. Topics include mental retardation and behavioral assessment. Prerequisite: An introductory psychology course.

165 Teaching Apprenticeship in Child Psychology
2-4 hrs. Fall, Winter
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.

194 General Psychology
3 hrs. Fall, Winter
An eclectic approach to a social and behavioral survey of major topics in psychology including learning, motivation, emotion, intelligence, personality, mental illness and social relations. Does not count for a major or minor in psychology. Approved for General Education.

250 Abnormal and Social Psychology
3 hrs. Fall, Winter
An introduction to the description, classification and interpretation of human behavior labeled by society as "abnormal" with an emphasis upon the social variables and environmental conditions related to the acquisition and persistence of such behavior.

252 Experimental Analysis of Behavior I
3 hrs.
An intermediate level coverage of the basic areas of respondent and operant behavior. Emphasis is placed on theoretical understanding of data, experimental methodology, and response measurement. Prerequisite: PSY 151 or permission of instructor. Prior or concurrent enrollment in ENGL 305 is required. Concurrent enrollment in PSY 256 is encouraged.

255 Teaching Apprenticeship in Abnormal and Social Psychology
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching abnormal psychology. May be repeated for credit, but does not fulfill major/minor requirements.

258 Laboratory in Experimental Analysis of Behavior I
3 hrs.
An intermediate laboratory and companion to PSY 252 emphasizing the variations in response measurement and experimental methodology in various research areas within operant conditioning. Research design, data analysis and description, as well as professional writing are stressed. Prerequisite: PSY 151 and 158 or permission of instructor. Prior or concurrent enrollment in ENGL 305 is required. Concurrent enrollment in PSY 258 is encouraged.

267 Practicum in Child Psychology
3 hrs. Fall, Winter
Supervised experience in the application of the principles of behavior analysis to early childhood learning. The Child Development Center is the site of this practicum. The Center provides accelerated education, nutrition, health and physical education programs. Students learn the techniques of direct instruction and other programs while serving as apprentice teachers. Prerequisite: PSY 150 or 151.
269 Research Practicum in Child Psychology
3 hrs. Fall, Winter
Supervised research experience at the Child Development Center which offers day care and an accelerated educational program. The course involves a variety of problems in early childhood learning, nutrition, health and safety which can be studied with pre-school children. The research topics are carefully selected to be beneficial to the children and to provide appropriate experience for the student. Data collection and report writing are stressed. Prerequisite: PSY 267. Prior or concurrent enrollment in ENGL 305 is required.

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.

305 Teaching Apprenticeship in Statistics
2-4 hrs. Fall, Winter
A laboratory course in the instructional methods of teaching elementary statistics. May be repeated for credit, but does not fulfill major/minor requirements.

330 The Methodology of Applied 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.

344 Organizational Psychology
3 hrs. Fall, Winter
A survey of organizational, business and industrial psychology, including such topics as behavior within the organization, organizational climates and structures, personnel selection and placement, performance appraisal and training, social context of human work and psychological aspects of consumer behavior.

350 Behavior Modification and Radical Behaviorism
3 hrs.
An introduction to the principles of behavior modification as applied to a variety of societal and personal problem areas, with an emphasis upon the interpretation of psychological events with behavioral as well as mental references in terms of the philosophic position identified as radical behaviorism. Prerequisite: 9 hours of psychology.

357 Practicum with Special Populations
3 hrs. Fall, Winter
Supervised experience in the application of principles of behavior analysis to special populations. The Croyden Avenue School, which is the site of this practicum, provides an educational program for the developmentally-disabled and the multiply-handicapped. Students serve as tutors in behavior change and training programs. Prerequisite: PSY 250.

359 Research Practicum with Special Populations
3 hrs. Fall, Winter
Supervised experience at the Croyden Avenue School which offers an educational program for the developmentally disabled and multiply handicapped. 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 357. Prior or concurrent enrollment in ENGL 305 is required.

362 Experimental Analysis of Behavior II
3 hrs. Fall
An advanced level coverage of respondent and operant behavior. This course is a continuation of PSY 252 with a research design emphasis upon the theoretical interpretation of data, experimental methodology and the techniques of response measurement. Prerequisite: PSY 252 or permission of instructor. Concurrent enrollment in PSY 368 is encouraged.

367 Practicum in Child Care
3 hrs. Fall, Winter
Supervised practicum at the Kalamazoo Learning Village. This course is designed to provide experience in all aspects of the conduct of a day care center. The daily schedule at the Village is combined with readings in developmental psychology, child abuse and early childhood learning. Prerequisite: PSY 160.

368 Laboratory in Experimental Analysis II
2 hrs. Fall
An advanced laboratory and continuation of PSY 258 emphasizing the variations in respondent measurement and experimental methodology in research areas within operant conditioning. Research design, data analysis and description, as well as professional writing are stressed. Concurrent enrollment in PSY 362 is encouraged. Prerequisites: PSY 252 and 258, or permission of instructor.

372 Physiological Psychology
3 hrs. Winter
An introduction to physiology and its relationship to behavior, including brain behavior interactions, behaviorally induced chemical changes and behavioral changes induced by chemical alterations. Lecture only. Prerequisite: PSY 252.

374 Toward Experimental Living
3 hrs.
A companion 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.

378 Laboratory in Physiological Psychology
2 hrs. Winter
An intermediate laboratory and companion to PSY 372 emphasizing the acquisition of laboratory techniques, surgical skills and experimental 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 encouraged. Prerequisite: PSY 258, BIOL 101 or consent of instructor.

384 Behavior Analysis of Education
3 hrs. Fall
A lecture and laboratory course in behavioral assessment, classroom contingency management, behavioral objectives and other topics in educational psychology. Prerequisite: 6 hours of psychology.

385 Behavior Analysis in Education
2-4 hrs.
A practicum apprenticeship in direct instructional methods for remedial teaching in education. May be repeated for credit, but will not fulfill major/minor requirements.

387 Practicum in Behavior Analysis in Education
3 hrs. Fall
Supervised experience in the application of the principles of behavior analysis to remedial education. Project HELP, which is the site of this practicum, assists in providing remedial education to school-age children in math and reading using the techniques of direct instruction. This course teaches the techniques of direct instruction and provides tutorial experience. This is a companion course to PSY 384. Prerequisite: 9 hours of psychology including PSY 384.

460 Survey of Applied Behavior Analysis Research
3 hrs. Fall
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 geriatrics. Prerequisite: 9 hours of psychology.

464 Systems and Theories in Psychology
3 hrs. Fall
A critical examination of the assumptions, methods and problems of several major schools of psychology; Structuralism, Functionalism, Associationism, Behaviorism, Gestalt Psychology and Psychodynamic Analysis. Prerequisite: 9 hours of psychology.

Seminars and Independent Study

397 Seminar and Practicum in Psychology
1-5 hrs. Fall, Winter
Survey and discussion of selected topics in contemporary psychology. Associated practicum activities may include teaching and/or research apprenticeships as announced in the schedule of classes. May be repeated for credit up to 12 hours. Courses may include:

  - Behavior Contracting Seminars
  - Seminar in Self Control
  - Seminar in Behavior Modification
  - Prerequisite: Permission of instructor

398 Independent Study
1-5 hrs. Fall, Winter
This course provides the undergraduate student with the opportunity for independent reading and/or research under the direction of a Department staff member. Written permission must be obtained on forms available in the department office. May be repeated for credit, although the total number of hours in a degree program is restricted to 12 hours.

499 Honors Projects in Psychology
1-5 hrs.
Independent study and research projects completed under the supervision of a faculty member and coordinated with the Department Honors Program. Prerequisite: Permission of instructor.
523 Advanced Abnormal Psychology 3 hrs.
A comparative study of pathological behavior patterns in terms of the theoretical interpretation of the cause of these behaviors and the recommended treatment techniques. Designed for students in disciplines other than psychology.

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.

525 Behavior Analysis and Women 3 hrs.
This seminar considers the methods of inquiry and analysis representative of the common contemporary approaches to the study of sex differences. The class and written assignments emphasize a behavior analysis of the issues which feminists address as distinct from promoting feminism and consciousness raising.

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.

528 Generalization, Discrimination and Concept Formation in Humans 3 hrs.
Basic theoretical interpretations, methodological issues and data analysis in the stimulus control of behavior are reviewed and analyzed with an emphasis on the potential and actual applications to human behavior.

530 Statistics for Education 3 hrs. Fall, Winter
An introduction to basic statistical procedures and concepts. Primarily for students in education. 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.

535 Instrumentation in Psychology 3 hrs. Fall, Winter
A survey of problems of response measurement in experimentation. Lecture and laboratory. May be repeated for credit.

540 Industrial Psychology 3 hrs. Winter
Application of psychological principles to industry and other organizations. An examination of employee selection, job satisfaction, training, evaluation of performance, supervision and working conditions.

542 Human Factors Engineering 3 hrs.
A survey of research of the adaptation of equipment, products and environment to human capacities. Prerequisite: Permission of instructor. Cross listed with IEGM 542.

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.

562 Management of Health-Related Behaviors 3 hrs.
A behavior analysis approach to the management of behaviors directly and indirectly affecting health. Emphasis will be placed on out-patient, public health applications and preventive approaches to health maintenance.

570 A Behavior Analysis Approach to the Area of Retardation 3 hrs. Fall
Topics will include: Historical background, assessment, training and legal implications of treatment.

572 Applied Behavior Analysis: A Systems Approach 3 hrs. Fall
The application of systems analysis concepts to the design of systems which yield behavioral measures of complex social situations.

574 Experimental Social Psychology 3 hrs.
Methodology of research with groups of animals and humans with emphasis upon design, application and ethical implications. Prerequisite: Permission of the instructor.

595 History of Psychology 3 hrs. Fall
The historical and philosophical foundations of contemporary American psychology.

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
**Religion (REL)**

E. Thomas Lawson, Chair  
Guntram Bischoff  
H. Byron Earhart  
David Ede  
Nancy Falk  
Otto Grundler  
Maynard Kaufman  
Cornelius Loeew  
Rudolf Siebert

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.

**Requirements for Majors and Minors**

A major in religion consists of a minimum of 20 hours and includes REL 200 (Introduction to Religion), two courses in the field of Historical Studies, and at least one course from each of the remaining three fields (Morphological Studies, Methodological Studies, Constructive Studies). Two of these courses should be at the 500 level.

A minor in religion consists of a minimum of 16 hours and includes REL 200 (Introduction to Religion). One course is recommended in the field of Historical Studies. The two remaining courses should be taken in two of the three remaining fields.

**Teaching Minor in the Academic Study of Religions**

A teaching minor leading to state certification in the Academic Study of Religions consists of a minimum of six courses, totaling 22 semester hours, and composed as follows:

1. REL 200 Introduction to Religion;  
2. REL 304 African Religions;  
3. One course in the Christian, Jewish or Islamic religions, within the category of Historical Studies;  
4. One course in Comparative Studies;  
5. One course in any religion other than those specified above under (2) and (3), within the category of Historical Studies, or one course in Methodological Studies;  
6. REL 521 The Teaching of Religion in the Public School

**Course Descriptions**

(Courses described in italics are approved for General Education.)

**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. Does not apply towards major or minor in Religion.

**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 interdisciplinary aspects of much of the inquiry, and an examination of the consequences of this inquiry for problems of self-understanding in the context of western culture in general, and American society in particular.

**Historical Studies**

**302 Religion in the Indian Tradition**  
4 hrs.

This course draws its materials primarily from the great religious traditions native to India: Brahmanism, Buddhism, Jainism, and Hinduism. Particular attention is paid to the continuities of motif and practice that allow one to speak of “Indian Religion” as a unified phenomenon with a single history. Consideration is also given to such problems as the relationship between Indian religions and Indian culture and the relationship between Indian religious forms and the religious forms of other cultures.

**303 Chinese Religion**  
4 hrs.

A study of the historical continuity and overall unity in the Chinese religious tradition. The formal religions of Confucianism, Taoism, and Chinese Buddhism, as well as the informal religious movements of “ancestor worship,” family religion, and state religion will be discussed. An attempt is made to assess the meaning of religion in Chinese culture.
304 African Religions
4 hrs.
This course is designed to introduce the student to the complexity and varieties of the religions of Africa. This is done by focusing on the myriad religious forms, e.g., ideas of the soul, cosmology, initiation rites, etc., which have emerged during the long history of Africa. The course pays attention to religious forms which either came into being with or define a specific cultural stratum: for example, the religious forms of hunters and food-gathers, horticulturalists, agriculturalists, nomadic herders. Finally an attempt is made to see what changes Westernization has made in the African appropriation of their traditional religious symbols.

305 The Christian Tradition
4 hrs.
An introduction to some of the salient features of the Christian experience as expressed in thought, practice and institutional structures. In an effort to elucidate the all-pervasive influence Christianity has had on Western culture, the course focuses on such problems as the nature of the origins of Christianity, the most important stages in its development, the interaction of Christian experience and current world-view of the host cultures, and particularly the phenomenon of secularization which is examined in the light of the astronomical, biological, historical, psychological and sociological "attacks" by modernity upon Christianity.

306 The Jewish Tradition
4 hrs.
This course traces the history and development of Judaism from its roots in the Ancient Near East to the present, and its role in the shaping of Western consciousness. Particular attention is given to the periods of radical social, political and cultural change in Jewish history and hence to the critical problem of Jewish identity. An analysis of Jewish writings, customs, and institutions taken from different periods of Jewish history reveals that Jewish people have discovered and expressed their identity within a religious framework that includes myths and rituals, festivals, and holy days, celebration of the past and anticipation of the future, as well as social movements and political revolutions.

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 Muhammad, the Qur'an, geographical expansion of the Muslim community, Islamic law, mysticism, sectarian development, philosophy, and Islam in the modern era are the major topics to be examined during the term.

308 Japanese Religion
4 hrs.
A study of the historical continuity and overall unity in the Japanese religious tradition. The major organized religions of Shinto and Japanese Buddhism, and also the influence of Taoism, Confucianism, and Christianity are discussed. Also taken up are the informal religious movements of "ancestor worship," family religion, and state religion. An attempt is made to assess the meaning of religion in Japanese culture.

309 Comparative Studies in Religion
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.

310 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, Revolution, Femininity as a Religious Form; Great Islamic Thinkers; the Hindu Yogas; the Occult Tradition.

Methodological Studies in 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.

320 The Philosophy of Religion
4 hrs.
This course is concerned with the correlation between religion and the human subject—the religious or a religious individual. The central interest of the course is with religious propensities, feelings, impulses, passions, attitudes, motivations, values, ideas, prejudices. Critical questions such as the following will be asked: What is the function of religious faith for the nervous stability, mental health and 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?

323 Religion and Revolution
4 hrs.
In this course, religion will be looked upon as a driving force of social and cultural evolution. The historical and contemporary record shows religion capable of exercising profound revolutionary tendencies as, for instance, in the Peasant War in 16th century Germany or in the present South American situation. The course will be concerned with religion's capability to promote fundamental change. It will explore the following main issues: The utopian and prophetic elements in Eastern, Mid-Eastern, and Western religious traditions; comparison of contemporary religious and secular political hopes and aspirations; the correlation of political exodus utopias and religious eschatologies; the mutual reproduction of religious theory and social and political practice.

324 Psychological Elements in Religion
4 hrs.
This course is designed to introduce the student to the complexity and varieties of the religions of Africa. This is done by focusing on the myriad religious forms, e.g., ideas of the soul, cosmology, initiation rites, etc., which have emerged during the long history of Africa. The course pays attention to religious forms which either came into being with or define a specific cultural stratum: for example, the religious forms of hunters and food-gathers, horticulturalists, agriculturalists, nomadic herders. Finally an attempt is made to see what changes Westernization has made in the African appropriation of their traditional religious symbols.

500 Historical Studies in Religion
2-4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Zen Buddhism; Buddhism; Taoism; Shinto; New Religions of Japan; Religion in Japanese Literature; Islam in the Modern World; Christian Theology to 1500; Renaissance and Reformation Theology; Mystical Dimension of Islam.

311 Myth and Ritual
4 hrs.
Eric Dardel, an anthropologist, has written: "Myth says with utmost seriousness something that is of essential importance." In this course an attempt will be made to discover just what this important something is and how it is actualized in certain rituals. Myths and rituals will be taken from a variety of historical traditions in order to reflect the cultural milieu of the communities whose lives are governed by them. Special problems to be considered will be the relationship between myth and cult, the problem of time and myth, the logic of mythic forms, etc.

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.

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, Revolution, Femininity as a Religious Form; Great Islamic Thinkers; the Hindu Yogas; the Occult Tradition.

Methodological Studies in Religion
4 hrs.
This course is concerned with the correlation between religion and the human subject—the religious or a religious individual. The central interest of the course is with religious propensities, feelings, impulses, passions, attitudes, motivations, values, ideas, prejudices. Critical questions such as the following will be asked: What is the function of religious faith for the nervous stability, mental health and 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?

520 Methodological Studies in Religion
2-4 hrs.
The topic to be announced in the Schedule of Classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Scientific Issues in the Study of Religion; the Critical Theory; Myth and Symbol in Religion and Literature.

521 The Teaching of Religion in the Public School
2 hrs.
This course focuses on methods and issues involved in the teaching of religion in the public school. Particular attention is given to the problems of its constitutionality, the distinction between the academic study of religion and religious instruction, and the question of meaning. Various approaches to the teaching to teaching of religion are critically evaluated. Teaching methods appropriate to the level of instruction, availability, organization, selection and use of materials are discussed.

Required of all students following a Secondary Education Curriculum which includes the Academic Study of Religions as a minor. (This course is not applicable to the regular religion major/minor program.)
Constructive Studies in Religion

330 Studies in Contemporary Theology 4 hrs.
The topics such as the following will be studied: Radical Theology, Modern Catholic Theology, Ecumenical Theology, Christian-Marxist Dialogue, etc. Radical theology involves a study of the issues involved in Death of God Theology as well as secular theology as represented by Catholic, Protestant, and Jewish thinkers. Modern Catholic Theology involves a study of the problems and promises of the Church's affirmative response to the reality of the modern world, particularly since Vatican II. Ecumenical Theology involves a study of the issues which divide Christians and the attempt to resolve these issues in a conciliatory manner. The Christian-Marxist Dialogue involves a study of the theological and ethical issues which separate a religious perspective, particularly the Christian one, from a Marxist's view of the world as well as the similarities of these perspectives.

332 Religion and Social Ethics 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, thermoneutral and chemical warfare, artificial insemination, euthanasia, and drug addiction. Particular attention will be paid to how different styles of social ethics relate themselves to fundamental changes in contemporary marriage and family life as well as in the economic, political, and cultural sphere.

333 Religion and Ecological Awareness 4 hrs.
A study of our society's attitudes toward the natural environment with special attention given to the sanctions which underlie these attitudes, a consideration of the various religious responses to the environmental crisis, and an inquiry into the possibility of reappropriating a sense for the sacrality of nature through the emerging ecological awareness.

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 by religions in such contexts. The specific context of religion to be studied in this course is that of industrial society. For religion to be understood in more than historical terms it is important that attention be paid to this kind of context. As a consequence of such a focus questions also are raised about the methods developed by religions and their relationship to the systematic study of religion.

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.

530 Constructive Studies in Religion 2-4 hrs.
The topic to be announced in the schedule of classes. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Religious Images of Man, Christian Humanism, the Structure of Religion, the Future of Religion, Religion, Language and Structuralism.

598 Readings in Religion Variable Credit
Research on some selected period or topic under supervision of a member of the Religion faculty. Approval of the instructor involved and Chairperson of the Department must be secured in advance of registration.
Sociology Major

A major in sociology consists of a minimum of 30 hours in sociology courses, SOC 200, 300 and 382 are required. The balance of the courses may be selected by the student with the following limitations: (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. These limitations apply whether students choose the concentration described below or elect to make their own selections to complete the required number of hours. Transfer students should see the department adviser. Any transfer credit in sociology without a stated equivalent must be evaluated by the department if it is to apply toward a sociology major or minor.

Students in secondary education must take SSCI 300 (Teaching of Social Studies in Secondary Schools) to meet the state certification requirements for a teaching methods course. This course may not be included in the hours required for a sociology major or minor. A major slip is required.

Sociology Minor

A minor in sociology consists of 15 hours for students in curricula other than education. Students qualifying for teacher certification are required to complete a minimum of 20 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.

Social Psychology Concentration

Social Psychology is the study of the impact of group life on individual behavior, thought and personality development. Training in social psychology provides a valuable background for a variety of positions in human service organizations and can provide an excellent theoretical foundation for graduate work, in addition to fields such as social work, counseling, public administration and criminology.

Required courses: SOC 200, 300, 382, 320, 420. The remainder of the program is to be selected from courses within and outside the department of sociology and must be selected in consultation with the departmental adviser. A major slip is required. Students may also minor in social Psychology. See below.

Urban Studies Concentration

Provides valuable training for students desiring research or staff positions in municipal government or various urban programs. This concentration is most valuable, however, as preprofessional training for those interested in such fields as urban planning, community development, architecture, or law.

Required courses: SOC 200, 300, 382, Urban Core: SOC 353, 354, or GEOG 361, SOC 553.

To complete this 39-hour major, additional sociology courses and cognate courses must be selected in consultation with the department adviser. A major slip is required for this major.

Sociology/Anthropology Major

A combined major in sociology and anthropology consists of a minimum of 30 hours, with at least 12 hours in each department. SOC 200, 300, 382, and ANTH 210, 240, and 250 are required. Additional courses in either department may be selected by the student.

Sociology Minor

A minor in sociology consists of 15 hours for students in curricula other than education. Students qualifying for teacher certification are required to complete a minimum of 20 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.

Social Psychology Concentration

Students may complete a minor in sociology with a concentration in social psychology. This minor consists of 15 hours in sociology and requires SOC 200, 300, 420, plus two additional social psychology elective courses. This minor is not available to sociology majors. A minor slip is 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.

Major (CRJ) Curriculum: 36 hours

Requirements include: (1) Curriculum prerequisites, 9-10 hours; Two of: SOC 200, 210 or 264 and ONE of: PSCI 200 or 202, (2) Criminal Justice Core, 21 hours; SOC 382, 462, 464, 564, 566, SWK 465, and FCL 560. (3) Research Methods, 3-5 hours; SOC 382 or PSCI 550, (4) Special area courses (Law Enforcement, Courts or Corrections), 6-8 hours; (5) Elective courses, 2-4 hours.

Under authorization of the Michigan Law Enforcement Officers Training Council, law enforcement certifiability is available to coincide with graduation for students who meet the personal and academic requirements. Major slips are required for this major. Students should see the adviser at the beginning of the program in order to be sure the necessary prerequisites are included. Transfer students interested in this major are advised to consult with the department adviser. This minor may be combined with a sociology major.

Criminal Justice Minor

A 24 hour-criminal justice minor is available, patterned after the major. Information of courses required may be secured from the department adviser. Minor slips are required. This minor may not be combined with a sociology major.

Course Descriptions

(Courses described in italics are approved for General Education.)

Introductory

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.
Social structures, attitudes, beliefs and values

Technology

122 Death: Dying and Bereavement 3 hrs. Social structures, attitudes, beliefs and values about death, dying and bereavement in contemporary American society as well as in other societies and other time periods will be considered. Medical, legal, religious, and psychological issues in relation to death, dying, and bereavement will be discussed. (Not recommended for persons recently bereaved.)

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.

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.

200 Principles of Sociology 3 hrs. An introduction to and survey of the discipline of sociology and its major fields of study. Selected sociological concepts, theories, and research findings will be discussed. Required for sociology majors and minors.

Theory

300 Sociological Theory 3 hrs. A study of major theoretical viewpoints in contemporary sociology. The course is oriented toward the understanding, application, and extension of these major perspectives. Required for sociology majors. Prerequisites: SOC 200.

500 History of Social Thought 3 hrs. A critical survey of the social thinking of outstanding students of society from Plato to modern social scientists. Prerequisite: 9 hours of sociology.

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 or 600 or consent of instructor.

Social Problems

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, and mass communication. Problems selected for emphasis may vary with the instructor. Required for sociology minors.

314 Ethnic Relations 3 hrs. A study of race and ethnic relations, stressing a global perspective of social relations among varied peoples at different levels of development, and in different parts of the world.

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, fanaticism, addiction, alcoholism, aging, and international tensions. May be repeated for credit with a different topic. Prerequisite: SOC 200 or 210, or consent of instructor.

Social Psychology

320 Introduction to Social Psychology 3 hrs. An introduction to social psychological theory and research, covering the interaction of individuals and the relationships of individuals to groups. Includes such topics as social influence, attitudes, socialization, and personality.

420 Theories in Social Psychology 3 hrs. A study of major theories in contemporary social psychology. The course will compare divergent theoretical orientations as they apply to learning, social interaction, social knowledge, emotions, and the self and will explore the potential for theoretical integration. Prerequisite: SOC 320.

520 Studies in Social Psychology: Variable Topics 3 hrs. Further analysis of selected topics in social psychology not intensively covered in other courses. Specific topic will be designated in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: SOC 320.

521 Childhood Socialization 3 hrs. An investigation of the development of individual knowledge and abilities during childhood as acquired through social interaction and biological maturation. Social theories of learning and child development will be covered, with emphasis on such topics as biological maturation and social learning, language acquisition, the development of self, and the acquisition and systematic organization of beliefs, attitudes, norms and values. Prerequisite: SOC 320 or consent of instructor.

522 Adult Socialization 3 hrs. An examination of the processes of social learning and personality development from adolescence through middle age. The course will focus on the selection and performance of adult roles, continuities and discontinuities in role learning across the life span and adaptation to social events as these affect the development and change of adult personalities. Prerequisite: SOC 320 or 521, or consent of instructor.

523 Contemporary Social Movements 3 hrs. A study of the origins, growth, and effects in contemporary society of social movements. Selected social movements including communism, fascism, the radical left, the radical right, women's liberation, etc., will be analyzed. Prerequisite: SOC 200 or 600, or equivalent.

525 Social Psychology of Education 3 hrs. An intensive examination of the roles and the interaction of students, teachers, and administrators in the school setting. Particular attention will be given to the importance of peers, family, and social structure. Prerequisite: SOC 320 or equivalent.

528 Research Methods in Social Psychology 3 hrs. An examination and comparison of major research strategies in social psychology as applied to several selected major topics within the field. Students will be expected to review, critique, and conduct research within a selected area. Prerequisite: SOC 382 or equivalent.

Comparative Sociology

335 Modern Latin American Societies 3 hrs. An introduction to contemporary Latin American societies focusing on their developmental problems and processes. Topics may include rural-urban migration, and reform and government policies in the urban industrial sector.

336 Modern Japanese Society 3 hrs. An introduction to Japanese society, focusing upon current developments in the process of industrialization and urbanization. Examination of the impact of these processes in Japanese population, family life, village organization, urban community, class structure, and personality.

337 Modern Arab Societies 3 hrs. An introduction to the Arab societies of the Middle East and North Africa, focusing on current tribalism and ethnic group tension. The course examines the influences of the three major western religions and the religious, social, political, and economic tensions that have ensued in intergroup relations.

430 Sociology of Development 3 hrs. An examination of the social factors which influence the development of currently developing areas in Africa, Asia, and Latin America. These factors include such phenomena as urbanization, nationalism, the population explosion, welfare institutions and practices, industrialization and the accumulation of ethnic minorities. Prerequisite: SOC 200 or consent of instructor.

531 Studies in Social Change: Designated Areas 3 hrs. Analysis of social change in specific geographic or national areas designated in the course title as scheduled. Change is examined through perspectives from history, anthropology, and sociology. May be repeated for credit with a different area. Prerequisite: SOC 200 or 600.

532 Introduction to Comparative Sociology 3 hrs. An introduction to the history, major theoretical perspectives and methodological issues associated with cross-national and cross-cultural studies. Particular emphasis will be placed upon those studies which have been central to the development of the comparative approach in sociology. Prerequisite: Consent of instructor.
533 Comparative Institutional Studies 3 hrs.
A comparative study of the structure and functioning of selected aspects of culture in America and other selected countries, such as the legal structure, family and educational systems, the welfare structure, stratification, economic institutions, political organization, the role of science and the basic character of social change. Prerequisite: SOC 200 or 600, or equivalent.

535 Changing Social Systems: Sub-Saharan Africa 3 hrs.
A study of the erosion of traditional tribal systems and the rise of secondary associations and social systems resulting from the impact of European culture and other contemporary world influences. Prerequisite: SOC 200 or equivalent, or consent of instructor.

Community and Class

250 Rural Communities 3 hrs.
Rural American society is a complex social situation involving the classic social institutions and problems, including social class, religion, poverty, and diverse racial and ethnic groups. This course attempts to examine these institutions and problems through current literature and by means of a series of field trips to visit examples of these social structures in southwestern Michigan. Constraining rural communities in other countries may also be considered.

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 American and other societies.

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.

354 Population and Society 3 hrs.
A sociological investigation into the dynamics and consequences of the world-wide population explosion, and U.S. population problems such as family planning, the baby boom, zero population growth, and ecological issues. Prerequisite: SOC 200.

356 Social Inequality 3 hrs.
This course covers the several forms of social inequality that exist in American society today: racial, sexual, age, and religious. The major theoretical contributions to the study of social inequality will be placed in historical perspective. Also of interest are recent educational, occupational, and income differences, treatment by some of the major institutions of society, such as the criminal justice system or the medical and health-care systems.

552 Sociology of Aging 3 hrs.
An examination of the process of aging in American society, with particular emphasis on the periods of late maturity and old age. Consideration will be given to theories of aging and the social implications of age grading, the meaning of work and retirement, and the status and roles of the aged. Prerequisite: 6 hours of sociology including SOC 200 or 600, or consent of instructor.

553 Urban Sociology 3 hrs.
An introduction to sociological theory and research on the city including ecological theory, social psychology, institutional analysis, structure and processes like metropolitanization, suburbanization, and planning. Cities in developed and developing societies will be compared and contrasted and specific attention will be given the industrial bases of current urban theories.

556 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. Prerequisite: SOC 200 or 600, or consent of instructor.

Criminal Justice

264 Introduction to Criminal Justice 3 hrs.
An overview of the criminal justice system as it currently operates in its three major components: police, courts, corrections. A broad-based interdisciplinary perspective is employed to introduce the beginning student to the process of criminal justice in modern America. Particular attention is placed on the discretionary authority of officials who are engaged in the decision making roles required to process suspects from arrest to release.

362 Criminology 3 hrs.
A study of the phenomenon of crime as a social problem. Particularly stressed is an analysis of the relationship between law and society and social structure and crime. Discussion centers around conventional white collar and political crimes. The offender populations are identified and analyzed. Prerequisite: SOC 200 or 210.

462 Criminal Justice Process 3 hrs.
An analysis of the substantive and procedural criminal law as it relates to each stage of the criminal justice process. The focus will be on the sociological and legal implications of discretion and court decisions from arrest to conviction or release. Prerequisite: SOC 362 or consent of instructor.

464 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 organizational 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.

465 Correctional Process and Techniques 3 hrs.
This course is scheduled as SWRK 465. An overview of the correctional process as it can operate in probation, prison and parole to alter the criminal behavior patterns of legally defined offenders. A broad perspective is employed based on existing criminology theory and accumulated knowledge of the phenomena of crime and delinquency. Selected techniques for correctional behavior modifications are studied in relation to a typology or normative deviancy in terms of both etiology and rehabilitation. Prerequisite: Consent of instructor.

564 Juvenile Delinquency and the Community 3 hrs.
A study of juvenile delinquency as a social problem. Externs, causative factors, methods of treatment, and programs of prevention and control are covered. When feasible, community resource people are invited to participate. Prerequisite: SOC 200 or 600.

566 Advanced Criminology 3 hrs.
Advanced Criminology is a theoretically oriented course. Looking historically at the philosophical belief systems, classical and modern theories of crime are revealed. Specific types of crimes such as property crimes, violent personal crime and corporate crime are discussed and interpreted within the theoretical paradigms reviewed. Prerequisite: SOC 362.

567 Corporate and White-Collar Crime 3 hrs.
An intensive analysis of corporate and white-collar crime from a sociological perspective. Topics covered include the problems involved in defining corporate and white-collar crime, as assessment of the costs of these crimes, a description of the nature, extent, and distribution of these forms of criminal behavior, the etiology of corporate and white-collar crimes, and societal and legal reactions to these types of crime. Prerequisite: SOC 362.

Institutions

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, region, 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 or consent of instructor.

375 Sociology of Industrial Relations 3 hrs.
An introduction to the problems arising from industrial 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.
376 Sociology of Education
3 hrs.
A survey of contemporary educational problems from a sociological perspective. Includes such topics as race relations in the schools, teacher professionalization, classroom behavior, teacher organizations, and studies on modern youth culture. This course is intended as a general introduction to sociology of education for sociology majors and other interested students. Prerequisite: SOC 200.

540 Sociology of Medicine
3 hrs.
A comprehensive survey of concepts and research findings in the field of the sociology of medicine. Topics to be covered include: the distribution of illness in society, relationships between social stress and disease, illness as a social process, health care professionals, the sociology of health care delivery. Prerequisite: SOC 373 or graduate.

570 Studies in Social Institutions: Variable Topics
1-4 hrs.
An examination of a selected topic in the area of social organization or institutions. The focus of the course will be substantive, but theoretical and methodological concerns will also be covered. Possible topics could include work and leisure, occupations and professions, sociology of science, mass society, macro-sociology of science, mass society, macro-sociology, arts, and others. May be repeated for credit with a different topic. Prerequisite: SOC 200 or 600, or equivalent.

573 Sociology of Political Behavior
3 hrs.
Systematic sociological theory and research applied to the study of political organization and behavior in the United States and in selected countries abroad. Such topics as political parties, voting, bureaucracy, and political ideology will be considered. Prerequisite: SOC 200 or 600, or consent of instructor.

574 Sociology of Religious Institutions
3 hrs.
A study of the social role of religious institutions and beliefs, with particular reference to the United States. The course considers social factors affecting the development of different types of religious institutions and the influence of religion on American society. Prerequisite: SOC 200 or 600, or equivalent.

575 Industrial Sociology
3 hrs.
The sociological study of industrial organizations and of the process of industrialization. The impact of technology and related factors on work organizations, the structure and operation of labor unions, and the changes occurring in industrial society are discussed. Prerequisite: SOC 200 or 600, or equivalent.

576 Sociology of School Organization
3 hrs.
Advanced studies of education as an institution, emphasizing interaction with other social institutions and analysis of internal organization. Attention is focused on the school and social change, schooling and the control of society, and schooling and stratification, as well as impediments to change, power and authority structures and the schools, the teaching profession, and student social structures. Prerequisite: 6 hours of sociology or consent of instructor.

577 Sociology of Learning
3 hrs.
Advanced studies of education focusing on the impact of culture and school organization on learning in the educational setting. Topics include cultural forces such as ethnicity, religion, socio-economic status and bureaucratic structure, classroom organization, team teaching and the open classroom, segregation, and school type. Prerequisite: 6 hours of sociology or consent of instructor.

578 Sociology of Law
3 hrs.
An examination of legal organization, the legal profession, and legal norms in the United States and other western societies. Emphasis will be placed upon the relationship between the legal system and the society in which it functions. Prerequisite: SOC 200 or 600, or equivalent.

Research

382 Methods of Sociological Inquiry
5 hrs.
An introduction to quantitative and qualitative methods of empirical research in sociology and the description of findings. Theory and techniques of research design are considered, including formulation of hypotheses, sampling, and the collection, analysis, and interpretation of data. Laboratory sessions provide special assistance. Required for sociology majors, who are urged to take this course following SOC 200, to develop ability to evaluate research findings in subsequent content courses. Prerequisite: SOC 200.

580 Social Statistics
3 hrs.
An introduction to statistical reasoning and application with particular reference to social science. The course will view statistics as an aspect of scientific inquiry and consider problems of analysis and interpretation of typical social science data. Not for sociology majors.

581 Logic and Analysis of Social Research I
3 hrs.
This course is designed to provide thorough grounding in basic univariate and bivariate descriptive and inferential statistics for social sciences. Prerequisite: graduate standing or SOC 382.

Family

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.

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.

590 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 600, or equivalent.

592 Family Life Education and Counseling
3 hrs.
Provides the student with working knowledge of the methods and materials appropriate in the school, the church and other social situations, for working with individuals and small groups who desire preparation for marriage and parenthood. Some attention will be given to the techniques for handling counseling opportunities arising out of these teaching situations. Prerequisite: SOC 200 or 600, or consent of instructor.

593 Marriage and Family in Middle and Later Years
3 hrs.
A systematic analysis of the marital and family system and interpersonal relationships of husbands and wives, and parents and children during middle age and the later years of married life. Prerequisite: SOC 390 or equivalent, or consent of instructor.

Independent and Special Studies

195 Contemporary Social Issues: Variable Topics
1-3 hrs.
This course is designed to explore topics of current sociological and general student interest in a substantive fashion at an introductory level. May be repeated for credit with a different topic.

495 Special Topics in Sociology: 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.

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. Prerequisite: Written permission of instructor or supervisor.
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.

595 The Sociological Enterprise: Variable Topics
2-6 hrs.
A survey of various topics or a concentration on one special topic of interest to advanced majors and graduate students dealing with the discipline of sociology and career opportunities in the field. Examples of such topics are: Women in Sociology, Ethics of Social Research, Development of Sociology in Third World Countries, etc. The Course is not repeatable. Prerequisite: SOC 200 or 600 and permission of instructor.

598 Directed Individual Study
2-6 hrs.
A program of independent study (reading or research) to provide the unusually qualified sociology student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the department. The initiative for planning the topic for investigation must come from the student. Approval is contingent upon the merit of the proposal. Two or three hours credit per semester, cumulative to six hours. Enrollment beyond the first semester may be either for the same topic or for a new topic. Prerequisite: Consent of instructor and the department chairperson.

Spanish
See “Languages and Linguistics” in the College of Arts and Sciences.

Women’s Studies Minor
See “Interdisciplinary Programs” in the College of Arts and Sciences.

World Literature Minor
See “Interdisciplinary Programs” in the College of Arts and Sciences.
The function of the professional 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 activities.

The four main programs in the College of Business are:

1. Business Administration—Bachelor of Business Administration Degree.
2. Master of Business Administration for graduate students with Liberal Arts, Engineering, Business or other undergraduate preparation.
3. Master of Science in Accounting for students desiring intensive preparation for a professional accounting career.
4. Master of Science in Business for students desiring intensive preparation for professional careers in Business.

Business Administration Curriculum (BBA Degree)

I. Pre-Business Curriculum

Any entering or transfer student planning to pursue business administration as a curriculum will be admitted to a pre-business curriculum and will work with a business adviser in the development of a planned program.

The pre-business curriculum requirements are:

1. Completion of a minimum of 60 semester hours.
2. An acceptable overall grade point average (minimum of 2.50).
3. Minimum grade of "C" in the following pre-business courses or approved alternatives:
   A. BIS142, Informational Writing .3 hours
   B. One of the following: .3 hours
      GSSC 121, Dimensions of Human Behavior; PSY 194, General Psychology; PSY344, Psychology in Business and Industry; SOC 200, Principles of Sociology
   C. MATH 116, 122 or 200 3 hours
   D. BIS 102, Intro, to Information Processing 3 hours
   E. ECON 201 and 202 Principles of Economics 6 hours
   F. ACTY 210 and 211, Principles of Accounting 6 hours
   G. BIS 242, Business Communications 3 hours
   H. MGMT 200, Business Statistics 3 hours

4. Additional hours will be taken in the following areas during the 60 semester hours:
   A. General Education
      1. Distribution Program: Area I Humanities and Fine Arts, 6 hours; Area III Natural Science, 3 hrs. or
      2. Related General Integrated Program for business (information available through College of Business Advising Office).
   B. Physical Education, 2 hours
   C. Non-business elective, 19 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 a minimum of 60 semester hours of work. Upper level transfer students will apply for admission to the professional business administration curriculum prior to their first semester of enrollment.

Admission of transfer students from accredited two- and four-year institutions will be made on a similar basis. The same criteria for admission listed above will apply. Equivalent transfer work must be credited to the same areas listed above.

Work completed at WMU with less than a “C” may not be completed by transfer work from another institution.

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 College of Business during their first two years on an appointment basis. After admission to the College, students will be assigned to a specific adviser in the Academic Advising Office. After a choice of major has been made, students will also be assigned an adviser in that particular area. Students majoring in 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.

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. MGMT 300 Fundamentals of Management .............................................. 3 hours
   B. FCL 320 Business Finance .............................................................. 3 hours
   C. FCL 340 Legal Environment ......................................................... 3 hours
   D. MKTG 370 Principles of Marketing .................................................. 3 hours
   E. MGMT 489 Management Problems .................................................. 3 hours
   F. Advanced Quantitative (choose one: FCL 420, ECON 400, MGMT 360, MKTG 471) .................................................. 3 hours
   G. Advanced ECON (choose one: 303, 306, 400, 404, 420, 445) ........... 3 hours
   H. Major (minimum) ........................................................................ 21 hours
   I. General Education ......................................................................... 8 hours
      1. Distribution Program: Gen. Ed. ................................................. 300+, Area IV and I-V
      or
      2. Related General Integrated Program for business
   J. Electives ..................................................................................... 12-15 hours

2. Average grade of “C” in all College of Business courses is required.
3. Transfer work towards upper division courses must meet the following criteria:
   A. Approval by the Office of Academic Advising and the department.
   B. Minimum grade of “C”
   C. Work completed at WMU with less than a “C” may not be completed by transfer work from another institution.

Advising

For questions regarding BBA curriculum requirements and transfer credit equivalencies, contact the College of Business Advising Office, North Hall.

Special Notes

1. A further requirement is that a minimum of 40% 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 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 agreement and acceptable validation procedures.
4. Regarding the Mathematics 116 requirement, a 3-hr. 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.

Areas of Concentration In Business Administration

To graduate with any major from the College of Business, it is necessary to be enrolled in the Bachelor of Business Administration curriculum.

Accountancy (ACTY)

Major Requirements:

ACTY 210, 211, Principles of Accounting .................................................... 6
ACTY 310, 311, 411, Financial Accounting ................................................... 9
ACTY 322 Managerial Accounting ............................................................... 3
ACTY 324 Income Tax Accounting ............................................................... 3
ACTY 516 Auditing ............................................................................. 3
Electives in Accountancy .................................................................. 3
FCL 352 Commercial Law ................................................................. 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, 211, and 310, are required plus 6 additional hours selected with the students’ professional objectives in mind. The remaining 6 hours must be selected from the following courses: FCL 320 and 340, BIS 102, MGMT 300, and MKTG 370.

Accountancy Electives Available for Majors and Minors:

ACTY 420 Topics in Accounting ............................................................. 3
ACTY 513 Accounting Information Systems ............................................ 3
ACTY 514 Institutional Accounting .......................................................... 3
ACTY 518 Accounting Theory and Problems .......................................... 3
ACTY 522 Cost Accounting—Theory and Practice .................................. 3
ACTY 524 Studies in Tax Accounting ....................................................... 3

Advisers: Report to the Department of Accountancy, 150 East Hall for assignment to an adviser.

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.

Business Information Systems (BIS)

The Department of Business Information Systems offers four undergraduate major areas of concentration as shown below. The courses are to be taken in the sequence indicated, following prerequisites as listed after the catalog course descriptions.

1. Administrative Systems (ADS)

   BIS 102 Introduction to Information Processing ....................................... 3
   BIS 260 Business Systems and Procedures I ......................................... 3
   BIS 365 Office Organization and Technology ....................................... 3
   BIS 388 Records Management ............................................................. 3
   Plus 6 hours, as advised, from: ....................................................... 6
   BIS 360 Business Systems and Procedures II and
   BIS 556 Office Management or
   BIS 484 Micrographics and Reprographics and
   BIS 486 Corporate Records Centers
   Plus 9 hours, as advised, from: ....................................................... 9
   CS 111 Computer Programming I ......................................................... 3
   BIS 261 COBOL ........................................................................ 3
   BIS 264 Report Program Generator ..................................................... 3
   BIS 343 Report Writing ................................................................ 3
   BIS 410 Internship in Administrative Systems ..................................... 3
   BIS 557 Topics in Administrative Systems ......................................... 3
   BIS 596 Independent Study in Administrative Systems ...................... 3
   BIS 598 Readings in Administrative Systems ...................................... 3

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2. Business Communication (BCM)
   - BIS 142: Informational Writing 3
   - BIS 242: Business Communication 3
   - BIS 244: Organizational Communication 3
   - BIS 343: Report Writing 3
   - BIS 344: Business Communication Problems and Practices 3
   - BIS 422 Advanced Business Writing 3
   - BIS 554: Topics in Business Communication (Business Communication Media, Business Communication Systems, Business Publications, etc.)

3. Computer Information Systems (CIS)
   - CS 111: Computer Programming I 3
   - CS 295: College Systems and Procedures I 3
   - BIS 261: COBOL 3
   - BIS 360: Business Systems and Procedures II 3
   - BIS 362: Advanced COBOL 3
   - BIS 462: Applied CIS Development Project 3
   - CS 542: Data Base Management Systems 3
   - CS 561: Senior Project 3
   - CS 564: Information Resource Management 3

4. A concentration in Consumer Relations, using courses from several areas in the College of Business, is also available. See BIS Department Chair.

Finance and Commercial Law (FCL)
The Finance and Commercial Law Department offers majors in general business, finance, and real estate and minors in general business, finance, law, insurance, and real estate.

1. Finance and Commercial Law Majors
   - Option 1: Finance Major (FIN)
     Advisers: Burdick, Edwards, Jones, Issa, Planisz, and Shah
     In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business degree for which FCL 320 is required, all finance majors must complete 21 hours of finance course study. Six of the 21 hours shall consist of Introduction to Financial Markets 325 and Investment Analysis 326. The remaining fifteen hours shall be selected in consultation with an adviser 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.

   - Option 2: Real Estate Major (REA)
     Adviser: Scheu
     In addition to the completion of the curriculum requirements for all students pursuing the Bachelor of Business degree, all real estate majors must complete 24 hours of study consisting of the following:
     - FCL 320: Real Estate Fundamentals 3
     - FCL 331: Real Estate Finance 3
     - FCL 332: Real Estate Investment 3
     - FCL 333: Real Estate Appraisal 3
     - FCL 429: Mortgage Banking 3
     - FCL 434: Real Estate Land Development 3
     - FCL 437: Real Estate Management 3
     - FCL 532: Real Estate Law 3
     Upon written consent of the adviser, up to 6 hours of approved alternative courses may be substituted for 6 hours of the required courses.

   - Option 3: General Business Major (GBS)
     Advisers: Morrison, Batch, Bliss, Gossman, McCarty, and Stevenson
     In addition to the upper class requirements of MGMT 300 and 499, FCL 320 and 340, and MKTG 370, a student may elect a logical sequence of seven advanced business courses at or above the 300 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 option 5.

2. Finance and Commercial Law Minors
   - Option 1: Finance Minor (FIN)
     Advisers: Finance and Commercial Law Faculty
     Students wishing to minor in finance are required to take 21 hours. Sixteen of these hours are in Finance and Commercial Law Department courses and 5 are from other disciplines within the College of Business. The minor shall consist of:
     - Two (2) of the following courses:
       - ACTY 210: Principles of Accounting 3
       - FCL 232: Introduction to Financial Management 3
       - FCL 320: Business Finance 3
       - FCL 325: Introduction to Financial Markets 3
     Upon written consent of the adviser, up to 6 hours of approved alternative courses (other than Personal Finance 305) selected with the student's professional objectives in mind.

   - Option 2: Law Minor (LAW)
     Advisers: Law Area Faculty
     Students wishing to minor in law are required to take 21 hours. Sixteen of these hours must be in law. Legal Environment 340 and Business Law 350 or Commercial Law 352 are required; 9 additional semester hours of law shall be selected with the student's professional objectives in mind. The remaining 6 hours must be selected from the following courses:
     - ACTY 210: Principles of Accounting 3
     - MGMT 300: Fundamentals of Management 3
     - MGMT 451: Administrative Behavior 3
     - MGMT 370: Principles of Marketing 3

   - Option 3: Real Estate Minor (REA)
     Adviser: Scheu
     Students wishing to minor in real estate are required to take 21 hours. Fifteen of these hours are in Finance and Commercial Law courses and 6 are chosen from several disciplines within the College of Business. The remaining 3 hours shall be selected from the following courses:
     - FCL 330: Real Estate Fundamentals 3
     - FCL 331: Real Estate Finance 3
     - FCL 332: Real Estate Investment 3
     - FCL 333: Real Estate Appraisal 3
     - FCL 434: Real Estate Land Development 3
     - FCL 552: Real Estate Management 3
     - FCL 542: Real Estate Law 3
     Six (6) hours selected from the following:
     - College of Business courses:
       - MKTG 370: Principles of Marketing 3
       - MKTG 374: Advertising 3
       - MKTG 376: Sales Administration 3
       - MKTG 477: Consumer Behavior 3
     - FCL 340: Legal Environment 3
     - FCL 325: Financial Markets 3
     - FCL 320: Business Finance 3
     - BIS 102: Introduction to Information Processing 3

Option 4: Insurance Minor (INS)
Adviser: Burdick
Students wishing to minor in insurance are required to take 21 hours. Fifteen of these are in insurance courses and 6 are from other disciplines within the College of Business. The insurance minor consists of the following courses:
- FCL 325: Financial Markets 3
- FCL 321: Risk and Insurance 3
- FCL 322: Life and Health Insurance 3
- FCL 323: Property and Liability Insurance 3
- One (1) of the following courses:
  - FCL 526: Group Insurance and Pensions 3
  - FCL 527: Risk Management and Insurance 3
  - FCL 528: Insurance Company Management 3
  - FCL 320: Business Finance 3
- Two (2) of the following courses:
  - MKTG 370: Principles of Marketing 3
  - ACTY 210: Principles of Accounting 3
  - BIS 102: Introduction to Information Processing 3
  - MGMT 200: Business Statistics 3
  - MGMT 300: Fundamentals of Management 3

Option 5: General Business Minor (GBS)
Advisers: 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 pursuing a degree other than a BBA degree may minor in general business by completing the following 21 hours:
- ACTY 210 and 211 Principles of Accounting 6
- BIS 242: Business Communications 3
- FCL 320: Business Finance 3
- FCL 340: Legal Environment 3
- MGMT 300: Fundamentals of Management 3
- MKTG 370: Principles of Marketing 3
Management (MGMT)
Advisers: Report to the Department of Management, 175 East Hall, for assignment to an adviser.

Major in Management (24 hrs.) A major in management consists of the six courses listed below plus an additional six hours of advanced work. Such courses may be drawn from all Department of Management offerings above 304, except 499. A student who wishes to build a special program that may include courses from other departments is required to do so in consultation with a departmental adviser.

MGMT 300 Fundamentals of Management
MGMT 301 Management Analysis and Behavior (I) 
MGMT 302 Management Analysis and Behavior (II) 
MGMT 303 Management Analysis and Organizational Design
MGMT 304 Management Analysis and Organizational Design (II) 
MGMT 360 Quantitative Methods for Business Decisions 
Six additional hours of Management courses at the 300 level or above (excluding 499)

Minor in Management (21 hrs.) A minor in management consists of 300, 301, 302, 303 and 304 plus two courses from any of the following:

ACTY 210 Principles of Accounting (req. for Non-BBA minors)
FCL 320 Business Finance
FCL 340 Legal Environment
MGKT 370 Principles of Marketing

Marketing (MGKT)
The Marketing Department offers four major areas of concentration as shown below. The courses are to be taken in the sequence indicated, following the prerequisites as listed after the course descriptions.

1. Advertising (ADV) Adviser: Cannon
MGKT 370 Marketing
MGKT 371 Marketing Research
MGKT 374 Advertising
MGKT 377 Retail Promotion
MGKT 474 Advertising Copy and Layout
MGKT 477 Consumer Behavior
MGKT 572 Advertising Media and Campaigns
MGKT 577 Advertising Theory and Ethics

2. Retailing (RET) Adviser: Emberson
MGKT 370 Marketing
MGKT 371 Marketing Research
MGKT 374 Advertising
MGKT 375 Principles of Retailing
MGKT 377 Retail Promotion
MGKT 476 Retail Merchandising
MGKT 479 Marketing Internship
MGKT 570 Problems in Retailing

3. Industrial Marketing (IDM) Adviser: Otteson
MGKT 370 Marketing
MGKT 371 Marketing Research
MGKT 372 Purchasing Management
MGKT 374 Advertising
MGKT 376 Sales Administration
MGKT 470 Industrial Marketing
MGKT 574 Marketing Logistics
MGKT 576 Marketing Strategy

Optional minor for Industrial Marketing Majors
Manufacturing Technology (15 hrs.) The Manufacturing Technology minor consists of Industrial Engineering 131, Mechanical Engineering 121 and 271, and any two of the following courses: Electrical Engineering 100, 101, 250, Industrial Engineering 326, 328, Paper Science and Engineering 354, Industrial Technology and Education 170, 234, Mechanical Engineering 290.

4. General Marketing (MKT)
Advisers: "A"—Brogowicz
"H-M"—Crow
"N-S"—Delene
"T-Z"—Long

5. Marketing Minor (MKT)
A marketing minor requires 21 credit hours consisting of the following courses:
MGKT 370 Marketing
MGKT 374 Advertising
MGKT 376 Sales Administration
Electives from Department of Marketing approved by Department Adviser

Any deviations from the course requirements must have written approval of the departmental adviser or department chairperson.

Related Majors
Students who complete the B.B.A. curriculum requirements may major in any of the following four areas and receive the B.B.A. degree. All students electing a "related major" option must meet the minimum requirement of 40% of their coursework in business and upper division economics courses.

1. Economics (ECO) Adviser: Caruso
Elect an additional 21 semester hours of advanced courses (300-500 level) from the Department of Economics.

2. Public Administration (PAB) Adviser: Morrison, McCarty
The public administration major requires the completion of the following major and minor requirements.

Major Requirements:
In addition to MGMT 300 and 499, FCL 320 and 340, and MKTG 370, elect at least 15 semester hours from the following:

FCL 331 Real Estate Finance
ACTY 324 Income Tax Accounting
MGMT 352 Personnel Management
MGKT 372 Purchasing Management
ACTY 514 Institutional Accounting
FCL 428 Management of Financial Institutions
MGMT 451 Administrative Behavior
FCL 532 Real Estate Law
FCL 550 Law of Business Organizations
BIS 556 Office Management

Minor Requirements:
22 hours as follows:
PSCI 200 State and Local Government
PSCI 330 Introduction to Public Administration
PSCI 504 Making of Public Policy in U.S.
PSCI 526 Administrative Law and Public Relations
PSCI 534 Administrative Theory
Plus one of the following:
PSCI 531 Administration in Local and National Governments
PSCI 533 Public Personnel Administration
PSCI 535 The Politics of Governmental Budget and Finance
PSCI 591 Statistics for Political Science

3. Statistics (STB) Adviser: 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% of their coursework in business and upper division economics courses.

CS 306 Introductory Programming/ FORTRAN
MATH 122 Calculus I
MATH 123 Calculus II
MATH 230 Elementary Linear Algebra
MATH 272 Vector and Multivariate Calculus
MATH 364 Statistical Methods
MATH 362 Probability
MATH 460 Intro. to Mathematical Statistics
MATH 506 Scientific Programming
Two of MATH
MATH 563 Sample Survey Methods
MATH 566 Nonparametric Statistical Methods
MATH 567 Statistical Design and Analysis of Experiments
MATH 568 Regression Analysis
Elective (one upper-level business course emphasizing statistical applications)
4. Agri-Business (AGB)

Advisor: Benne, Houdek

The Agri-Business major requires the completion of the B.B.A. requirements and a 24-hour major in the Agriculture Department. An example follows:

AGR 110 Animal Industry .................. 3
AGR 220 Agronomy (Crop Production) .......... 4
AGR 222 Principles of Horticulture ............. 4
AGR 320 Introduction to Soils ............... 4
AGR 332 Agriculture Marketing and Finance .... 4
AGR 330 Farm Organizations and Management ... 4
AGR 400 Independent Study .................. 1

Related Minor

1. International Business Minor (INT)
   A. Two courses from the following list . . . 6
      1. FCL 320—Business Finance
         (Prereq. MGMT 200 and ACTY 210)
      2. FCL 340—Legal Environment
      3. BIS 242—Business Communications
         (Prereq. BIS 142)
   B. Four courses from the following list . . 12
      1. FCL 521—International Finance
         (Prereq. FCL 340)
      2. FCL 522—International Business Law
         (Prereq. FCL 340)
      3. MGMT 300—Fundamentals of Management
      4. MKTG 370—Marketing (Prereq. ECON 201)

2. Cultural and Regional Area Study
3. Skill Specialization

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Course Descriptions

(Courses described in italics are approved for General Education.)

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.

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 and conducted by other institutions or for work done independent of seminars planned by the College of Business.

Accountancy (ACTY)

William R. Weike, Chair
John T. Burke
Hans J. Dykxhoorn
J. Patrick Forrest
Charles E. Hines, Jr.
Jerry G. Kreuze
Max A. Laudeman
William C. Morris
Robert D. Neubig
Gale E. Newell
David Rozelle
F.W. Schaeberle
John D. Sheppard
Kathleen E. Sinning
Robert B. Wetnight

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.

Course Descriptions

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.

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 equity.

211 Principles of Accounting
3 hrs.
A continuation of course 210 with emphasis on managerial/cost accounting concepts. Prerequisite: 210.

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.

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.
Course Descriptions

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.

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: Consent of instructor.

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.

411 Financial Accounting III
3 hrs.
The study of entities and special transactions not covered in Financial Accounting I and II. Particular emphasis is given to partnerships, equity accounting, fund accounting, accounting by agencies and branches, business combinations, reporting by parent/subsidiary consolidated entities (including foreign subsidiaries). Prerequisite: 311 and senior standing.

420 Topics in Accounting
3 hrs.
An examination of advanced topics in Accounting. Course may be repeated under different topics. Prerequisite: Consent of instructor.

Open to Upperclass and Graduate Students

513 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. Prerequisite: BIS 102, ACTY 310, and ACTY 322, or their equivalent.

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.

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. Prerequisite: ACTY 311 or equivalent.

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.

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.

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 324 or equivalent.

598 Readings in Accounting
1-4 hrs.
Directed individual study of topics not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.
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.

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 keys, numeric keys, and symbol keys.

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 data basing. Prerequisite: BIS 182.

242 Business Communication 3 hrs.
Business communication is a general introduction to the uses of communication in modern organizations. Organization theory, behavior, and communication channels form the basis for special emphasis on using written communication to solve typical business problems. Prerequisite: BIS 142 or its equivalent.

244 Organizational Communication 3 hrs.
A study of communication in structured organizations and the application of communication theory to the solution of communication problems in organizations. Special emphasis on small groups decision making. Prerequisite: BIS 242.

260 Business EDP Systems and Procedures I 3 hrs.
Introduction to business EDP systems analysis and procedures. Students complete an elementary business data flow systems design from preliminary investigation to implementation. Prerequisite: BIS 102, CS 111.

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 260.

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.

This course examines the sociological, psychological, and economic aspects of the American consumer movement. Students review the function of the marketplace and examine its contributions and failings. Analysis is made of the changes and problems facing the consumer and the role of private and governmental protection agencies. Legal rights and responsibilities are reviewed, especially those involving warranties, guarantees, and landlord and tenant relationships.

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 242.

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 242.

360 Business EDP Systems and Procedures II 3 hrs.
A continuation of BIS 260 with emphasis on project management, scheduling and control, and evaluation of business data systems and procedures. Prerequisite: BIS 260.

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.

386 Office Organization and Technology 3 hrs.
Designed for students preparing for professional office administration. Includes office functions and environment, office technology and systems, and the principles of office organization.

388 Records Management 3 hrs.
The study of efficient methods, procedures, and systems for processing, controlling, and disposing of organizational records. Includes records inventory and classification, information retention and retrieval, and the administration of office information systems.

410 Internship 1-4 hrs.
Under the direction of a faculty adviser, qualified students may engage in a variety of professional experiences. Scheduled meetings with adviser and written experience reports required. May be repeated for a maximum of 4 hours credit.

442 Advanced Business Writing 3 hrs.
Emphasis on the written communication problems of business, including message design, style, and editing. Students apply skills through work with forms, brochures or handbooks, and articles. There will be some field work outside of class.

462 Applied CIS Development Project 3 hrs.
Application of computer programming and system development concepts, principles, and practices to a comprehensive system development project. A team approach is used to analyze, design, and document realistic systems of moderate complexity. Use of project management methods, project scheduling and control techniques, formal presentations, and group dynamics in the solution of information system problems. Development of a database to support the system. Prerequisite: BIS 362.

464 Management Information and Decision Support System 3 hrs.
An analysis of the highest level of information support systems which serve the manager-user. A study of systems providing query-based information derived from one or more data bases within and/or external to the organization and used to aid managers in the decision-making process. Theoretical concepts are applied to real world applications with an analysis of examples from specific organizations. Prerequisite: BIS 362.

466 Distributed Data Processing 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 case studies. 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: CS 542.

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. Prerequisite: BIS 388 or permission.

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.

554 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.

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.

556 Office Management 3 hrs.
Procedures of office administration with attention to supervisory patterns in development, appraisal, and management of human resources.
Finance and Commercial Law (FCL)

596 Independent Study
3 hrs.

598 Readings
3 hrs.

323 Property and Liability Insurance
3 hrs.
The course includes analytical study of the major property and liability contracts, together with discussion of the principal functional aspects of property and liability company operations. Prerequisite: FCL 321.

325 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.

326 Investment Analysis
3 hrs.
A survey of the securities markets from the viewpoint of the novice investor. This course includes a study of market operations, trading techniques, special investment vehicles such as options and warrants, and a consideration of the investment objectives and practices of institutional investors. Prerequisite: FCL 320 or consent of instructor.

327 Internship in Insurance
1-5 hrs.
Under the direction of a faculty adviser, students obtain employment experience with an insurance company or with a firm with an insurance division or department. Students are required to file periodic reports to the faculty adviser. In addition, they are evaluated by the firm’s executives. Available only to students minor in insurance. No more than 3 hrs. can be used as credit toward a minor.

328 Internship in Finance
1-5 hrs.
Under the direction of a faculty adviser, students obtain employment experience with industrial, commercial, and financial enterprises (commercial banks, insurance companies, etc.) and students are required to file periodic reports to the faculty adviser. In addition, they are evaluated by the firm’s executives. Available only to students majoring in finance. No more than 3 hrs. can be used as credit toward a major or minor.

329 Internship in Real Estate
1-5 hrs.
Under the direction of a faculty adviser, students obtain employment experience with a real estate firm or enterprises with a real estate department or division. Students are required to file periodic reports to the faculty adviser; in addition, they are evaluated by the firm’s executives. Available only to students majoring in real estate. No more than 3 hrs. can be used as credit toward a major or minor.

330 Real Estate Fundamentals
3 hrs.
Supplies the basis for comprehension in real estate 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.

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.
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.

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.

420 Quantitative Applications in Finance 3 hrs.
The applications of quantitative analysis to finance. Emphasis will be placed on the techniques available in financial decision making, determination of financial relationships, and financial forecasting. Applications in corporate financial management, investment analysis, and financial institutions. Prerequisite: FCL 320.

An in-depth study of the concepts and theories underlying the investment and financing decisions of business enterprises. The course emphasizes the various aspects relating to the effective management of the firm's working capital, fixed assets and financial structure. Prerequisite: FCL 320.

426 Applications in Financial Management 3 hrs.
An analytical approach to problems facing the financial executive. Cases selected cover financial decision-making processes with particular emphasis on valuation, working capital, capital budgeting, capital structure and dividend policies. In addition, the course will utilize the computer in solving a variety of financial problems. Prerequisite: FCL 320.

427 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 325.

428 Management of Financial Institutions 3 hrs.
The course is devoted to in-depth analysis of the operations of selected financial institutions with emphasis on management decision-making processes. Case analysis and analytical problems are included in the course content. Prerequisite: FCL 325.

429 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. Prerequisite: FCL 329.

434 Real Estate Land Development 3 hrs.
Neighborhood and city growth, municipal planning and zoning, development of residential, commercial, industrial and special purpose properties are analyzed. Prerequisite: FCL 330 or consent of instructor.

437 Real Estate Management 3 hrs.
Management of income producing properties as an agent of the owner. Consideration of professional standards, business promotion, leasing, insurance and maintenance.

499 Senior Topics in Finance 3 hrs.
This course is designed as a capstone course for finance majors who can benefit from intensive study of selected current issues in finance. Course designed to increase research and analytical capacities of finance majors through intensive faculty-student work. Student permitted freedom to explore topics of interest in-depth with assistance of professors. Prerequisite: Written consent of instructor.

519 Security 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 the techniques as used by the academician and the practitioner. Prerequisite: FCL 326.

521 International Finance 3 hrs.
A study of contemporary problems in international finance. The course examines the international money markets, working capital considerations and capital budgeting problems as faced by the multinational corporation. Prerequisite: FCL 320 or consent of instructor.

526 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 322.

527 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 321 or consent of instructor.

528 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 323.

598 Readings in Finance and Commercial Law (Finance) 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.

Law Area

311 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.

340 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.

350 Business Law 3 hrs.
The study of law as it impacts on the business firm. Examines the formation and performance of business contracts, employer-employee rights and duties and business liability in commercial transactions. Students cannot receive credit for both 350 and 352. Prerequisite: FCL 340.

352 Commercial Law 3 hrs.
The study of law applicable to the organization and operation of most business firms. Examines contract formation, agency law, and employer liability for employee actions. Reviews commercial transaction laws related to sales agreements and negotiable instruments. Students cannot receive credit for both 350 and 352. Prerequisite: FCL 340.

440 Tort Law and Liability 3 hrs.
A study of individual and business rights and liabilities with respect to negligence, intentional wrongs, libel, misrepresentation, and insurance aspects thereof. Prerequisite: FCL 340.

450 Management and Labor Relations Law 3 hrs.
A survey of laws affecting management-labor relations. The course examines general employer-employee relationships, emphasizing the hiring and firing of employees, employee benefit programs, workman's compensation laws, and civil rights rules and regulations. Prerequisite: FCL 340.

532 Real Estate Law 3 hrs.
The study of land ownership, sales agreements including the legal duties of the real estate broker, mortgages, land contracts, leases, zoning, condemnation and urban land development problems. Prerequisite: FCL 340.

550 Law of Business Organizations 3 hrs.
A study of the laws affecting the organization and operation of business enterprises. The course examines the different forms of business organization, principally corporations and partnerships, and analyzes how their structure affects the operation of various activities. Prerequisite: FCL 340.
Management
(MGMT)

James W. Hill, Chair
Raymond E. Ale
John A. Blatcha
Henry H. Beam
Gene S. Booker
Kimon Bournazos
Thomas A. Carey
Daniel J. Farrell
Fred V. Hartenstein
J. Michael Keenan
J. Stanley Menolden
V. Jean Ramsey
John R. Rizzo
Wayland P. Smith
William B. Tompkins
Wm. John Upjohn
Roger L. Wallace

Course Descriptions

(Courses described in italics are approved for General Education.)

200 Business Statistics
3 hrs.
An applications-oriented study of statistical concepts and techniques. The course focuses on the student as a user of statistics who needs a minimal understanding of mathematical theory and formula derivation. Major topics of study are statistical description, central tendency, dispersion, distributional shapes, sampling, confidence levels, probability, comparison tests, association tests, regression and time series. The objectives of the course are to develop the skill to apply these concepts in conjunction with computer usage and make appropriate decisions regarding actual business problems. Prerequisite: MATH 116, BIS 102.

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.

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.

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 200, 300; co-requisite: MGMT 302.

302 Management Analysis and Behavior (II)
3 hrs.
An extension of MGMT 301; must be taken with 301.

303 Management Analysis and Organizational Design (I)
3 hrs.
The students develop and experiment with their own model of an organization by assuming different roles and exercising influence in a large task oriented group working on a real problem. The course is designed to give students practice in integrating relevant variables, analyses, and data into an operating system. Prerequisites: MGMT 301-2; co-requisite MGMT 304.

304 Management Analysis and Organizational Design (II)
3 hrs.
An extension of MGMT 303; must be taken with MGMT 303.

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.

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. Prerequisite: junior standing.

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: MGMT 200.

400 Topics in Management
3 hrs.
An examination of advanced topical problems in management. (Repeatable)

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.

430 Systems Evaluation
3 hrs.
A survey of systems analysis techniques, including benefit/cost procedures.

451 Administrative Behavior
3 hrs.
A course designed to integrate the contributions and implications of the behavioral sciences to modern business practice to promote and maintain effective human relations for the individual and the group. Extensive use of cases and conference methods is made.
453 Organizational Behavior
3 hrs.
A study of current theory, research, and practice regarding variables that influence human behavior in complex organizations. Emphasis is placed on models relevant to human productivity, satisfaction, retention, and learning in organizational settings.

490 Honors Seminar
1-3 hrs.
A discussion of selected topics in contemporary management. Prerequisite: Consent of departmental honors committee and instructor. (Repeatabile)

491 Independent Honors Studies in Management
1-3 hrs.
Opportunity for independent reading and/or research under the direction of a faculty member. Prerequisites: Consent of departmental honors committee and instructor. (Repeatabile)

495 Independent Study
1-4 hrs.
Independent research on specialized management topics. Prerequisite: Consent of instructor. (Repeatabile)

499 Management Problems
3 hrs.
An integrative course intended to give the student opportunity to solve management problems by bringing together the knowledge gained in the study of areas such as finance, accounting, marketing, economics, management. Prerequisites: Senior standing and all core courses.

500 Management Literature
1-4 hrs.
A study in specialized areas of the management literature. The students will prepare an original paper on an assigned topic. Prerequisite: Permission of the instructor.

510 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.

512 Women in Management: Male, Female, and Organizational Perspectives
3 hrs.
A seminar dealing with the changing roles of women in business. Emphasis is given to the unique needs of women aspiring to managerial and professional ranks. Changes in attitudes and behaviors of women, men and organizations and the implications of change for traditional male-female relationships and organizational operations are explored.

514 Entrepreneurship
3 hrs.
A senior or graduate 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 340, FCL 320, MKTG 370 or department consent.

540 Advanced Statistics
3 hrs.
A second course in statistics. Includes probability distributions, hypothesis testing with sampling theory, Type I and Type II errors, point and interval estimates, statistical inference, comparison tests (two-sample and K-sample), association tests (correlations and regression), and nonparametric tests. Prerequisite: MGMT 200.

556 Behavior Analysis Applications
3 hrs.
Applications of behavior analysis and the principles of behaviorism to management problems in public and private organizations. Emphasis is placed on maintenance of performance, reliability, effectiveness, and efficiency. Students will apply principles to the improvement of an existing organization.

561 Introduction to Management Science
3 hrs.
A systematic study and application of the scientific method to management decision-making. Introduction to techniques of linear programming, inventory theory, scheduling theory, and other optimizing decision models. For students who will take more specialized courses as well as those in other disciplines desiring a limited exposure to the field. Prerequisite: MGMT 200.

563 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 200 and 300 or equivalents.

564 Simulation
3 hrs.
A systematic study and application of the methodology of system simulation including system identification and description, model development, computer implementation, experimental design and validation. Special attention is given to model classification, especially deterministic vs. probabilistic and discrete vs. continuous, and how it relates to computer implementation and fields of application. Prerequisites: BIS 102 or 602 and MGMT 200 or permission of instructor.

565 Inventory Management
3 hrs.
The practical application of modern management techniques in the definition and solving of problems in inventory systems. Prerequisites: MGMT 200 and 561.

596 Readings in Management
1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Permission of instructor.

Marketing (MKTG)

Robert B. Trader, Chair
Joseph J. Belonax
Andrew A. Brogowicz
Zane Cannon
Lowell Crow
Raymond A. Dannenberg
Lindgren Deele
Richard E. Emberton
Jay Lindquist
Brian G. Long
Muniratx Luqmani
Edward J. Mayo
Conner P. Otteson
Ned C. Pfeiffer
Zahir A. Quraeshi
Diane M. Rose

Course Descriptions

270 Salesmanship
3 hrs. Fall, Winter
An introduction to the principles of selling. Includes study of selling in our present economy, analysis of the steps in a sales demonstration, and a classroom demonstration.

300 Survey of Marketing
3 hrs.
An introduction for non-business students to the key concepts and issues underlying marketing. The course includes a survey of the nature of marketing, marketing organization and the marketing process. (Not open to business majors or minors. Validation of MKTG 300 as a substitute for MKTG 370 requires a "C" or better grade in MKTG 371 (573) for students who qualify and elect additional courses.)

370 Marketing
3 hrs. Fall, Winter, Spring, Summer
A systematic study and application of the methodology of system simulation including system identification and description, model development, computer implementation, experimental design and validation. Special attention is given to model classification, especially deterministic vs. probabilistic and discrete vs. continuous, and how it relates to computer implementation and fields of application. Prerequisites: BIS 102 or 602 and MGMT 200 or permission of instructor.

596 Readings in Management
1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Permission of instructor.

270 Salesmanship
3 hrs. Fall, Winter, Spring, Summer
An introduction to the principles of selling. Includes study of selling in our present economy, analysis of the steps in a sales demonstration, and a classroom demonstration.

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An introduction for non-business students to the key concepts and issues underlying marketing. The course includes a survey of the nature of marketing, marketing organization and the marketing process. (Not open to business majors or minors. Validation of MKTG 300 as a substitute for MKTG 370 requires a "C" or better grade in MKTG 371 (573) for students who qualify and elect additional courses.)

370 Marketing
3 hrs. Fall, Winter, Spring, Summer
A systematic study and application of the methodology of system simulation including system identification and description, model development, computer implementation, experimental design and validation. Special attention is given to model classification, especially deterministic vs. probabilistic and discrete vs. continuous, and how it relates to computer implementation and fields of application. Prerequisites: BIS 102 or 602 and MGMT 200 or permission of instructor.

596 Readings in Management
1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Permission of instructor.
375 Principles of Retailing  
3 hrs. Fall, Winter  
Covers the activities necessary in performing the management of a retail establishment. Changes in consumer demographics, lifestyle, and the decision-making process. Sources and uses of funds, inventory planning and control, merchandise, resources, promotion, customer services, building layout, and expense analysis are special areas of study. Prerequisite: MKTG 370.

376 Sales Administration  
3 hrs. Fall, Winter, Spring  
Topics include the role of personal selling in the firm; determination of market and sales potential; recruiting, training, sales communication, territories and quotas; motivation, measuring selling effectiveness. Prerequisite: MKTG 370.

377 Retail Promotion  
3 hrs. Winter  
Study of techniques used in identifying and appealing to retail consumer needs through the use of various store and departmental promotional techniques, newspapers, radio, T.V., direct mail, and point-of-purchase advertising. Ethical considerations of all retail promotion explored. Prerequisite: MKTG 370.

470 Industrial Marketing  
3 hrs. Fall, Winter  
A course designed to analyze the problems of marketing industrial goods. Attention is given to market information, market planning, methods of distribution, pricing, and the promotional problems of industrial marketing. Prerequisite: MKTG 370.

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 370, 371.

473 Direct Marketing  
3 hrs.  
Covers principles, concepts, methods, techniques, and applications of direct marketing. Includes use of direct marketing under various conditions and media with special emphasis on mail, electronic media, telephone, and catalog advertising. Student projects required. Prerequisite: MKTG 370; Permission of instructor.

474 Advertising Copy and Layout  
3 hrs. Fall, Winter  
Study of the theory and practice in the writing, preparation, and typographical composition of advertising including the writing of radio, television, magazine, and newspaper copy. Prerequisites: MKTG 370, MKTG 374; permission of instructor.

476 Retail Merchandising  
3 hrs. Fall, Winter  
The planning, "buying", and controlling of merchandise for retail outlets; fashion, mass merchandise, specialty, boutique, department, and food stores. Students will develop buying plans for various products, such as fashion merchandise, sporting goods, wearing apparel, household goods, and others. Prerequisites: MKTG 370, MKTG 375.

477 Consumer Behavior  
3 hrs. Fall, Winter  
Investigate, analyze and interpret the extensive body of research information on consumer behavior considering both the theoretical and practical implications. Prerequisite: MKTG 370.

479 Marketing Internship  
1-6 hrs. Arranged  
Fall, Winter, Spring  
Cooperative internship training for the BBA degree marketing majors having completed approximately one credit per 100 hours of internship training acceptable to adviser. May be repeated for a maximum of 3 hrs. Term reports required, evaluations completed by executives of firms in which training takes place. Prerequisites: Marketing major; permission of the instructor.

570 Problems in Retailing  
3 hrs. Fall  
Designed to analyze current retailing problems, market segmentation, inventory planning and control, vendor evaluation, store services, traffic patterns, and warehousing. Report required. Prerequisite: Permission of the instructor and senior level.

571 Services and Non-Profit Marketing  
3 hrs.  
An analysis of problems and issues relating to the marketing of services and the use of marketing in non-profit organizations. Emphasis in these two divergent areas will be on application of marketing concepts, methods, policies, and strategies; special emphasis on environmental interactions. Prerequisites: MKTG 370 or permission of instructor.

572 Advertising Media and Campaigns  
3 hrs. Fall, Winter  
Examines theory and practice of media research, use of Audit Bureau of Circulation data, broadcast ratings, copy testing, development of media plans and scheduling as required for advertising campaigns. Prerequisites: MKTG 374 and MKTG 474; Advertising Majors only.

574 Marketing Logistics  
3 hrs. Fall, Winter, Spring  
An analysis of problems relating to the movement, handling, and storage of industrial products. Attention will also be given to changing market conditions and industrial structure as they affect the physical distribution of industrial goods. Prerequisite: MKTG 370.

575 International Marketing  
3 hrs. Fall, Winter, Spring  
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 370.

576 Marketing Strategy  
3 hrs. Fall, Winter, Spring, Summer  
Identifies 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. Senior level, MKTG 371 (573), plus 6 additional MKTG hrs.

577 Advertising Theory and Ethics  
3 hrs. Fall  
Critical examination of social, cultural, and ethical implications of "public and business" responsibilities involved in the advertising function. Special student interests developed through research and term projects. Prerequisite: MKTG 370, 374; permission of instructor.

578 Marketing Decisions in Publicity and Public Relations  
3 hrs.  
Analysis of principles and practices of publicity and public relations as these areas relate to the firm's overall promotional strategies; stress on application through case studies and term project. Prerequisite: MKTG 370.

598 Readings in Marketing  
1-3 hrs. Arranged  
Directed individual study of bodies of knowledge not otherwise treated in departmental offerings. Prerequisite: Written permission of instructor.
In general, the College of Education performs six functions:
1. Supervises the selection, admission, and retention of students in advanced teacher education curricula;
2. Offers professional education courses designed to develop competent, efficient performance in the classroom and within a school system;
3. Offers advanced specialized courses in selected major and minor fields in departments within the college;
4. Offers service courses to students in other colleges within the University;
5. Provides clinical and curricular services to teachers and school personnel; and
6. Conducts experimentation and research at all levels of professional education.

All College Course
399 Field Experience (Community Participation) 2-8 hrs.
A program of independent study combining academic work in education with social, environmental, civic or political field work.
Prerequisites: A written outline of the student's project, approved by a faculty supervisor, and approval from the office of the dean.

Office of Orientation and Advisement for the College of Education
Virginia Sorenson, Director
2305 Sangren Hall
383-1840
Advisers:
Keith D. Bailey
Earl Bon
William H. Kanzler
Owen B. Middleton
The Office of Orientation and Advisement is operated by the College of Education. Students who have decided that they wish to prepare for a career in education should make the appropriate declaration when applying for admission to the University. Students entering college for the first time who declare interest in education as a career should contact the Orientation and Advisement Office as soon as possible to arrange an orientation appointment. Transfer students, after receiving a completed Credit Evaluation Slip from the Admissions Office, should arrange an appointment to assimilate transfer credit into their curriculum at Western. Students already enrolled at Western who wish to change from or to an elementary education or secondary education curriculum should contact the Orientation and Advisement Office.

Curricula for Teachers
The program for prospective teachers consists of three parts: (1) general education, designed to develop those understandings and competencies which make for effective living and good citizenship; (2) advanced specialized study, with major and minor interests in the fields of the student's choice, offered in the various colleges of the University; and (3) professional education courses offered in the College of Education.

In general, prospective teachers choose to work for the State Elementary Provisional Certificate, valid for grades kindergarten through eight, or the State Secondary Provisional Certificate, valid for grades seven through twelve.

Students majoring in art, dance, music, physical education, and special education may be certified to teach this subject in all grades by completing requirements of the Elementary Provisional or Secondary Provisional Certificate and the curriculum requirements of the major.

All students earning an Elementary Provisional Certificate must complete a minimum of six semester hours of credit in the methods of Teaching Reading.
All students earning a Secondary Provisional Certificate must complete a minimum of three semester hours of credit in the methods of Teaching Reading.

Office of Professional Field Experiences
Virginia Sorenson, Director
2504 Sangren Hall
383-1840
The department's office of Professional Field Experiences serves the entire University by providing placements for students who need a field experience. These placements are for students needing to participate while taking methods courses, for students wishing to volunteer their tutoring services, and for those students who are ready to student teach. All student teachers under the supervision of the professional staff of the unit. Students who
are anticipating student teaching need to contact the Professional Field Experiences Office for an appointment at least TWO semesters before they student teach.

Elementary Curriculum

Bachelor of Arts or Bachelor of Science Degree

State Elementary Provisional Certificate (For the preparation of Teachers of Kindergarten and Grades 1-8)

1. Minimum hours required for this curriculum 122 hrs.

2. Course Requirements
   A. General Education Requirement: 35 hrs. required for university General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies, are required for Michigan certification.
   B. Elementary Education Minor . . . 24 hrs. Requirements and approval for this required minor are available in the Education Orientation and Advisement Office, 2305 Sangran Hall. All students must have a minor slip signed by an approved elementary education adviser.
   D. Physical Education . . . 2 hrs. (PEC 340, Physical Education for the Elementary Teacher, will satisfy one hour of this requirement.)

3. Two minors of 20 hours each or group minors of 24 hours each; or one major of 30 hours or group major of 36 hours are required. This requirement is in addition to the required elementary education minor. (Check catalog descriptions for major and minor requirements.)

Approved majors and minors for the Elementary Education Curriculum (Only programs listed below are acceptable for elementary education.) Students are urged to see an elementary education adviser, Orientation and Advisement Office, 2305 Sangran, so that approved majors, minors and the elementary education minor may be appropriately planned and coordinated.

Majors (Each major marked with an asterisk gives K-12 certification in that subject.)

<table>
<thead>
<tr>
<th>American Studies (AMS)</th>
<th>Anthropology (ANT)</th>
<th>Biology (BIO)</th>
<th>Chemistry (CHEM)</th>
<th>Communication Arts and Sciences (CAS)</th>
<th>Earth Science (EAR)</th>
<th>Economics (ECON)</th>
<th>English (ENG)</th>
<th>Geography (GEOG)</th>
<th>Health Education (HED)</th>
<th>History (HIST)</th>
<th>Language Department majors:</th>
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<td>Spanish (SPAN)</td>
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Music (MUS)

*Physical Education-Elementary (PEE)

*Physical Education Secondary (PEP)

Physics (PHYS)

Political Science (POL)

Rural Life (RUL)

Science (SCI)

Social Science (SOS)

Sociology (SOC)

Speech Pathology and Audiology (SPC)

See College of Health and Human Services' section of this catalog for description of degree and certificate requirements

Special Education Majors:

Emotionally Disturbed (SDC)

Mentally Handicapped (SMH)

Orthopedically Handicapped (SCH)

Visually Handicapped (SBE)

(Special Education majors require admission to Special Education curriculum)

Theatre Education (THN)

Minors

Anthropology (ANT)

Art (ARE)

Biology (BIOL)

Black American Studies (BAS)

Chemistry (CHEM)

Communication Arts and Sciences (CAS)

Dance Education (DAN)

Earth Science (EAR)

Economics (ECON)

English (ENG)

Environmental Studies (ENV)

Family Life Education (FLE)

Geography (GEOG)

History (HIST)

Integrated Creative Arts (IRA)

International and Area Studies Minors:

(Only one minor from department may be used.)

African Studies (AFS)

Asian Studies (AIS)

Cross Cultural Studies (CCS)

Latin American Studies (LAS)

Slavic Studies (SVS)

Language Arts (LGS)

Language Department Minors

(Only one minor from each department may be used.)

French (FREN)

German (GER)

Russian (RUS)

Spanish (SPAN)

Library Science (LIB)

Linguistics (LIN)

Mathematics (MATH)

Music (MUS)

Physical Education Minors

(Only one minor from each department may be used.)

Physical Education—Elementary (PEE)

Physical Education for Exceptional Child (PEC)

Health Education (HED)

Physics (PHY)

Political Science (POL)

Science (SCI)

Science and Mathematics Teaching

Social Science (SOS)

Sociology (SOC)

4. The candidate must satisfy the requirements of the B.A. or B.S. degree.

Elementary Education Minor

Adviser Orientation and Advisement Office, 2305 Sangran Hall.

This 24-hour interdepartmental minor is designed to give preservice elementary teachers a program that will mesh with accepted majors and minors in the elementary curriculum. The student's elementary education minor program is valid only if signed by an approved adviser located in the Orientation and Advisement Office.

The minimum credit hour requirement must be met in each Area, I through V. An Area requirement may be satisfied by courses used in another major or minor. In this case, substituted courses must be selected only from courses listed in other Areas, and with approval of an elementary education adviser. The total minimum credit hour requirement for this minor is 24 semester hours.

Minimum Required Semester Hours

Area I

Reading, Language Arts, Communications and Literature 7

At least two courses to be selected from: ED 312 (3), ED 351 (4), ED 352 (4) and ED 597 (3) (requires prerequisite of one of the above.) Additional courses may be selected from: ENG 282 (4), ENG 283 (4), ENG 369 (4), ENG 572 (4), CAS 561 (4), LIB 416 (3), LIB 546 (3), ED 310 (2), ED 311 (3).

Area II

Mathematics 2

Select one course from: MATH 150 (4) or MATH 522 (3).

Area III

Science 4

Select at least one course from: GSCI 131 (4), BIOL 107 (4) (must be section for El. Ed.), GEOL 107 (4). If needed, additional course to be selected from: BIOL 234 (4), or BIOL 530 (2).

Area IV

Social Science 3

Select one course from: ED 507 (3) or GEOG 460 (3).

Area V

Fine Arts, Practical Arts and Physical Education 6

Courses must be selected from at least two departments: MUS 140 (4), ART 150 (3), ART 130 (3), ART 140 (3), ART 305 (3) DAN 341 (4), DAN 290 (3), DAN 181 (1), PEPR 340 (2), ITE 190 (3), CRT 266 (3), CAS 564 (4), CAS 520 (v). NOTE: PEPR 340 may also be applied to the general physical education requirement for degree.

Emphasis in Early Childhood Education

Adviser: Mary A. Caan

(Students must see an Early Childhood adviser to enroll in the program.)

The Early Childhood Emphasis offers a special professional sequence for K through 8 certification with an endorsement signifying special preparation in teaching young children. Prerequisite: ED 250, Human Development and Learning.

Students will have a split directed teaching assignment, which will be done in the Kalamazoo or Grand Rapids areas, where early childhood faculty are available. Rare exceptions to Kalamazoo or Grand Rapids assignments may be made upon approval of an Early Childhood adviser.) Students with a Early Childhood Emphasis should complete the Elementary Education Curriculum requirements satisfactorily, with the following additional courses or substitutions:
Integrated Creative Arts Minor

Adviser: Alfred Balkin

This 24-hour interdepartmental program is offered to preserve elementary school teachers, special education teachers, and others whose goals would be well served. 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. Those who select the minor must be admitted through a personal conference with the adviser. The minor consists of 24 semester hours distributed as follows:

- ED 230—The Nature of Creativity . . . . 4 hrs.
- DANC 341—Creative Movement in the Elementary School . . . . 4 hrs.
- MUS 140—Music for the Classroom Teacher . . . . 4 hrs.
- ART 200—The Creative Process through Art . . . . 4 hrs.
- CAS 564—Creative Dramatics for Children . . . . 4 hrs.
- ED 430—Creativity in the Elementary School . . . . 4 hrs.

ED 230 is geared to personal creative development and is not restricted to integrated creative arts minors. Students enrolled in the minor must take ED 430 (Creativity in the Elementary School) after they have taken all other courses in this group.

Integrated Language Arts Minor (ILAM)

Ruth Heing, Coordinator
322 Sprau Tower
(616) 383-4080

An interdisciplinary program of COLLEGE OF EDUCATION
Department of Education and Professional Development

College of Arts and Sciences

Communication Arts and Sciences
English
Languages and Linguistics

College of Health and Human Services
Speech Pathology and Audiology

This 24-hour interdepartmental program for pre-service elementary school teachers emphasizes the integrated nature of learning. This program satisfies the guidelines of the Michigan Department of Education for competency-based programs and provides opportunities for a wide variety of interests and alternative learning styles. The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each course. Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

- Each course is taught by a faculty member with interdisciplinary expertise from one of the departments participating in the minor.
- Each course focuses on a particular aspect of language development which will be presented through a balance of lectures, discussions, and workshops together with opportunities for student-initiated learning.
- Students can enter the program in their sophomore year. In general, ED 250, Human Development and Learning (or its equivalent), is a prerequisite for admission to the program.

Entry Courses—must be taken concurrently:
- ILAM/ED 260 Cognitive Development of the Child . . . . 2 hrs.
- ILAM/SPPA 260 Linguistic Development of the Child . . . . 2 hrs.

Intermediate Courses:
- ILAM/CAS 365 Oral Communication and the Child . . . . 4 hrs.
- ILAM/ENG 375 Acquisition of Literacy and the Elementary Child . . . . 4 hrs.
- ILAM/ENG 376 Acquisition of Literacy and the Later Elementary Child . . . . 4 hrs.

Capstone—to be taken after at least 16 hours of the minor are completed:
- ILAM/ED 460 Integrated Language Arts Seminar . . . . 4 hrs.

For individual course descriptions see catalog listings under the participating department.

Science and Mathematics Teaching Minor

Adviser: Philip T. Larsen

The minor is open only to students enrolled in the elementary education curriculum. Advising is provided by the Science and Mathematics Education, SAME, Center, B-302 Ellsworth Hall. Transfer students will need to have their previous coursework in science and mathematics evaluated by the Orientation and Advisement Office prior to enrolling in this minor.

Because of the interdisciplinary and sequential nature of this minor, courses should be taken in sequence going from level to level. For example, GSCI 131 Physical Science in Elementary Education must be completed before enrolling in GSCI 231 Concepts in Physical Science at Level II.

Level I

Select one course from the following list:
- BIO 107 Biological Science . . . . 4 hrs.
- GEO 107 Planetary Science . . . . 4 hrs.
- GSCI 131 Physical Science in Elementary Education . . . . 4 hrs.

Level II

A. Select two courses from the following list:
- Only one course from any one department may be chosen.
- 1. BIO 220 Applied Botany . . . . 4 hrs.
- 2. BIO 234 Outdoor Science . . . . 4 hrs.
- 3. GEO 237 Environmental Earth Science . . . . 4 hrs.
- 4. CHEM 140 Environmental Chemistry . . . . 4 hrs.
- 5. GSCI 231 Concepts in Physical Science . . . . 4 hrs.

B. Required:
- MATH 151 Geometry for Elementary Teachers . . . . 3 hrs.
- MATH 265 Probability and Statistics for Elementary Teachers . . . . 4 hrs.

Level III

A. Required:
- ED 401 Teaching Elementary School Science . . . . 3 hrs.
- MATH 552 Teaching of Elementary Mathematics . . . . 3 hrs.

Level IV

A. Required:
- ED 402 Seminar in Elementary Science and Mathematics . . . . 2 hrs.

Librarianship Curriculum

Bachelor of Arts or Bachelor of Science Degree

State Elementary or Secondary Provisional Certificate (For Teacher-Librarians)

Adviser: William K. Smith
School of Library and Information Science
2080 Waldo Library
383-1849

1. Minimum hours required for this curriculum . . . . 122 hrs.

2. Course Requirements

A. General Education Requirement . . . . 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (non-professional courses only) and/or the College of General Studies are required for Michigan certification.

B. Professional Education . . . . 21.25 hrs. See elementary, junior high, and senior high curricula requirements.

C. Library Science . . . . 20-30 hrs.
- Fundamentals of Library Organization 230 . . . . 3 hrs.
- Collection Development 510 . . . . 3 hrs.
- Reference Services 512 . . . . 3 hrs.
- Introduction to Cataloging and Classification 530 . . . . 3 hrs.
- School Media Center Experience 407 . . . . 3 hrs.
- Reading Interests of Young Adults 442 . . . . 3 hrs.

(Required only for teacher-librarian)
candidates in the secondary curriculum. 3 5. The candidate must satisfy the
3. Major/Minor Requirements Elementary
junior high school which focuses on teaching-
though 9. (Student has option of earning
A program of undergraduate studies to
teaching in the middle or junior high school.

3. Candidates for the secondary provisional
certificate must elect a major or group
major of 30 or 36 hours in subjects or
subject fields taught in the secondary
school; candidates for the elementary
provisional certificate must elect an
additional minor or group minor of 20 or
24 hours, and also complete the
elementary education minor (see
elementary curriculum).

4. A portion of the directed teaching period
is spent in a selected school media
center.

5. The candidate must satisfy the
requirements of the B.A. or B.S. degree.

Middle School and Junior
High School Curriculum
Bachelor of Arts or Bachelor of Science
Degree State Elementary or State Secondary
Provisional Certificate
A program of undergraduate studies to
prepare students to teach in the middle and
junior high school which focuses on teaching
learning processes and content areas which
are effective for working with the older child
and the young adolescent in grades 5
through 9. (Student has option of earning
elementary (grades K-9) 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 adviser.

1. Minimum hours required for this
curriculum 122 hrs.
2. General Education Requirement:
35 hrs. required for University General
Education requirement. An additional 5
hrs. in General Education courses drawn
from the College of Arts and Sciences
(nonprofessional courses only) and/or the
College of General Studies, are required
for Michigan certification.

3. Major/Minor Requirements Elementary
Certification Option
A. Two minors or group minors (20-24
hours); OR one minor or group major
(30-36 hours) selected from the
following areas: communication arts
and sciences, English, social science,
mathematics, science, foreign
languages.
B. Elementary Education minor; see
adviser in the Orientation and
Advisement Office for requirements.

Secondary Certification Option
1. One major or group major
2. One minor or group minor
3. Majors and minors must be selected from
the following areas: communication arts and sciences,
English, languages, linguistics (second
major only), social science,
mathematics, science.
4. It is strongly recommended that
majors and minors be chosen from
related disciplines. See adviser for
acceptable combinations.

4. Two semester-planned sequence
(usually taken in junior year)

Fall Semester
One course from: General Studies 122,
316, OR SOC 314, 320, 353, 514
CAS 170 Interpersonal Communications I
CAS 270 Interpersonal Communications II
3 hrs.
ED 312 Teaching of Elementary
Writing (required before two-semester
planned sequence) 4 hrs.
ED 332 Teaching of Reading in Elementary
Schools 3 hrs.
ED 398 Special Studies in Education
(English, topical seminars) 4 hrs.
Field Experiences (no credit) 4 hrs.

Winter Semester
ED 398 Special Studies in Education
(English, guidance of Young
Adolescents) 2 hrs.
ED 352 Reading and Related
Communication Skills for Middle and
Upper Grades 4 hrs.
ED 450 School and Society 4 hrs.
ED 507 Elementary School Social Studies
(elementary option OR methods course in
major or minor field—
secondary option) 3 hrs.
ED 471 Directed Teaching 4 hrs.

5. Professional Education
ED 200 Human Development and
Learning (required before two semester
planned sequence) 4 hrs.
ED 471 Directed Teaching 5 hrs.
471 Ed 410 are taken concurrently
during senior year.
Professional Education must total 21
hours; other professional education
requirements are included in two semester
planned sequence.

6. Physical Education 2 hrs.

Bachelor of Science
Degree Elementary Music Curriculum
Major: Music, Elementary
Minor: Elementary
Education
Grants certification to teach in elementary
grade room and elementary music.

1. Minimum hours required for this
curriculum 122 hrs.
2. Course Requirements
A. General Education Requirements 35
hrs. See University requirements for
General Education
B. Music Major 40 hrs.
Music convocation 101 (4 semesters) 0

Rural Elementary
Curriculum
Bachelor of Arts or Bachelor of Science
Degree State Elementary Provisional Certificate
Major attention is given to preparation for
teaching in schools located in rural or small
community areas—population 2,500 or less.
Students desiring to teach in these schools
will find considerable basic work in the curricula of rural life
and education.

1. Minimum hours required for this
curriculum 122 hrs.
2. Course Requirements
A. General Education Requirement: 35
hrs. See University General
Education requirements. An additional 5
hrs. in General Education courses drawn
from the College of Arts and Sciences
(nonprofessional courses only) and/or the
College of General Studies, are required
for Michigan certification.

B. Elementary Education Minor 24 hrs.
Requirements and approval for the
required minor are available in the
College of Education Orientation and
Approved majors and minors for the Secondary Education Curriculum. (Only programs listed below are acceptable for secondary education).

**Majors**

- Each major marked with an asterisk gives K-12 certification in that subject.
- Agriculture (AGR)
- American Studies (AMS)
- Anthropology (ANT)
  - *Art Education (includes Drawing and Design minor) (ARE)*
- Biology (BIO)
- Chemistry (CHEM)
- Communication Arts and Sciences (CAS)
- Distributive Education (DED)
- Earth Science (EARI)
- Economics (ECO)
- English (ENG)
- Geography (GEG)
- History (HIS)
  - *Home Economics (HHE)*
  - *Industrial Education Majors: General Arts (GAE)*
  - Drafting (DRA)
  - Electricity-Electronics (ELT)
  - Graphic Arts (GRA)
  - Metal Working (MRK)
  - Power-Automotives (POW)
  - Woodworking (WDO)
- Language Department Majors:
  - French (FREN)
  - German (GER)
  - Latin (LAT)
  - Russian (RUS)
  - Spanish (SPA)
  - *Linguistics (used only as 2nd major) (LIN)*
- Mathematics (MAT)
  - *Music Education (includes voice or instrumental minor) (MUS)*
- Physical Education Majors:
  - *Physical Education—Coaching (PEA)*
  - *Physical Education—Elementary (PEE)*
  - *Physical Education—Secondary (PES)*
  - Health Education (HED)
- Physics (PHY)
- Political Science (POL)
- Psychology (PSY)
- Science (need departmental approval) (SCI)
- Sociology (SOC)
- Theatre Education (THN)
- Vocational Technical Education (VIE)

**Minors**

- Agriculture (AGR)
- Anthropology (ANT)
- Art (ARE)
- Biology (BIO)
- Black American Studies (BAS)
- Chemistry (CHM)
- Communication Arts and Sciences (CAS)
- Dance Education (DAN)
- Distributive Education (DED)
- Earth Science (EARI)
- Economics (ECO)
- English (ENG)
- Environmental Studies (EVS)
- Family Life Education (FLE)
- Food Services (OCS)
- General Business (GBS)
- Geography (GEG)
- History (HIS)
- Industrial Arts (same minor areas as listed under major)
- International Area Studies Minors:
  - African Studies (AFS)
  - Asian Studies (SVS)
  - Cross Cultural Studies (CCS)
- Latin American Studies (LAS)
- Slavic Studies (SVS)
- Language Department Minors (Same as listed under major)
- Library Science (LIB)
- Linguistics (LIN)

**Mathematics (MAT)**

- Physical Education Minors: Physical Education—Secondary (PES)
- Health Education (HED)
- Political Science (POL)
- Psychology (PSY)
- Religions, Academic Study of (ASR)
- Retailing (RET)
- Science (need departmental approval) (SCI)
- Social Science (need departmental approval) (SOS)
- Sociology (SOC)
- Theatre Education (THN)
- Vocational Technical Education (VIE)

5. The candidate must satisfy the requirements for the B.A. or B.S. degree.

**Special Education Curriculum**

Bachelor of Science Degree

State Elementary Provisional Certificate

**Emotionally Disturbed**

For the preparation of teachers of the emotionally disturbed.

1. Minimum hours for this curriculum: 130 hrs. (If B.A. degree is desired, see Degrees for these requirements.)

2. Course Requirements

   (Listings marked with * indicate that a minimum of “C” must be earned in each course listed in the major. Those marked ** with are approved for General Education.)

   - General Education Requirement: 35 hrs. required for University General Education requirement. An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan certification.

   - Professional Education 14-15 hrs.

   - Human Development and Learning 250—4 hrs.

   - Teaching and Learning in Jr. or Sr. H.S. 301—3 hrs.

   - Directed Teaching 470—9 hrs.

   - Seminar in Education 410—2 hrs.

   - School and Society—3 hrs. (usually taken concurrently in one semester) 14 C

   - Physical Education 2-8 hrs. (PEPR 340 will satisfy on hour of this requirement.)

3. The candidate for the State Elementary Provisional Certificate must present a teaching methods course in a major or minor field.

4. One major of 30 hours or a group major of 36 hours, and one minor of 20 hours or group minor of 24 hours or on second major in subjects or subject fields taught in the junior and senior high school. Certain courses in some departments may not be counted toward majors or minors (see course descriptions).
Course Requirements
(Listings marked with ** indicate that a minimum of "C" must be earned in each course listed in the major. Those marked with *** are approved for General Education.)

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<tr>
<th>Subject Field</th>
<th>Course Name</th>
<th>Hours</th>
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<tr>
<td>A. General Education</td>
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<td>An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan certification. (See &quot;Degree Requirements&quot; under Degrees and Curricula listed earlier in this Bulletin.)</td>
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<td>B. Communication Arts and Sciences, and English</td>
<td>170 *Children’s Literature 282</td>
<td>7</td>
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<td>Public Speaking 1130</td>
<td>3</td>
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<td>*Personal Communication 170</td>
<td>3</td>
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<tr>
<td>C. Mathematics and Psychology</td>
<td>Structure of Arithmetic 150</td>
<td>4</td>
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<td>General Psychology 194</td>
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<td>D. Professional Education</td>
<td>Human Development and Learning 250</td>
<td>4</td>
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<td>Teaching of Reading 312</td>
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<td>Communication Skills for Early Childhood 351</td>
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<td></td>
<td>or Reading and Related</td>
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<td>Communication Skills for Middle and Upper Grades 352</td>
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<td>Directed Teaching 471</td>
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<td>(Regular Class)</td>
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<td>E. Fine Arts (Art and Music)</td>
<td>Fine Arts (Art and Music)</td>
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<td>Music for the Classroom Teacher 140</td>
<td>3</td>
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<td>or Music in Special Education 384</td>
<td>4</td>
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<td></td>
<td>Art Education Workshop 150</td>
<td>3</td>
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<tr>
<td>F. Practical Arts</td>
<td>Childhood/Adulthood Crafts and Adapted Techniques 190</td>
<td>3</td>
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<td>Practical Arts 3 hrs.</td>
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<td>Childhood/Adulthood Crafts and Adapted Techniques 190</td>
<td>3</td>
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<tr>
<td>G. Mentally Handicapped—Major * 39 hrs.</td>
<td>Practicum in Special Education 531</td>
<td>2</td>
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<td>Practicum in Special Education 531</td>
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Education for the Elementary School

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<th>Subject Field</th>
<th>Course Name</th>
<th>Hours</th>
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<td>Mentally Handicapped—Major * 39 hrs.</td>
<td>3</td>
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<td>Practicum in Special Education 531</td>
<td>2</td>
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<td>Behavior Disorders in School-Aged Learners 588</td>
<td>3</td>
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<td>Nature and Needs of the Mentally Retarded 532</td>
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<td>Educational Provisions for Handicapped Adolescents and Young Adults 560</td>
<td>3</td>
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<td>Orthopedic Conditions: Therapeutic Education Implications 543</td>
<td>4</td>
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<td>**Communication Disorders 200</td>
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<td></td>
<td>Diagnostic and Prescriptive Techniques in Special Education 533</td>
<td>4</td>
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<td>Curricular and Instructional Provisions for Exceptional Children 534</td>
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<td>Directed Teaching (Special Education) 474</td>
<td>8</td>
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<td>Seminar in Education 410</td>
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<td></td>
<td>School and Society 450</td>
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<td></td>
<td>Physical Education 2 hrs.</td>
<td>2</td>
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<td>Physical Education for the Elementary Teacher 340</td>
<td>2</td>
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<tr>
<td></td>
<td>One academic minor in a subject or subject field taught in the elementary school</td>
<td>20</td>
</tr>
</tbody>
</table>

Electives (Approved by curriculum adviser)

5. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.

6. Beginning July 1, 1983, the candidate must complete a minimum of 6 semester hours in Methods of Teaching Reading.

Orthopedically Handicapped

1. Minimum hours for this curriculum .................................. 130 hrs.
2. Course Requirements
(Listings marked with ** indicate that a minimum of "C" must be earned in each course listed in the major. Those marked with *** are approved for General Education.)

<table>
<thead>
<tr>
<th>Subject Field</th>
<th>Course Name</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td>General Education Requirement</td>
<td>35</td>
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<td>An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan certification. (See &quot;Degree Requirements&quot; under Degrees and Curricula listed earlier in this Bulletin.)</td>
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<tr>
<td>B. Communication Arts and Sciences, and English</td>
<td>English</td>
<td>4</td>
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<td>**Children’s Literature 282</td>
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<td>Public Speaking 1130</td>
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<td>*Personal Communication 170</td>
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<td>C. Mathematics and Psychology</td>
<td>Structure of Arithmetic 150</td>
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<td>General Psychology 194</td>
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<td>D. Professional Education</td>
<td>Human Development and Learning 250</td>
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<td>Teaching of Reading 312</td>
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<td>Communication Skills for Early Childhood 351</td>
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<td>Communication Skills for Middle and Upper Grades 352</td>
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<td>Directed Teaching (Regular Class)</td>
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<td>E. Fine Arts (Art and Music)</td>
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<td>Music for the Classroom Teacher 140</td>
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<td>or Music in Special Education 384</td>
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<td>Art Education Workshop 150</td>
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<td>F. Practical Arts</td>
<td>Childhood/Adulthood Crafts and Adapted Techniques 190</td>
<td>3</td>
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<td>Practical Arts 3 hrs.</td>
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<td>G. Orthopedically Handicapped—Major * 39 hrs.</td>
<td>Education of Exceptional Persons 530</td>
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<td>Practicum in Special Education 531</td>
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Educational Provisions for Handicapped Adolescents and Young Adults 560 | 3

Orthopedic Conditions: Therapeutic Education Implications 543 | 4

**Communication Disorders 200 | 3

Diagnostic and Prescriptive Techniques in Special Education 533 | 4

Curricular and Instructional Provisions for Exceptional Children 534 | 4

Directed Teaching (Special Education) 474 | 8

Seminar in Education 410 | 2

School and Society 450 | 3

Physical Education 2 hrs. | 2

Physical Education for the Elementary Teacher 340 | 2

One academic minor in a subject or subject field taught in the elementary school | 20 hrs.

Electives (Approved by curriculum adviser)

5. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.

6. Beginning July 1, 1983, the candidate must complete a minimum of 6 semester hours in Methods of Teaching Reading.

Visually Handicapped

1. Minimum hours for this curriculum .................................. 130 hrs.
2. Course Requirements
(Listings marked with ** indicate that a minimum of "C" must be earned in each course listed in the major. Those marked with *** are approved for General Education.)

A. General Education Requirement . . . . . . . . . . . . . . 35 hrs.

An additional 5 hrs. in General Education courses drawn from the College of Arts and Sciences (nonprofessional courses only) and/or the College of General Studies are required for Michigan certification. (See "Degree Requirements" under Degrees and Curricula listed earlier in this Bulletin.)

B. Communication Arts and Sciences, Language, and English

**Children’s Literature 282 | 4

Public Speaking 1130 | 3

*Interpersonal Communication 170 | 3

C. Mathematics and Psychology

*Structure of Arithmetic 150 | 4

**General Psychology 194 | 3

D. Professional Education

11-12 hrs. Human Development and Learning 250 | 4

Teaching of Reading 312 | 3

or Reading and Related

Communication Skills for Early Childhood 351 | 4

or Reading and Related

Communication Skills for Middle and Upper Grades 352 | 4

Directed Teaching (Regular Class) | 4

E. Fine Arts (Art and Music) 7 hrs.

Music for the Classroom Teacher 140 | 3

or Music in Special Education 384 | 4

Art Education Workshop 150 | 3

F. Practical Arts

3 hrs. Childhood/Adulthood Crafts and Adapted Techniques 190 | 3

G. Visually Handicapped—Major * 38 hrs.

Education of Exceptional Persons 530 | 3

Practicum in Special Education 531 | 2

Behavior Disorders in School-Aged Learners 588 | 3

Educational Provisions for Handicapped Adolescents and Young Adults 560 | 3

Orthopedic Conditions: Therapeutic Education Implications 543 | 4

**Communication Disorders 200 | 3

Diagnostic and Prescriptive Techniques in Special Education 533 | 4

Curricular and Instructional Provisions for Exceptional Children 534 | 4

Directed Teaching (Special Education) 474 | 8

Seminar in Education 410 | 2

School and Society 450 | 3

Physical Education 2 hrs. | 2

Physical Education for the Elementary Teacher 340 | 2

One academic minor in a subject or subject field taught in the elementary school | 20 hrs.

Electives (Approved by curriculum adviser)

5. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.

6. Beginning July 1, 1983, the candidate must complete a minimum of 6 semester hours in Methods of Teaching Reading.

CURRICULA 143
Education of Blind and Partially Sighted 592 2
Diagnostic and Prescriptive Techniques in Special Education 533 4
Curricular and Instructional Provisions for Exceptional Children 534 4
Braille and Other Communication Methods 591 2
Methods and Techniques of Teaching Braille and Other Areas of Communication 593 3
Physiology and Function of the Eye 590 2
Principles of Orientation and Mobility for the Blind 594 3
Directed Teaching (Special Education) 474 8
Seminar in Education 410 2
School and Society 450 3
H. Physical Education 2 hrs.
Physical Education for the Elementary Classroom Teacher 340 2
3. One academic minor in a subject or subject field taught in the elementary school 20 hrs.
4. Electives (Approved by curriculum advisor)
5. The candidate must satisfy the requirements for the B.S. degree or the B.A. degree.
6. Beginning July 1, 1983, the candidate must complete a minimum of 6 semester hours in Methods of Teaching Reading.

Reading Center and Clinic

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. See Education and Professional Development course listings for reading courses offered.

Counseling and Personnel (CP)

Paul L. Griffeth, Chair
Beverly Belson
Robert L. Betz
Kenneth Bullmer
William A. Carlson
John S. Geissler
Robert F. Hopkins
Neil Lamper
Gilbert E. Mazer
Robert Oswald
Avner Stern
Edward L. Trembley
Thelma Urbuck

The Department of Counseling and Personnel offers professional education in the fields of counseling and personnel. Most of the courses are open to graduate students only, but the following courses are open to qualified undergraduates.

Course Descriptions

**580 Principles and Philosophy of Guidance 2 hrs.**

An introductory course for elementary and secondary teachers, and others interested in guidance. A thorough investigation of the philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an an overview of guidance services.

**581 Interpretation and Use of Tests in Guidance 2 hrs.**

Designed to familiarize students with various psychological tests and scales that may be used in school guidance programs. Tests are taken and scored by students, and the results are interpreted and evaluated.

**583 Guidance Workshop 1-4 hrs.**

Designed for teachers and counselors who wish to study particular guidance problems and procedures in relation to their local guidance program. (C-Card required.)

Education and Professional Development (ED)

Thomas Ryan, Chair
David W. Adams
James Armstrong
Fred S. Bailey
Keith Bailey
Alfred Balkin
Dorothy Blaadt
James Bosco
Robert Brashear
Beatrice Brenton
James Burns
Mary A. Cain
Joe R. Chapel
Arthur Christensen
Mary Cordier
Ronald A. Crowell
David H. Curl
Edsel Erickson
Mary Frances Fenton
Franklin Fisk
June France
Richard Harring
Edward Hening
Arthur Howson
Norma Hungerford
Rachel Inselberg
William Kander
Ted K. Kilty
Robert Kotecki
Phillip Larsen
Bruce Lloyd
Dorothy McGrins
Barbara Mehoke
Owen Middleton
George Miller
Daniel Moore
Frank Olenchak
Carol P. Smith
Dorothy E. Smith
Virginia Sorenson
Robert Travers
Jess Walker
Frank Wangberg
Arche Watson

Courses are designed to meet the professional needs of the student preparing to teach. All students pursuing a curriculum for a secondary provisional certificate and a degree are required to take a minimum of 21 hours of professional education courses, plus a methods course offered in the major or minor field; students in elementary education are required to complete 21 hours in professional education courses.

Elective courses are available in the following fields: elementary education, secondary education, special education, methods of teaching, foundations of education, and related areas. Certain special methods courses are available in other departments of the university.

Students take the block of Integrated Professional Education courses 410, 450, and 470 during either semester, or the combined spring and summer sessions, of their senior year. Students with irregularities in their professional work, or with advanced credit in education, should confer with the Education Orientation and Advisement Office at the earliest possible date. Those majoring in certain fields requiring continuous study throughout the senior year may, upon application to the Office of Professional Field
Course Descriptions

101 College Skills
2 hrs.
Designed to help students find and eliminate specific weaknesses in reading skills and habits. Emphasis is placed on gathering and organizing academic information through which students may build independence.

102 Techniques of Learning and Adjustment
2 hrs.
Designed to aid the student in making a more adequate academic and social adjustment. Attention is given to scheduling, note-taking, study techniques, and examination writing. Principles of effective learning are discussed and demonstrated.

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.

104 Effective Reading for College Students
2 hrs.
Designed to show the student how to make more effective use of text and reference books and materials. A study of classroom reading, vocabulary building, problem solving, concentration, and critical reading. Group and individual conferences are provided. Credit for this course will not apply to the number of credits needed for graduation.

105 Advanced Reading
2 hrs.
Designed to increase reading rates and comprehension skills. Provides the well-adjusted academic student with an opportunity to develop more sophisticated skills.

230 The Nature of Creativity
4 hrs.
This course literally explores the nature of creativity—its process, its product, its characteristics, its values, and its relationship to human beings and society. Growth in aesthetic sensitivity, personal interaction, self-confidence, and ability to solve problems creatively are the objectives of this course, which is taught cooperatively by a faculty member from Education and Professional Development and one from Communication Arts and Sciences. Open to all students.

250 Human Development and Learning
4 hrs.
This course traces the development of human beings from conception to maturity. Consideration is given to those factors which facilitate or inhibit normal progress in the areas of physical, emotional, social, and intellectual development. Attention is also given to the development of the self-concept for the purpose of helping students to become more aware of themselves and of their relationships with others. Students are required to observe and/or participate with children and/or youth during the semester enrolled. The method, purpose, and location of such experiences shall be determined by the instructor.

260 The Cognitive Development of the Child
2 hrs.
This course focuses on the physical, social, emotional, and cognitive development of the child, birth through age 12 years. Special attention is given to cognitive development viewed in a Piagetian framework. Applications to the teaching of language arts are emphasized. (This course is required for the integrated language arts minor and in that program must be taken concurrently with ILAMSPP 260.)

300 Teaching and Learning (Elementary)
3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management; noninstructional duties of the teacher in the school and community. Requires two half days per week for participation. Offered only during the Fall and Winter Semesters and Spring Session. Prerequisite: ED 250.

301 Teaching and Learning (Secondary)
3 hrs.
This course is designed to prepare students for the responsibilities of classroom instruction. Emphasis is placed on: purposes of the school; selection and organization of learning experiences; instructional methods and materials; patterns of curriculum organization; classroom management; noninstructional duties of the teacher in the school and community. Requires two half days per week for participation. Offered only during the Fall and Winter Semesters and Spring Session. Prerequisite: ED 250.

311 Reading Workshop
3 hrs.
The basic purpose of the workshop will be to study typical classroom reading problems. Tools useful in identifying problems, materials available, and techniques for the teaching of reading will be examined and experimented with in the classroom. Special consideration will be given to case study of one severe reading problem.

312 The Teaching of Reading (Elementary)
3 hrs.
A summary of the results of the scientific studies made in the field of reading. Methods of teaching reading are critically analyzed. Stress is placed on appropriate materials at various levels.

322 The Teaching of Reading (Secondary)
3 hrs.
This course deals with methods and materials for improving reading in the junior and senior high school. Both developmental and remedial procedures are stressed.

350 Young Children, Their Families, and Their Society
3 hrs.
A study of the effects of family, peer group, and society on the development of young children. Emphasis will be placed on family styles and child-rearing practices and their effects on learning and other behavior. Family constellations, the learning of sex roles, the effects of divorce, and similar phenomena will be studied. Consideration will be given to the effect of cultural and subcultural influences on early childhood development and students will look at the contemporary American scene as it affects young children. Prerequisite: ED 250.

351 Reading and Related Communication Skills for Early Childhood
4 hrs.
A study of the young child's verbal and nonverbal language and how to record and interpret language. An awareness of the relationship of experience to language development and of the many approaches to reading. Emphasis will be placed on an examination and evaluation of current reading programs for young children, as well as on experiences in selecting books, storytelling, writing for and with children, and the production of a wide variety of audiovisual materials to be used with children.

352 Reading and Related Communication Skills for Middle and Upper Grades
4 hrs.
A study of the multi-ethnic language of this age group and of how these youngsters record and interpret language. Emphasis will be placed on an examination and evaluation of reading programs in current use, on skills for teaching reading, and on individualized learning. Grouping for learning, skills for reading in the content fields, testing, and remedial techniques will be stressed. Emphasis will be placed on book selection, storytelling, creative writing, and the production of a wide variety of audiovisual materials to be used in selected classrooms.

355 Learning Experiences for Young Children
3 hrs.
This course is designed to help students become skillful in diagnosing learning needs and in designing, practicing, and evaluating learning experiences for young children. Emphasis will be placed on the importance of play to young children's learning. Students will receive practice in producing stimulating experiences, environments, and materials for young children's concept development.

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 Chairman, and (2) that prior arrangement be made with a faculty member or faculty members. The course offers variable credit from one through six semester hours. Students may repeat the course so long as topics differ. Each offering of 398, Special Studies in Education, will be given an appropriate subcode, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subcode. No more than six hours of 398 may be applied toward meeting professional program requirements.

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, teaching techniques, and teaching strategies that are currently being used in the elementary school science classroom.

402 Seminar in Science and Mathematics
2 hrs.
This capstone course required of all students in the science and mathematics teaching
minor will afford the student classroom teaching and observing experiences on a regular basis. In addition to the required classroom participation of 2-3 hours per week, the student will meet weekly in a seminar with the supervising faculty from science, mathematics, and education.

410 Seminar in Education
2 hrs.
(Taken in conjunction with Directed Teaching) Students work individually and in groups on the kinds of problems faced in directed teaching situations in the classroom, school, and community. Other problems to be faced later as full-time teachers are considered. Suggestions and guidance are offered by staff members and by resource persons.

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.

450 School and Society
3 hrs.
This course is concerned with the utilization of change in society as a force in directing American education. The course is directed toward modern problems in education as well as a futuristic look at its possible development. Course content centers around analyses of the influences which areas as the political, legal, economic, social, psychological, historical, philosophical. Consideration is given to the individual's role in the change process in education. An interdisciplinary approach is used.

455 Historical, Social, and Philosophical Perspectives on Education for Young Children
3 hrs.
A review of the history and philosophy of early childhood education in its social setting with an application to today’s programs for young children. Students will visit, appraise, and critically evaluate a variety of programs for young children. Experiences will be provided in designing and evaluating programs in the light of philosophy and of specific objectives. Ways of administering and financing programs for young children will be considered.

460 Integrated Language Arts Seminar
4 hrs.
This course will focus on synthesizing theories, concepts, and classroom approaches from previous work in the integrated language arts minor. Students will practice restructuring curriculum objectives, classroom organization, and teaching strategies in order to achieve the maximum 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. (This course is required in the integrated language arts minor.)

470 Directed Teaching
9 hrs.
Students devote a minimum of four and one-half days per week for one semester to Directed Teaching. They are expected to have experience in both the curricular and extra-curricular programs of the school in which they teach. All students expecting to do Directed Teaching should enroll well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: Successful completion of ED 250 and 300, 301, or equivalent prior to beginning Directed Teaching; an academic average of 2.0 in all education courses and in overall average, as well as in teaching major or minors to be used for certification. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

471 Directed Teaching
1-8 hrs.
Only for seniors who have completed most of their professional course work prior to the senior year. Similar to description for 470. Students should enroll for ED 471, 472, or 474 well in advance of the semester in which the Directed Teaching is to be done. Prerequisite: Successful completion of ED 250 and 300, 301, or equivalent prior to beginning Directed Teaching; an academic average of 2.0 in all education courses and in overall average, as well as in teaching major or minors to be used for certification. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

472 Directed Teaching
4-9 hrs.
Only for seniors who have previously fulfilled a part of their requirement in Directed Teaching. Similar to description for 471. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

474 Directed Teaching
4-8 hrs.
Only for students specializing in special education. Candidates must be approved by the Head of the Special Education Department. The student shall present documented evidence of successful field experience with children or young people prior to beginning a Directed Teaching assignment.

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 towards a Master's degree.

504 Adult Development
3 hrs.
This course will provide 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 role of males and females, and unique health stresses. Emphasis will be placed on the identification of patterns of lifelong learning leading to a more fulfilling life.

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, learning capabilities, abilities, approaches, and speed of learning will be considered. Motivation as prerequisite for high-level well-being and problem solving will be studied. Limited to 20 students.

506 Teaching in Adult Education
3 hrs.
This course is designed to provide teachers with a knowledge of special situations incurred in the teaching of adults. Included also are techniques of instruction, communication with adults, as well as a practical exercise in the designing of learning experiences for adults. Extensive use will be made of audiovisual media, experts in the field, and field observation in adult learning activities. The course should be helpful to administrators in planning inservice programs for their own staff.

507 Teaching of Social Studies in the Elementary Schools
3 hrs.
This course is designed to help teachers understand the role of the social studies in the elementary school. Candidates will make important considerations in the selection of text, and discover how to guide and assess the learning of children in this field. Planning social studies experiences, and ways of working with children in a classroom setting, will be emphasized. (Co-requisite: ED 300 for students required to take ED 300.)

508 Parent Education
2 hrs.
Places major emphasis on home problems which have educational implications for the child. Parent-teacher relationships, counseling programs, and cooperative efforts for improvement of education in home and in school are studied.

509 Parent Education for Teachers of Young Children
3 hrs.
Presents a variety of techniques for teachers to use in working together with parents. Teachers will study child-rearing factors which parents must know. The course will help teachers to develop their own record-keeping systems, ways of involving parents in their children's education, and ways of making meaningful reports to parents. The education of parents as aides is included.

510 The Elementary Curriculum
2 hrs.
A consideration of content and procedures to adapt experiences of pupils in elementary schools to modern conditions and to child needs and interests. Individual or committee reports concerning the improvement of various aspects of the elementary school curriculum will be prepared.

511 Developmental Reading Theory and Application
3 hrs.
Emphasizes the application of reading theory in the teaching of reading, skills to
elementary and secondary students. Intensive study of the theory and practice of individualized reading, language experience approaches, and basal reading materials will be made. Work on the actual use of materials with pupils to provide practical experiences in teaching on an individual and small group basis. Efficiency of reading procedures will be studied through actual use with pupils. Intended to provide potential teachers with an introduction to basic reading theory as applied to materials, programs, and conditions likely to be encountered in the field. Prerequisite: ED 312 or 322.

514 Nursery-Kindergarten Education 2 hrs.
This course will acquaint the students with the history and present-day status of nursery school and kindergarten education. Consideration will be given to organization, equipment, curriculum, and approved teaching procedures.

515 Seminar in Teaching of Social Studies 3 hrs.
Consists of two parts: perspectives and implementation. Under perspectives, a staff of social scientists will share with the participants their thinking concerning significant ideas and concepts from their disciplines that further amplify topical coverage. Opportunities will be provided for the participants to implement social studies methods and skills in actual classroom and other situations.

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.

517 Reading in the Content Area: Social Sciences 3 hrs.
518 Reading in the Content Area: Science, Math, and Industrial Arts 3 hrs.
Designed to acquaint junior and senior high school teachers with the reading skills which should be taught and refined in their specific curricular areas. An effort will be made to help teachers, through demonstration and practice, achieve optimal benefit from secondary textbooks and related reading materials.

520 Implications of Piaget's Research for Curriculum Design 3 hrs.
Provides the student with an understanding of the structure of the intellect developed by Piaget and examines the implications of this structure for the design of the curriculum. Some practical work will be combined with a study of the research on which Piaget has built his theory of intellectual development.

521 Piaget and Young Children 3 hrs.
Examines significant contributions of Piaget to our understanding of young children's learning. Knowledge of how young children think will be applied to early childhood curriculum. Teachers will apply Piagetian tasks and will be able to improve curriculum for young children with growing understanding of these children's minds.

525 Rural Life 2 hrs.
Critical study of recent books in rural social life. Consideration is given to individual problems related to social aspects of community life. Special problems are selected for study by each student. Field work is encouraged. Prerequisite: ED 220.

527 Instructional Planning in Accountability Context 3 hrs.
The purpose of the course is to assist the student in developing an understanding of models of accountability in education; in writing educational goals and performance objectives; in using various assessment procedures to determine the needs of the learner and the extent to which objectives have been achieved, and in determining appropriateness of instructional procedures for specified educational goals.

530 Introduction to Career Education 3 hrs.
This course is designed to acquaint teachers with the concepts of career education. Course work is centered on ways and means to incorporate career education into the existing curriculum structure at all levels of instruction.

535 Introduction to Teaching the Disadvantaged 3 hrs.
Designed for teachers and administrators who are presently working with disadvantaged children and youth. Class meetings are centered around problems arising from practical situations, particularly with respect to effective factors of environment and their relation to teaching and learning. Extensive use is made of consultants from social, governmental, and educational agencies working with the disadvantaged.

548 Audiovisual Media I 3 hrs.
An introduction to audiovisual media as effective means for achieving educational objectives in presentation, interactive, and individualized modes of instruction. Emphasizes evaluation, selection, production, and classroom use of commercially available and locally produced instructional materials. Students are expected to participate in laboratory experiences in which they produce materials such as mounted and laminated pictures and displays, overhead projection transparencies, audio tapes and photographic slides and to demonstrate proficiency in the operation of audiovisual equipment. In addition to texts, each student should plan to spend $15 or more for supplies and have the use of a simple camera. Limited to 20 students.

549 Audiovisual Media II 3 hrs.
A continuation of ED 548 in which teachers and media specialists consolidate basic audiovisual skills and deal in depth with more advanced processes and techniques. Laboratory experiences may include production of complex transparencies, photographic slides, filmstrips, and prints; super 8 films; audio and video tapes; duplicated materials; and more sophisticated charts, posters, and displays. A systematic production planning process is emphasized, with consideration given to evaluating effectiveness of media and to requirements for operating a school building level media center. In addition to textbook, each student should expect to spend $15 or more for supplies and should have the use of a versatile camera. Limited to 15 students. Prerequisite: ED 548 or equivalent experience.

550 Photography Workshop 1-3 hrs.
Intended to sharpen visual perception while improving technical skills, this laboratory course emphasizes photography as a creative and expressive medium of visual communication. Each student is expected to produce new photographs each week and to submit one or more mounted enlargements for group critique at each class meeting. Each student must have the use of appropriate equipment and should expect to spend $25 or more for supplies. Although no prerequisite is required, it is helpful to have had some experience with basic darkroom processes. May be repeated up to a total of six credits. Limited to 15 students.

552 Comparative Education 3 hrs.
This course is intended to provide students with an introduction to the field of comparative/cross-cultural education. The education philosophy and goals, curricula, administrative structure, educational technology, financing, and methods of instruction characteristic of selected European countries are examined, and compared with parallel features of the American educational system.

560 Practicum: Sociological and Psychological Foundations of Teaching the Disadvantaged 3-6 hrs.
The initial course required of all students in the M.A. program for teaching the disadvantaged. Designed to develop awareness of family situations, community conditions, behavior, value systems, and characteristics of the disadvantaged, as well as to develop positive attitudes toward these children and their problems. Consists of readings, lecture-discussions, and field experiences with the disadvantaged, including home visits, visits to social and governmental agencies, and school experiences including supervised teaching. Generous use is made of consultants from all agencies dealing with the problems of the disadvantaged.

597 Reading and Related Language Experiences 3 hrs.
This course involves a study of the current research and as practical as 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 better the language of reading in a total language arts program and to give students an opportunity to make application to practical classroom situations.

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 adviser and instructor.

Educational Leadership (EDLD)
Thomas Ryan, Chair
Harold W. Boles
Robert O. Brinkerhoff
Mary Anne Bunda
David J. Cowden
Kenneth E. Dicke
James R. Sanders
Lawrence B. Schlack
Carol F. Sheffer
Ulris Smidchens
Charles C. Warfield

This department offers curricula in line administration, staff administration, and program leadership, leading to a degree of Master of Arts, Specialist in Education, or Doctor of Education. While most of the department's courses, seminars, studies, etc., are intended for graduate students, programs of studies may be outlined and pursued by advanced undergraduate students whose career goals include positions as leaders in the many and varied educational agencies that are operative in society today. Interested students should see The Graduate College Catalog for more detail.

Professional Health, Physical Education and Recreation
Roger Zabik, Chair
Donald Boven
Bill Chambers
Bilvee Ann Cheatum
Charles Comer
Harriet Creed
Robert Cutl
George Daies
Ruth Davis
Mary Dawson
David Digel
Frances Ebert
Jean Friedel
George Hobbs
Jack Jones
Janet Kanzler
Patricia Lemasnts
Ruth Ann Meyer
John Miller
Margie Jeanne Miner
Fred Orlofsky
Richard Raklovs
Harold L. Ray
William Rowerkamp
Merle Schlosser
William Schreber
Norma Stafford
Barbara Stephenson
Fred Stevens
Ronald Winter
Robert Wyman

The professional programs are based on the concepts of (1) balanced preparation that enables the student to later specialize at the graduate level. (2) exposure to practical experiences throughout the professional sequence, (3) many 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
2. Physical Education Group Major
   A. Coaching Emphasis
   B. Elementary Emphasis
   C. Secondary Emphasis
3. Recreation

**Minors**
1. Athletic Training
2. Coaching
   A. Phys. Educ. major
   B. Non-PE major
3. Elementary Physical Education
4. Health Education
5. Interdisciplinary Minor in Special Education
6. Recreation
7. Secondary Physical Education

The professional student is expected to work closely with a departmental adviser 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 12 semester hours for a major and 9 for a minor must be taken at Western Michigan University. It is recommended that PEPR 344 (3) and PEPR 345 (3) be included in the hours taken at Western Michigan University.

**Alternative Careers**
The student may select a student planned curriculum in order to pursue a career in sports business; sports management; sports journalism, etc. The student must see an adviser 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 and/or the College of General Studies.

**Majors**

**Health Education Major**
36 credit hours
Bachelor of Science Degree State Elementary or Secondary Provisional Certificate

The health education major is a program to prepare health educators who can influence the psychological, sociological, and biological development of individuals and groups to effectively meet the health needs of society. The major is designed so graduates may enter first level positions in both schools and community agencies and qualify for graduate work.

Students planning to enter community health positions are not required to take directed teaching or courses in the education block. Students planning to major in health should consult a department adviser promptly after choosing this major, usually not later than the sophomore year.

Health education majors are expected to have a valid First Aid Certificate at the time of graduation.

**Course Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Education</td>
<td>35</td>
</tr>
<tr>
<td>2. Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>3. Recommended: Students who wish to substitute other courses should consult the adviser in advance:</td>
<td></td>
</tr>
<tr>
<td>Required Cognates</td>
<td>10</td>
</tr>
<tr>
<td>PSY 194 General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td>150</td>
</tr>
<tr>
<td>SOC 200 Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 107 Biological Science</td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>BIO 101 (Substitute BMED 210 Anatomy or 240 Physiology)</td>
<td>4</td>
</tr>
<tr>
<td>4. Required Courses</td>
<td>28</td>
</tr>
<tr>
<td>PEPR 100 Health for Better Living</td>
<td>4</td>
</tr>
<tr>
<td>PEPR 211 Community Health—Public Health I</td>
<td>3</td>
</tr>
<tr>
<td>PEPR 314 Elementary School Health and Safety Education</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td>PEPR 315 Secondary School Health and Safety Education</td>
</tr>
<tr>
<td>PEPR 411 Public Health II</td>
<td>3</td>
</tr>
</tbody>
</table>
COACHING EMPHASIS 24

Required Courses
1. Coaching Emphasis 7
   PEPR 235 Theory of Coaching 2
   PEPR 236 Officiating (Sport) 1
   PEPR 380 Found Sports Injuries 2
   PEPR 400 Professional Field Experience 2

2. Coaching Techniques 9
   PEPR 100 Sports Activity Series 3
   PEPR 337 Adv. Techniques and Coaching Series 6
   Baseball Basketball
   Field Hockey
   Football
   Gymnastics Soccer Softball
   Speed Swimming/
   Diving Synchronized Swimming
   Tennis
   Track & Field
   Volleyball

3. Required Activity Courses 5
   Any PEPR or PEGN Activity Courses approved by adviser.

4. Elective Courses 6
   PEPR 236 Officiating (Sport) 1
   PEPR 250 Cultural Bases HPER 2
   PEPR 335 Team Manager Participation 1
   PEPR 344 Teach. of PE—Elementary 3
   PEPR 392 Meas. & Evaluation 3
   PEPR 440 Nature and Bases of Mtr. Skis 2
   Teaching Assistant NC

PROFESSIONAL EMPHASIS 24

Required Courses
1. Coaching Emphasis 7
   PEPR 235 Theory of Coaching 2
   PEPR 236 Officiating (Sport) 1
   PEPR 380 Found Sports Injuries 2
   PEPR 400 Professional Field Experience 2

2. Coaching Techniques 9
   PEPR 100 Sports Activity Series 3
   PEPR 337 Adv. Techniques and Coaching Series 6
   Baseball Basketball
   Field Hockey
   Football
   Gymnastics Soccer Softball
   Speed Swimming/
   Diving Synchronized Swimming
   Tennis
   Track & Field
   Volleyball

3. Required Activity Courses 5
   Any PEPR or PEGN Activity Courses approved by adviser.

4. Elective Courses 6
   PEPR 236 Officiating (Sport) 1
   PEPR 250 Cultural Bases HPER 2
   PEPR 335 Team Manager Participation 1
   PEPR 344 Teach. of PE—Elementary 3
   PEPR 392 Meas. & Evaluation 3
   PEPR 440 Nature and Bases of Mtr. Skis 2
   Teaching Assistant NC

1. PEGN 101 Archery
   PEGN 109 Cycling
   PEGN 120 Fencing
   PEGN 130 Golf
   PEGN 140 Hunting
   PEGN 143 X-Country Skiing

2. Select 1 course
   DANC 101 Beginning Ballet I
   DANC 102 Beginning Jazz
   DANC 103 Beginning Modern I
   PEPR 130 Wrestling

Group IV: Individual Sports — Course or proficiency ** in all of list 1; 1 from list 2
1. PEGN 101 Archery
   PEGN 102 Badminton
   PEGN 103 Yoga
   PEGN 104 Cycling
   PEGN 107 Cross Country Skiing
   PEGN 143 X-Country Skiing

2. PEGN 102 Archery
   PEGN 103 Yoga
   PEGN 104 Cycling
   PEGN 107 Cross Country Skiing
   PEGN 143 X-Country Skiing

MINIMUM OF 1 ADDITIONAL INDIVIDUAL SPORT

PEGN Swimming course at own level 8

Suggested Elective Courses 8
Selection of any PEPR or PEGN activity course as approved by department academic adviser, according to the needs of the individual student.

PEGN 102 Badminton
PEGN 103 Yoga
PEGN 104 Cycling
PEGN 107 Cross Country Skiing
PEGN 143 X-Country Skiing

SECONDARY EMPHASIS 24

(Proficiency examination procedure may be obtained from department adviser. See ** below.)

Group I: Swimming—2 courses at own swimming level 2

Group II: Required—DANC 106 Recreational Dance 1

(See also Group IV)

Group III: Team Sports—Course or proficiency ** in all PEPR 104 Soccer, Spbl., Fl. Ftbl. OR

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OR
Group Vb: Concentration Areas—Select I, II, or III for 3 credit hours minimum.

1. Sports
   First level course or proficiency ** from
   Group II or IV.
   PEPR 236 Officiating (same activity)—1 cr. hr.

2. Swimming
   Select hours with assistance of adviser
   (i.e. Speed Swimming; Synchronized
   Swimming; Springboard Diving, etc.)

3. All 3 hours from same dance form

Group VII:

Additional Electives—4 credit hours minimum

OR

I. Required Core: 13

2. Behavioral Sciences
   CHEM 101 or 102 Gen. Chemistry 4
   GSCL 133 Issues in Social Biology 3
   PHY 106 Elementary Physics 4

II. Electives:
   3-6
   1. Basic Sciences
      BIOL 205 Human Body Hist. & Disease 4
   2. Behavioral Sciences
      CAS 170 Interpersonal Communication 3
   3. Health Educ. Aspects of Man & His Environment
      BIOL 512 Health Problems 3
      CRIT 210 Intro. Human Sexuality 3
      PEPR 235 Theory of Coaching 2
      PEPR 320 P.E. Exceptional Child 3
      PEGR 516 Issues in Health Education 1-3
      PEGR 580 Studies in Sports Medicine 3
      SWRK 572 Recreation for the Aged 2
      ED 340 Safety Education 3
      ED 555 Alcohol Education 2

Additional Requirements:
*1. Current lifesaving certificate or satisfactory completion of PEPR 250 Lifesaving or PEPR 350 W.S.I. required
*2. Six hundred (600) clock hours of clinical experience

Group II. ADMINISTRATIVE SKILLS—Not more than four courses

PEPR 368 Organization & Administration of Intramurals 2
CAS 130 Public Speaking 3
MGMT 250 Social Business Management 2
BIS 288 Records Management 2
BIS 556 Office Management 3
BIS 242 Business Communications 3
BIS 102 Intro. to Information Processing 3
ACCT 201 Accounting 3
GEOG 312 Geology of National Parks and Monuments 2-3
GEOG 544 Environmental Geology 3
ECON 319 Environmental Economics 3
CRT 363 Landscape Design 3

GROUP III. COMMUNITY ORGANIZATION SKILLS—Not more than four courses

PEGR 516 Issues in Health Education 2
SWRK 572 Community Agency Resources 2
SWRK 562 Community Organizations in Urban Areas 3
SOC 210 Modern Social Problems 3
SWRK 464 Problem Solving in Gerontology 3
PEGR 572 Recreation for the Aged 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

Athletic Training Minor (Non-Teaching)

16-21 credit hours

Required Cognates:

BMED 112 Biology 3
BMED 210 Anatomy 4
BMED 240 Human Physiology 4

I. Required Core:
   PEPR 181 First Aid 2
   If not required in major or minor.
   PEPR 380 Foundations in Sports Injuries 2
   If not required in major or minor.
   CRT 260 Nutrition 3
   PEGR 400 Field Experience At. Trm. 3
   PEGR 580 Studies in Sports Medicine 3
   Topic I: Prev. & Diag. Treat. Inj. 2
   Topic II: Athletic Train. Tech 2

II. Professional Electives:
   14
   PEPR 337 Advanced Techniques and Coaching Series—Prerequisites: Must have had first level course (s) or permission of instructor. Elect 8 hours (must include at least one team sport and include at least one individual sport)

TEAM Hrs.

Basketball 2
Field Hockey 2
Coaching Minor—Non-P.E. Major

24 credit hours
This minor is a SECOND MINOR ONLY. It 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, field hockey, football, track and field, swimming, diving, tennis, volleyball, softball, gymnastics, and golf.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 235 Theory of Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 295 Biomech. Analysis of Act</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 300 Principles, Problems Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 380 Foundations of Sports Injuries</td>
<td>2</td>
</tr>
</tbody>
</table>

### Professional Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 390 Physiology of Motor Act</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 535 Principles, Problems Coaching</td>
<td>2</td>
</tr>
<tr>
<td>PEPR 536 Professional Electives</td>
<td>2</td>
</tr>
</tbody>
</table>

**PEPR 101-109 130-135 Professional Activity Courses**

### Health Education Minor

24 credit hours
A minor is offered in health education. It is open to all students and is especially appropriate for those so-galoring in elementary education, in special education, and in secondary education with majors in such areas as biology, home economics, physical education, psychology, and sociology. The health education group minor consists of 24 hours. The program is designed to offer courses in multidisciplinary areas and to meet state certification standards.

**Cognates—Students should elect BIOL 107—4 semester hours (Biological Sciences) as part of the distribution program in general education.**

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 236 Officiating—Select two of the following officiating courses to complete the 14 hours of Professional Electives</td>
<td>2</td>
</tr>
<tr>
<td>Baseball or Softball</td>
<td>2</td>
</tr>
<tr>
<td>Volleyball</td>
<td>2</td>
</tr>
<tr>
<td>Football</td>
<td>2</td>
</tr>
<tr>
<td>Tennis</td>
<td>2</td>
</tr>
<tr>
<td>Track and Field</td>
<td>2</td>
</tr>
<tr>
<td>Speed Swim/Div</td>
<td>3</td>
</tr>
</tbody>
</table>

**Speed Swim/Div**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 101-109, 130-135 professional activity courses</td>
<td>3</td>
</tr>
</tbody>
</table>

### Physical Education Minor/Elementary Emphasis

(Must be taken as part of Elementary Group Minor)

**1. Cognates**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 107</td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>BMED 112</td>
<td>3</td>
</tr>
<tr>
<td>BMED 210</td>
<td>4</td>
</tr>
<tr>
<td>ED 230</td>
<td>4</td>
</tr>
<tr>
<td><em>Applicable to total General Education requirement</em></td>
<td></td>
</tr>
</tbody>
</table>

**Hours Required for this minor** 21

**2. Required Professional Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 276 Outdoor Education</td>
<td>2</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 295 Biomech. Analysis of Activity</td>
<td>2</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 300 Physical Education for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 344 Teaching P.E. in the Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 102 Stunts, Tumbling, Trampoline</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 103 Beginning Gymnastics (Perm of Instructor)</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 132 Track &amp; Field</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>DANC 106 Recreational Dance</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>DANC 203 Teaching Dance in the Elementary School</td>
<td>3</td>
</tr>
</tbody>
</table>

**3. Electives**

*Elect from the following courses and/or other PEPR/PEGN courses with permission of adviser.*

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEGR 102 Badminton</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 131 Tennis</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 104 Soccer, Speedball</td>
<td>2</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEGR 139 Relaxation</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 165 Yoga</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 109 Volleyball</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 106 Basketball</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 107 Softball</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 180-181 First Aid</td>
<td>1-2</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 110 Physical Fitness</td>
<td>1</td>
</tr>
</tbody>
</table>

### Minor in Special Physical Education

22 credit hours
Designed to prepare special education and physical education majors in the area of recreation, physical education, swimming, health, and dance for the exceptional child. Students majoring in other curricula must take all courses listed for physical education majors and special education majors.

**1. Required Cognates**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 107</td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>BMED 112</td>
<td>3</td>
</tr>
<tr>
<td>BMED 210</td>
<td>4</td>
</tr>
<tr>
<td>CRT 266 Food for Man</td>
<td>3</td>
</tr>
<tr>
<td>CRT 210 Sex Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**2. Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 320 Physical Education for the Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 321 Therapeutic Needs and Exercises</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 400 Professional Field Experience</td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 420 Testing and Developmental Programs</td>
<td>3</td>
</tr>
</tbody>
</table>

**3. Background Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPR 101 Intro. to Games and Sports</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 132 Track &amp; Field</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEGR 139 Relaxation</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 344 Teaching Physical Educ. in Elementary Schools</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PEPR 325 Swimming for the Exceptional Child</td>
<td>3</td>
</tr>
</tbody>
</table>

**4. Background Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPED 530 Education of Exceptional Children</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>SPED 560 Educational Provision for Handicapped Adolescents and Young Adults</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>SPED 588 Behavior Disorders in School-Aged Children</td>
<td>3</td>
</tr>
</tbody>
</table>
Recreation Minor

24 credit hours

The recreation minor is designed to prepare students to assume leadership roles in public or private recreation agencies and organizations. The 10 hours of electives within this course of study allows the student flexibility in preparing for a specific phase of recreation.

<table>
<thead>
<tr>
<th>Group</th>
<th>Program Skills</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP I</td>
<td>Aquatic Area (Not more than 4 courses)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PEGN 250 Senior Life Saving</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PEGN 350 Water Safety Instructor</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PEGN 207 Canoeing</td>
<td>2</td>
</tr>
<tr>
<td>GROUP II</td>
<td>Arts Area (Not more than 4 courses)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PEGN 141 Sailing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>PEGN 251 Ski/Scuba Diving</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PEGN 255 Synchronized Swimming</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>PEGN 253 Speed Swimming</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>PEGN 254 Springboard Diving</td>
<td>1</td>
</tr>
</tbody>
</table>

| Group | Elective Courses (Not from more than two groups) | 10 |

<table>
<thead>
<tr>
<th>Group</th>
<th>Community Organization Skills—Not more than four courses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP III</td>
<td>PEPR 368 Organization &amp; Administration of Intramurals</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CAS 130 Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MGMT 250 Small Business Management</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>BIS 268 Records Management</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>BIS 556 Office Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BIS 242 Business Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BIS 102 Intro to Information Processing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ACTY 210 Accounting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GEO 312 Geology of National Parks and Monuments</td>
<td>2-3</td>
</tr>
<tr>
<td></td>
<td>GEO 544 Environmental Geology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 319 Environmental Economics</td>
<td>3</td>
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<td>CRT 363 Landscape Design</td>
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<thead>
<tr>
<th>Group</th>
<th>General Electives—Not more than four courses</th>
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<tbody>
<tr>
<td>GROUP IV</td>
<td>PEGR 516 Issues in Health Education</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>SWRK 572 Community Agency Resources</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>SWRK 562 Community Organization in Urban Areas</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SOC 210 Modern Social Problems</td>
<td>3</td>
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<tr>
<td></td>
<td>SWRK 464 Problem Solving in Gerontology</td>
<td>3</td>
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<tr>
<td></td>
<td>PEGR 572 Recreation for the Aged</td>
<td>2</td>
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<tr>
<td></td>
<td>SOC 352 Introduction to Gerontology</td>
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<tr>
<th>Group</th>
<th>Required Professional Courses</th>
<th>14</th>
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<tbody>
<tr>
<td>GROUP I</td>
<td>PEPR 170 Introduction to Recreation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PEPR 270 Recreational Leadership</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PEPR 372 Recreational Programming (Prereq. 270)</td>
<td>3</td>
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<tr>
<td></td>
<td>PEPR 370 Recreation Practicum (Prereq. 170, 270, 372)</td>
<td>3</td>
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<tr>
<td></td>
<td>PEPR 375 Organization and Administration of Recreation (Prereq. 170, 270, 372, 370)</td>
<td>3</td>
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<thead>
<tr>
<th>Group</th>
<th>Required Courses:</th>
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<tbody>
<tr>
<td>GROUP I</td>
<td>PEPR 174 Rec. Leadership of Arts &amp; Crafts</td>
<td>2</td>
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<tr>
<td></td>
<td>ITE 190 Industrial Arts for Elem. Teachers</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ITE 198 OT Woodworking</td>
<td>3</td>
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<td></td>
<td>ART 239 Metal Smithing</td>
<td>3</td>
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<tr>
<td></td>
<td>ART 238 Jewelry</td>
<td>3</td>
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<tr>
<td></td>
<td>ART 101 (104) Drawing</td>
<td>3</td>
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<tr>
<td></td>
<td>ART 240 Painting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITE 170 Ind. Crafts Techniques</td>
<td>3</td>
</tr>
<tr>
<td>GROUP II</td>
<td>Public Speaking</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PEGN 103 Bait and Fly Casting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PEGN 130 Archery</td>
<td>1</td>
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<tr>
<td></td>
<td>PEGN 130 Badminton</td>
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<tr>
<td></td>
<td>PEGN 130 Tennis</td>
<td>1</td>
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<td></td>
<td>PEGN 130 St. Tumb Tramp</td>
<td>1</td>
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<td>PEGN 130 Gymnastics</td>
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<td>PEGN 130 Tr. &amp; Field</td>
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<td></td>
<td>PEGN 130 Paddleball or Racketball</td>
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<td></td>
<td>PEGN 130 Life Saving</td>
<td>1</td>
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<td></td>
<td>PEGN 350 WSI</td>
<td>1</td>
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</tbody>
</table>

Special Academic Courses

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.

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 classroom community activities. This course is not for physical education majors or minors.

Professional Activity Courses (PEPR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>PEPR 101 Intro. Games and Sports</td>
<td>1 hr. Fall, Winter</td>
</tr>
<tr>
<td>PEPR 102 Stunts, Tumbling, Trampolining</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>PEPR 103 Gymnastics</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>PEPR 104 Intro. Games and Sports</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>PEPR 105 Field Hockey</td>
<td>1 hr. Fall odd years</td>
</tr>
<tr>
<td>PEPR 106 Basketball</td>
<td>1 hr. Fall, Winter</td>
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<tr>
<td>PEPR 107 Softball</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>PEPR 108 Baseball</td>
<td>1 hr. Fall</td>
</tr>
<tr>
<td>PEPR 109 Volleyball</td>
<td>1 hr. Winter</td>
</tr>
<tr>
<td>PEPR 110 Physical Fitness</td>
<td>1 hr. Fall, Winter</td>
</tr>
</tbody>
</table>
Health Education

Academic Courses

(Courses described in italics are approved for General Education. Course descriptions preceded by a ♦ are open to all students.)

100 Health for Better Living 4 hrs. Fall, Winter

This introductory health course is designed 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. This is the first course in the Health Education Curriculum. 211 Community Health—Public 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. Introduces the student to the scope of public health programs. Prerequisite: 100.

314 Elementary School Health and Safety Education 3 hrs. Winter

This course is directed toward prospective elementary school teachers. It is designed to provide knowledge and experiences related to the total school health program. Prerequisite: 100.

315 Secondary School Health and Safety Education 3 hrs. Fall

This course is directed toward prospective secondary school teachers. Through the media of knowledge and experiences, the total school health program is brought into focus as an integral part of the secondary school program. Prerequisite: 100.

400 Field Experience in Health 2 hrs. Fall, Winter. Spring. Summer

A practical field experience is provided to help students understand the role of the Health Educator. Enrollment by permission of instructor. Prerequisite: PEPR 211, 314 or 315.

411 Health Education: Public Health II 3 hrs. Winter (odd)

This course will analyze the relationships of public health programs, preventive medicine, and health education; techniques of group motivation and dynamics; the role of the health educator in group procedures and community organization; indigenous health problems; their pathology, treatment, and control; principles of epidemiology; and public health aspects of chronic and acute disease and special health care programs. Prerequisite: PEPR 211.

510 Modern Health for Teachers and Health Professionals 3 hrs.

This course is designed for teachers and health professionals who have need of current knowledge in health science. The course surveys topics such as mental health, nutrition, substance abuse, physical fitness, chronic diseases, and stress management. Consideration is given to psychological, sociological and cultural factors that influence health improvement. Attention is given to special factors of health and illness of children and adolescents. This course is not open to health education majors and minors who have had 314, or 315. Prerequisite: 510 or equivalent.


This course surveys the history, philosophy, and methods of health education. The philosophical bases and practices of health education are discussed in terms of needs and capabilities of people and factors that influence their development. Emphasis is placed upon the promotion of health and prevention of disease, disability, and premature death. Curriculum development and teaching methods focus on content and strategies considered most effective in teaching disease prevention and health promotion. The course is not open to health education majors or minors who have had 314, or 315. Prerequisite: PEPR 314 or consent of adviser.

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.

Drugs and Narcotics

Bio Feedback

Venereal Disease

Stress Release

Cardiovascular Health

Parenting

Patient Education

Health Careers

Consumer Health

Physical Education

Academic Courses (PEPR)

(Course descriptions preceded by ♦ are open to all students.)

150 Foundation of Health, Physical Education and Recreation 2 hrs. Fall, Winter

An introduction to the University, the profession, and an attempt to assist the student in making a realistic appraisal of his/her own aptitudes and capabilities relevant to the profession via actual testing of personal competencies. Taken in conjunction with PEPR 110.

180 First Aid—Multi Media 1 hr. Spring

♦The course teaches the elements of first aid so that the student can perform the necessary skills required in the event of required emergency care. The multi-media instruction system is used. This course gives the Red Cross multi-media certification. Open to all students.

181 First Aid 2 hrs. Fall, Winter, Spring

♦The standard course in first aid techniques leading to Red Cross certification. Open to all students.

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.

236 Officiating Series (♦) 1 hr. Fall, Winter, Spring

♦The analysis and evaluation of rules and officiating techniques. The student is required to officiate in out-of-class athletic programs. Prerequisites: Must have had the first level activity or permission of instructor. Open to all students. Fall Semester: Basketball Football. Odd years: Field Hockey. Winter Semester: Basketball Volleyball. Softball/Baseball. Spring Semester: Baseball/Softball

250 Cultural Bases of Physical Education 2 hrs. Winter

The application of history, principles, sociology and philosophy of HPER to the current movements and trends in the profession. Prerequisite: PEPR 150.

295 Biomechanical Analysis of Activity 2 hrs. Fall, Winter, Spring

The analysis and measurement of human performance. Includes the examination and application of biomechanical principles to physical education and sport activities. Prerequisite: BMED 210.

300 Seminar Series 1-4 hrs.

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.

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 and learning disabilities. An emphasis will also be placed on activities for children with perceptual handicaps and on activities to augment academic learning. Prerequisite: PEPR 101.

321 Therapeutic Needs and Programs for the Exceptional Child 3 hrs. Fall

The evaluation, interpretation and planning of programs for the orthopedically handicapped, the cerebral palseied, the epileptic, the blind and such conditions as multiple sclerosis, muscular dystrophy, rheumatic fever and cardiac disorders. Prerequisites: BMED 210, PEPR 320, SPED 530.

325 Swimming for the Exceptional Child 3 hrs. Fall Even Years

The study of physical and learning disabilities, values of swimming, and teaching techniques for these disabilities. Includes
154 COLLEGE OF EDUCATION

Experience teaching exceptional children. Prerequisite: PEGN 350 WSI.

335 Team Manager Participation
1 hr. Fall, Win, Winter, Spring

Students will participate as a student assistant, i.e. attend all practices, scheduled events, score, chart, do other pertinent duties the coach directs. This requirement is waived for students who have been members of an intercollegiate team and a substitute elective is made for this requirement. Coaching minors or permission of instructor.

337 Coaching and Advanced Technique
2-3 hrs. Fall, Winter, Spring

Coaching and advanced skills, selection of a team, preparation, officiating and conducting competitive events. Prerequisites: Must have had first level course(s) or proficiency.
Fall: Track/Field, Football, Baseball, Tennis
Even Years: Softball, Speed
Odd Years: Field Hockey
Winter: Basketball, Gymnastics
Spring: Softball, Track and Field

340 Physical Education for the Elementary Classroom Teacher
2 hrs. Fall, Winter, Spring

This course is structured for the future elementary classroom teacher and special education teacher. It provides experience in the participation and teaching of appropriate physical education movement activities in the areas of basic skills, stunts and tumbling, simple games and sports, rhythms, and classroom correlated activities. This course is not for physical education majors or minors.

344 Teaching Physical Education in the Elementary School
3 hrs. Fall, Winter

Concepts and practices that actuate the sequential development of an elementary physical education program are examined. Methods of instruction, program planning and evaluation are explored. Each student must reserve one half day each week for a participation experience in an elementary school. Prerequisites: PEPR 101, 102 or 103, 132, DANC 106 or 290.

345 Teaching Physical Education in the Secondary School
3 hrs. Fall, Winter

A study of the total secondary school program in physical education including curriculum, organization and public relations. Emphasis in the course is on current teaching methods. A minimum of 15 hours of practice with secondary school students is required for which the student should save at least two blocks of time weekly. Prerequisites: PEPR 150, 102 or 103, 1 dance, 2 individual and 2 team sports. Student should enroll in Ed 301 same semester.

368 Administration and Organization of Intramural Sports
2 hrs. Fall, Winter

The problems, policies, finances, eligibility, awards, officiating, publicity, and procedures related to the intramural program.

380 Foundations of Sports Injuries
2 hrs. Fall, Winter

Basic first aid and emergency concepts, sports injury prevention, recognition, initial and follow-up care are studied. Principles/techniques are presented in a lecture and laboratory instructional format. Prerequisite: BMED 210, PEPR 181.

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: BMED 240.

392 Measurement and Evaluation in Physical Education
2-3 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.

400 Field Experience/Internship in HPER
2-8 hrs.

This course will provide in-depth field experience or internships for undergraduate majors or minors or permission of instructor.

401 Field Experience/Internship in HPER
2 hrs. Fall, Winter

A course studying the skills, knowledge and techniques necessary to conduct social recreational programs for all ages. Creative and effective leadership stressed through observations, participation and the leading of activities. Prerequisite: PEPR 170 or permission of instructor.

276 Outdoor Education
2 hrs. Fall, Winter

A course studying the philosophies, methods, and materials of outdoor education emphasizing outdoor education activities for children and youth.

370 Recreation Practicum
3 hrs.

The practical field experiences in recreation for the normal and handicapped. Enrollment by permission of instructor and acceptance of practicum proposal. Prerequisite: PEPR 372.

372 Recreational Programming
3 hrs.

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.

375 Organization and Administration of Recreation
3 hrs. Fall, Winter

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.

400 Field Experience/Internship in HPER
2-8 hrs.

This course will provide in-depth field experience or internships for undergraduate majors or minors in one of the areas of physical education. Students will be assigned to classes or positions according to their selected area of emphasis. Enrollment by permission of curriculum advisers for major or minor. Prerequisite varies with area of emphasis and requires departmental approval.

470 Recreational Facilities and Areas
3 hrs. Winter

The study of the design, use, and maintenance of recreational areas in relation to community needs, program objectives and physical surroundings.

572 Recreation of the Aging
2 hrs. Winter

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.
Open to Upperclass and Graduate Students (PEGN)

500 Studies in Health, Physical Education and Recreation
1-2 hrs.
In depth study of selected topics in HPER. Format can include clinics, workshops, seminars, travel and/or mini-courses, and provide opportunity to acquire skills and teaching techniques. State, national, and international authorities or consultants may be involved. Topics include: Hunter Safety, Lifetime Sports, Outdoor Education, Physical Education, Relaxation.

520 Physical Activities for Exceptional Children
3 hrs.
Physical and recreational activities and games used in corrective, adaptive and general physical education programs for special education children.

521 Therapeutic Trends for Exceptional Children
3 hrs.
A study of past, present and future trends in habilitation and rehabilitation programs for handicapped people.

530 Practicum in Teaching and Coaching
1-2 hrs.
Demonstrations, participation and evaluation on teaching and coaching fundamentals in selected sports. A graduate student may apply a maximum of four credits from 530 courses toward the Master's Degree Program. Sports include: Archery, Badminton, Baseball, Basketball, Football, Golf, Field Hockey, Gymnastics, Ice Hockey, Judo, Karate, Soccer, Swimming, Track & Field, Volleyball, Wrestling, Yoga.

535 Principles and Problems of Coaching
2 hrs.
Various dimensions and forces affecting coaching are identified and explored including educational implications of sport and coaching, characteristics of coaches and athletes, vital relationships, motivation, emotions, behavior, discipline, selecting and evaluation personnel, scientific principles and systems of training, the organization and planning of practices and total programs.

540 Movement Education
2 hrs.
A concept in physical education which deals with the way children learn the basic principles of how their bodies move.

550 The Making of American Sport
2 hrs.
An exploration of the historical-philosophical heritage of sport and physical education in the USA. Major persons, events, ideas, and institutions discussed.

560 Administration of Physical Education
2 hrs.
For administrative officers, as well as for teachers and directors of physical education. Includes a study of representative programs for physical education and discussion of standards for evaluating such programs.

562 Administration of Athletics
2 hrs.
Discusses administrative procedures and problems connected with athletic programs, including scheduling, facilities, personnel problems, school law and liability, eligibility, finance, safety, and the conduct of athletic events.

580 Studies in Athletic Training
1-2 hrs.
Listed with various topics. A lecture/demonstration course concerned with the prevention diagnosis, and treatment of sports type injuries. Prerequisites: BMED 210, 240, PEPR 380.

590 Exercise Physiology
2 hrs.
The mechanics of muscular contraction, nerve impulse conduction, oxygen exchange, and circulatory efficiency are discussed. Basic principles concerning the adaptation of the human body to stress in the form of strenuous physical exercise are applied to the training and conditioning of competitive athletics. Prerequisites: BMED 210, 240.

591 Evaluation in Health, Physical Education, and Recreation
2 hrs.
Acquaints students with the theory, selection, construction, administration, interpretation of appropriate tests in the field. Class activity will include study and discussion of selected tests, application, scoring, interpretation, and construction of tests.

595 Analysis of Movement in Sport
2 hrs.
The study of movement of muscles and the application of kinesiology to physical activity. Prerequisite: BMED 210.

596 Readings in Health, Physical Education, and Recreation
1-2 hrs.
All Semesters
Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Prerequisite: Approval of the Chairperson of the Department of Physical Education.

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 or 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 student (defined as one having served one year’s continuous active duty) will be exempt from the general physical education requirement.

4. A transfer student must enroll in general physical education during the first semester or session of residence at Western and thereafter each semester or session until the 2 hour requirement is completed.

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 limitations. 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 Health Center, Office of the Dean of Students.

6. A varsity letter 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.

8. ROTC Cadets are to enroll in PEGN 175 Military Fitness I and PEGN 175 Military Fitness II 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 Dean of Students.

Courses in General Physical Education (PEGN)
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.

100 Adapted P.E. Med. Rec
1 hr.
*101 Archery
1 hr.
102 Badminton
1 hr.
104 Basketball
1 hr.
105 Bowling
1 hr.
107 Canoeing
1 hr.
108 Backpacking
1 hr.
109 Cycling
1 hr.
*120 Fencing
1 hr.
121 Field Hockey
1 hr.
*122 Golf I
1 hr.
123 Gymnastics—Apparatus
1 hr.
124 Gymnastics—Tumbling
1 hr.
127 Handball
1 hr.
128 Horsemanship
1 hr.
129 Ice Hockey
1 hr.
130 Judo
1 hr.
131 Karate
2 hrs.
132 Paddleball
1 hr.
136 Physical Fitness
1 hr.
137 Racketball
1 hr.
138 Relaxation
1 hr.
139 Ice Hockey
1 hr.
140 Riflery
1 hr.
141 Sailing
1 hr.
142 Skating—Ice
1 hr.
143 Skiing—Country
1 hr.
144 Skiing—Alpine
1 hr.
145 Soccer
1 hr.
146 Softball
1 hr.
147 Swimming—Unable to swim in deep water
1 hr.
148 Tennis I
1 hr.
149 Track and Field
1 hr.
150 Volleyball
1 hr.
151 Wrestling
1 hr.
152 Yoga
1 hr.
153 Special Activities, e.g., Military Fitness, Aerobic Dance, outdoor challenge, jogging
1 hr.

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)

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 will be available to aid the student 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.

205 Bowling
1 hr.
208 Intermediate Backpacking
1 hr.
220 Fencing
1 hr.
222 Golf II
1 hr.
229 Ice Hockey
1 hr.
231 Karate
1 hr.
237 Racketball
1 hr.
241 Sailing
1 hr.
242 Skating—Ice-Figure
1 hr.
249 Swimming—Intermediate
1 hr.
**250 Swimming—Lifesaving
2 hrs.
**253 Swimming—Speed
1 hr.
**254 Swimming—Springboard—Diving
1 hr.
**255 Swimming—Synchronized
1 hr.
260 Tennis II
1 hr.

course Descriptions

474 Directed Teaching in Special Education
4-8 hrs.
See Description under Education and Professional Development, the College of Education.

502 Educational Provisions for the Learning Disabled
3 hrs.
This course is specifically designed for prospective teachers who are interested in identifying and instructing learning disabled children and youth in a regular classroom setting. Emphasis will be placed on (1) identifying the exceptional pupil; (2) developing an educational profile which reveals the learner's strengths and weaknesses; (3) identifying and describing methods and materials utilized in teaching the learning disabled individual. Open to all students except majors in Special Education curriculum. Prerequisites: ED 250, 312, junior standing and consent of Department.

512 In-Service Professional Development
1-4 hrs.
Design 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.

Special Education (SPED)

Joseph J. Eisenbach, Chair
Dona Gordon Icbone
Alonzo Hannaford
Barbara L. Loss Harris
Elizabeth Lawrence-Patterson
Abraham W. Nicolaou
Donald F. Sellin
Isatore Turansky
Robert J. Westley
Morvin A. Wirtz

The Department of Special Education offers undergraduate and graduate programs for the preparation of teachers, administrators, and clinical service personnel in the areas of visually impaired, emotionally disturbed, crippled and homebound, and mentally handicapped. Students in undergraduate programs are awarded an elementary provisional certificate with a major in one of the above fields, which also permits them to teach in their major throughout all grades of the school system.

The curricula in special education represent balanced programs of general, specialized, and professional education and are designed to meet state requirements for approval of teachers in the respective fields. Students officially admitted to, and enrolled in, undergraduate curricula in special education, are expected to consult with departmental advisers early in their college career.

Questions regarding enrolment procedures in special education, course substitutions, or practicum placements, should be referred to the student's adviser.
Students enrolled in this course will be expected to delineate behavioral goals for those evaluated in SPED 533 and translate student’s utilization of these measures in 533 Diagnostic and Prescriptive Techniques evaluating exceptional persons in his curricular and instructional provisions appropriate behavior for these pupils will be enrollment in SPED 533 and consent of Department. Essentials in ascertaining combined with indentifying and evaluating a diagnostic data into meaningful education curricular area. Diagnostic findings will be analyzed. Special emphasis will be placed on the areas of mobility, communication, sensorimotor development, self-help skills, cognition, and adaptive behavior. A major component of this course is practical experience with severely impaired individuals. Prerequisite: Consent of Department. 544 Educating the Severely Impaired 3 hrs. This course develops specific skills in the assessment, prescription, implementation, and evaluation of educational programs for the severely impaired. Course content will focus upon the areas of mobility, communication, sensorimotor development, self-help skills, cognition, and adaptive behavior. A major component of this course is practical experience with severely impaired individuals. Prerequisite: Consent of Department. 540 Educational Provisions for Handicapped Adolescents and Young Adults 3 hrs. An introductory course to the special education of adolescents and young adults. It will provide the student with knowledge and awareness about the components of secondary and post-school special education programs. Focus will be placed on the physical, intellectual, emotional, and social development of adolescents and young adults. Academic, social career, and vocational needs and programs of handicapped adolescents and adults will be discussed. Prerequisite: Consent of Department. 542 Introduction to the Severely Impaired 3 hrs. This course is designed to provide basic knowledge about the severely impaired, including mental, physical, emotional, and sensory impairments. The problem of severe impairment will be examined in light of biomedical, legal, sociological, and educational perspectives. Special emphasis within the perspective of education will include information regarding management, assessment, instruction, and organization. Prerequisite: Consent of Department. 543 Orthopedic Conditions—Therapeutic and Educational Implications 4 hrs. A course intended for teachers of physically handicapped and otherwise health impaired individuals. Course objectives include a knowledge of the medical conditions leading to orthopedic impairments and an understanding of the psycho-social implications of such impairments. Emphasis is also given to the educational and therapeutic needs of physically impaired children and youth. Prerequisites: SPED 530 and Consent of the Department. 544 Educating the Severely Impaired 3 hrs. This course develops specific skills in the assessment, prescription, implementation, and evaluation of educational programs for the severely impaired. Course content will focus upon the areas of mobility, communication, sensorimotor development, self-help skills, cognition, and adaptive behavior. A major component of this course is practical experience with severely impaired individuals. Prerequisite: Consent of Department. 540 Educational Provisions for Handicapped Adolescents and Young Adults 3 hrs. An introductory course to the special education of adolescents and young adults. It will provide the student with knowledge and awareness about the components of secondary and post-school special education programs. Focus will be placed on the physical, intellectual, emotional, and social development of adolescents and young adults. Academic, social career, and vocational needs and programs of handicapped adolescents and adults will be discussed. Prerequisite: Consent of Department.
Within the University, the role of the college is to provide to the University community professional and vocational expertise based on the application of scientific, management, and educational principles in the development of University goals. Also, the college provides a portion of the interdisciplinary environment within which students and faculty are encouraged to develop their capabilities and to interact with others throughout the University by an interpretation of the technical aspects of the relation between technology and society.

The mission of the College of Engineering and Applied Sciences is to create within the University a place where the application of the principles of the physical, natural, and social sciences can be brought together to encourage the use of these principles in a practical manner. In such an atmosphere, people are educated and assistance is provided to business, commerce, technical educators, and society in the application of these same principles to their activities. The needs of students are served by the college by providing many programs that develop an understanding of and a capability to perform jobs in education, business, and industry for which employment opportunities exist. Students are encouraged to develop an understanding of themselves in relation to society.

Undergraduate Programs

The College of Engineering and Applied Sciences offers undergraduate programs in 34 curricula and majors leading to careers in professional and technical management and marketing, engineering, and vocational and practical education.

Careers in Professional and Technical Management and Marketing
- Agricultural Distribution
- Aviation Technology and Operations*
- Automotive Management and Service* 
- Construction Supervision and Management
- Dietetics
- Engineering Graphics*
- Engineering Metallurgy*
- Fashion Merchandising
- Food Distribution
- Food Service Administration
- Individual and Family Relationships
- Industrial Design*
- Industrial Technology
- Interior Design
- Manufacturing
- Manufacturing Administration
- Military Science

Careers in Engineering
- Aircraft Engineering
- Automotive Engineering
- Computer Systems Engineering
- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering
- Paper Engineering

Careers in Vocational and Practical Education
- Distributive Education
- Home Economics Education
- Industrial Education
- Technical Education
- Vocational-Technical Education

*Engineering-related

Graduate Programs

The College of Engineering and Applied Sciences offers graduate programs leading to a masters degree in the areas of professional and technical studies, science and research, and teaching of technical studies.

Specialization in Professional and Technical Studies
- Manufacturing Administration
- Operations Research

Specialization in Science and Research
- Home Economics
- Paper Science

Specialization in Teaching of Technical Studies
- Distributive Education
- Home Economics
- Industrial Education

Academic Counseling

A central college counseling office is maintained for the convenience of College of Engineering and Applied Sciences students. Because prerequisites are strictly enforced and because it is essential to follow the program plans that appear in the curricula descriptions, students are to contact their academic counselor in the first semester of enrollment at Western Michigan University. Failure to meet with the adviser on a regular basis, or to participate in the college academic planning system, may result in difficulty receiving requested class schedules and/or delayed graduation.
Counselors are available to assist in individual program planning, to recommend electives appropriate to the student's educational objectives; to discuss employment opportunities, and to counsel in general academic problems. Transfer credit and all course substitutions must be recommended by the adviser and approved by the department curricula committee.

Related Academic Programs
Engineering Cooperative Education Program
Lawrence A. Williams, Coordinator
Students enrolled in the engineering and related degree curricula may gain experience and knowledge about a professional field of interest by enrolling in a cooperative education program or in a field experience course. Additional information may be obtained from the Coordinator in Room 1005, Trimpe Distributive Education Building.

Students are usually selected in pairs and alternate by semester between campus and industry. While on the job, the student must be enrolled in the course IEGM 300, Co-op Internship. Co-ops are paid an appropriate salary by the company.

Cooperative students work in such areas as manufacturing, assembly, research, design, quality control, and safety. They may perform tests, prepare engineering drawings, collect and record data, design tools and fixtures, and assist in supervision. The student’s cooperative program is closely supervised by a college coordinator.

Other Cooperative Education Programs
Other cooperative education programs are available in consumer resources and technology in the fields of food and petroleum distribution and fashion management, marketing and merchandising.

The arrangement of work assignments may vary by curriculum.

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 by his or her counselor. While engaged in this special by semester between campus and industry. While on the job, the student must be enrolled in the course IEGM 300, Co-op Internship. Co-ops are paid an appropriate salary by the company.

Cooperative students work in such areas as manufacturing, assembly, research, design, quality control, and safety. They may perform tests, prepare engineering drawings, collect and record data, design tools and fixtures, and assist in supervision. The student’s cooperative program is closely supervised by a college coordinator.

Other Cooperative Education Programs
Other cooperative education programs are available in consumer resources and technology in the fields of food and petroleum distribution and fashion management, marketing and merchandising.

The arrangement of work assignments may vary by curriculum.

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 by his or her counselor. 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 Co-op employment. This opportunity for employment is available through 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.

Continuing Education
Degree Programs
Brian Akers, Director
Students living in the Grand Rapids and Muskegon areas may complete the degree requirements in the listed curricula through the Grand Rapids University Center. Local colleges in Grand Rapids and Muskegon and Western Michigan University combine to offer complete four-year degrees in the areas listed below. The courses are offered primarily in the evening and are scheduled to be as convenient as possible for the part-time, working student.

Grand Rapids: Industrial Engineering Mechanical Engineering Manufacturing Administration Manufacturing
Muskegon: Manufacturing

Additional information on these programs can be obtained by calling the University Center in Grand Rapids (616) 458-8274.

Professional and Honorary Societies
Each department has 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 join one of these societies. Students may obtain further information by contacting their academic counselor or department chairperson.

Institute of Technological Studies
John R. Lindbeck, Director
The Institute of Technological Studies has been established to permit the College of Engineering and Applied Sciences to better serve commerce and industry in southwestern Michigan. Services are provided in the areas of industrial engineering and cost reduction, solution to technical and product problems, and in-plant training in such diverse topics as manufacturing administration, engineering economy, and capital budgeting.

Experimental facilities are available.

On-going programs are being conducted by the Center for Depreciation Studies.

Vocational Education
Jack T. Humbert, Coordinator
Western Michigan University 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. See Vocational Education (VE) under the Division of Applied Sciences in the College of Engineering and Applied Sciences for more detailed information.

Scholarships
Scholarships that are available specifically for students in the college are controlled by the individual departments within the College of Engineering and Applied Sciences. A listing may be found in the “Student Financial Aid and Scholarships” section of the catalog.

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 accepted by the department no later than the end of the add period of the semester or session.

Enrollment
Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two class hours unless prior arrangements have been made with the instructor. Students are responsible for processing drop slips with the Registration Office before the end of the drop/add period if fees are to be refunded.

Credit Hour for the College of Engineering and Applied Sciences
An undergraduate credit hour is a unit of academic measurement nominally equivalent to 3 hours of work per week on the part of the student. Thus, for a course in which 3 credits are earned, a student can expect to work 9 hours per week (4 credits, 12 hours per week, etc.) in various combinations of lecture hours (50 minutes), laboratory hours, and home study.

General Programs
General programs in the College of Engineering and Applied Sciences are designed to meet specific student needs not satisfied by any other curricula in the college.

Engineering Division
Temporary (EDT)
A curriculum designed to allow College of Engineering and Applied Sciences students to enroll in courses until they can be admitted to an engineering program within the college.

Written permission of the academic adviser is required to enroll in this curriculum beyond the first year.
Pre-Architecture
Charon L. Sanford, Adviser

The following is a typical pre-architecture program for students who wish to pursue an architecture degree at another college or university.

<table>
<thead>
<tr>
<th>Recommended Requirements</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>4</td>
</tr>
<tr>
<td>Computer Language</td>
<td>2</td>
</tr>
<tr>
<td>Physics</td>
<td>6</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4</td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>Social Science</td>
<td>7-8</td>
</tr>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>Humanities</td>
<td>12</td>
</tr>
<tr>
<td>Drawing</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>8-15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>60-64</td>
</tr>
</tbody>
</table>

General University Studies—Technical-Scientific Studies (AAS)

497 General University Studies (Variable Credit)
Fall, Winter, Spring, Summer
Evaluation of work experience and/or course work relevant to the area of specialty in the Technical-Scientific area studies. Prerequisite: permission of Director of Counseling, D. W. Nantz.

Manufacturing Program

AAS 397 Orientation
1 hr.
Fall, Winter, Spring, Summer
Provides the manufacturing student with the opportunity to define and develop an educational program in order to achieve a vocational goal. Prerequisite: manufacturing curriculum and permission of Director of Counseling, D. W. Nantz.

The program in manufacturing is composed of a requirement regarding the minimal level of proficiency in several areas, a co-requisite of credits in these areas, and a technical elective sequence permitting specialization. The selection of the courses in these co-areas is based upon the student’s prior experience in the particular areas in which the student is specializing. The specialization sequence will consist of a series of specifically related courses and cognate courses.

A Bachelor of Science degree requires an Associate Degree in Applied Sciences (60 semester hours) or the equivalent plus 60 hours at Western Michigan University and 2 hours of physical education.

The curriculum is specifically designed for students who have completed an Associate Degree program (or the equivalent) in Applied Sciences. It is made up of two parts:

PART I: LEVEL OF ACHIEVEMENT
1. Graphics: ability to make and read working drawings.
2. Materials and Processing: knowledge of application of two types of processes and properties of standard materials.

Note: All students will enroll in AAS 397 Orientation for one semester hour to determine the student’s competence in each of the above areas.

PART II: AREA REQUIREMENTS
1. Mechanical Materials Processing
   A. Technical Analysis: elements of calculus, statistics, proficiency in a basic computer language, engineering mechanics for analysis of static force systems and stresses in machinery and structures, principles of electrical circuits, machines and electronics as applied to manufacturing.
   B. Area of Specialization: a selection of courses designed to meet the student’s vocational choice and meet employable standards as determined by the student and the counselor.

2. Electrical—Electronics
   A. Technical Analysis: elements of calculus, statistics, proficiency in a basic computer language, analysis of static force systems and stresses in machinery and structures, principles of circuits, electronics and machines as applied to manufacturing.
   B. Area of Specialization: a selection of courses designed to meet the student’s vocational choice and meet employable standards as determined by the student and the counselor.

3. Supervision—Management
   A. Technical Analysis: analysis and application of mathematics, statistics, and proficiency in a basic computer language.
   B. Area of Specialization: a selection of courses designed to meet the student’s vocational choice and meet employable standards as determined by the student and the counselor.

4. Other Areas—It is possible to develop other areas of specialization similar to the areas in manufacturing.
   A. A 48 semester hour program of study designed to develop a higher degree of proficiency in areas outlined in Parts I and II, and development of an area of specialization selected by the student. The student in conference with the counselor will select courses to meet the degree requirements.
   B. General Education
      Twelve (12) semester hours of courses designed to establish individual awareness of social responsibilities in government, ecology, interpersonal relationships, and history.

College Divisions

The College of Engineering and Applied Sciences emphasizes two general fields of study. They are identified as the Division of Engineering and the Division of Applied Sciences.
Division of Engineering

Robert E. Boughner, Assistant Dean

Mission
The Engineering Division of the College of Engineering and Applied Sciences is dedicated to serving the people and industry in the State of Michigan and the nation. Our mission is to provide balanced undergraduate and graduate educational programs designed to prepare individuals for professional careers in the engineering sciences and technical management fields. Such programs are built on the four components of the educational program are intended to complement one another, although varying degrees of emphasis may be expected between departments or may change with time. A process of constant evaluation is necessary to optimize faculty, curricula design, organizational problems, extracurricular professional challenges. Graduate program offerings are complementary to the undergraduate degrees and build on the technological expertise residing within the division. Research and development opportunities provide for professional growth of the faculty as well as meaningful experiences for students. Research within the division emphasizes the application of new knowledge and the development of new technologies. Individual faculty consulting with industrial and governmental agencies in Southwestern Michigan, grant or contract research and development, and development of innovative teaching methodologies are examples of various research efforts that are encouraged.

Service to the industry, the community, and the profession includes promotion of the current "state-of-the-art" to industries and agencies through contract research and development, continuing education offerings, and individual counseling. Sharing of professional expertise with other divisions of the University and offering service courses for the general student body is essential. The profession is promoted by encouraging faculty and student leadership in professional societies, registration, and certification.

The strength of the division is the faculty: their skills, experience, knowledge, dedication to quality teaching, and sincere concern for the students' welfare. Faculty creativity will be applied to the individual faculty's disciplines, curricula design, organizational problems, and faculty governance. The academic, research, and service components of the educational program are intended to complement one another, although varying degrees of emphasis may be expected between departments or may change with time. A process of constant evaluation is necessary to optimize faculty, facilities, and financial resources, as well as to meet specific needs of a changing student body.

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 mechanical aptitude and reasoning skills, which, third, is coupled with a strong interest in mathematics and the sciences.

A majority of the engineering students are involved in one or more of the twelve professional organizations that have student chapters on campus. Such involvement enhances the "textbook learning" by providing students with opportunities to interact with other students having similar interests, to gain a closer look at the profession they have chosen to enter, and to plan and direct programs and projects.

Graduates
Almost all WMU engineering graduates enter the job market with only a few going on for graduate work immediately after receiving their bachelor's degree. This is in keeping with the division's mission of preparing students for practice within the profession in industry. A survey of graduates, ten years after graduation, indicated WMU engineering alumni held positions of president, vice president, owner, plant manager, chief engineer, senior design engineer, sales manager, and lawyer.

Three separate graduate programs provide an opportunity for graduate study. The Master of Science degree is offered in paper science and engineering, operations research, and manufacturing administration.

Professional Registration
Graduates of engineering programs are encouraged to seek professional registration. In Michigan, registration eligibility requirements are established by the Board of Registration for Professional Engineers. Students interested in professional registration should consult with their department chairman concerning eligibility. Professional registration and licensing requirements in other states may vary. Students or prospective engineers who have any questions concerning registration are encouraged to inquire of their counselor.

Admission to Engineering Division Programs
Applicants must meet the general university requirements as shown in this catalog. Factors considered in the decision for admission to a program offered by the Engineering Division include courses taken, grade point average, test scores, and class standing. These considerations are made to insure that the applicant has the (1) aptitude for the profession, (2) intellectual capacity, and (3) necessary interest and motivation to pursue the degree selected.

In the event of enrollment restrictions, preference will be given to residents of the state of Michigan for entry into all programs offered by the Engineering Division.

Admission of Secondary School Students
Each student's secondary school curriculum should include at least 15 units of acceptable entrance credit. A unit for admission is defined as a course covering a school year of at least 120 sixty minute hours of classroom work. Two or three hours of laboratory, drawing, or shop are counted as the course, but will be required to remove these deficiencies.

The following subjects and units are required for admission:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>To consist of 1:1:2 units of algebra, 1 unit of geometry, and 1/2 unit of trigonometry. An additional 1/2 unit of algebra and 1/2 unit of analytical geometry are strongly recommended.</td>
<td></td>
</tr>
<tr>
<td>Laboratory Science</td>
<td>2</td>
</tr>
<tr>
<td>One unit of physics and 1 unit of chemistry are recommended. Other laboratory sciences may be acceptable.</td>
<td></td>
</tr>
<tr>
<td>Academic Electives</td>
<td>4</td>
</tr>
<tr>
<td>Subjects acceptable include history, economics, and biology. Two units of a foreign language are recommended. Normally, the minimum overall GPA expected for these 12 units is 2.5 on a 4.0 scale or an ACT composite score of 21. Students may be admitted with deficiencies in the above courses, but will be required to remove these deficiencies within the first year at Western. This may be accomplished by satisfactory completion of appropriate university courses or other means. Courses taken to remove deficiencies will not be counted toward satisfaction of requirements for any degree offered by the Engineering Division. Students admitted with deficiencies will be admitted to the Engineering Division Temporary (EDT) program.</td>
<td></td>
</tr>
</tbody>
</table>
| Admissions of Transfer Students
The admission of transfer students from community colleges is recognized as desirable. However, in order that these students have adequate preparation, they are expected to meet the criteria set forth below. Because of the need to balance enrollments with available resources, it may be necessary to invoke a priority system. In such instances, notification and details of such system will be forwarded to the applicant by the Undergraduate Admissions Office. |
| To WMU Engineering or Paper Science Programs
Engineering Transfer Programs. An engineering transfer program to be taken at a community college acceptable to each of the engineering colleges in Michigan has been prepared by the Engineering College-Community College Liaison Committee. A brochure describing this transfer program is available from any community college or from the office of the dean of any of the engineering colleges. |
Other Transfers. Students who did not complete the engineering transfer program and all other students will be admitted to the Engineering Division Temporary (EDT) program on a space available basis. Completion of the following subjects with a 2.2 minimum grade point average and no grade less than a "C" will be considered as the threshold for admission without deficiency to an engineering program.

To WMU Engineering-Related Programs

To WMU Engineering-Related Programs. Admission to engineering-related programs will be made on a space available basis by each department. Completion of the following subjects with a 2.2 minimum grade point average and no grade less than a "C" will be considered as the threshold for admission without deficiency. Students admitted will be placed in the General College Curriculum (GCA) of the College of Engineering and Applied Sciences until the student has met with the counselor to determine the status of the student’s transfer.

Semester Hours

1. Mathematics—6 hours

2. General Chemistry—4 hours

3. Physics—4 hours

4. Computer Science—1 hour

5. General Education—one course each from Area I, Area II, and Area V.

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 during the four year period immediately prior to the date of graduation.

Standard of Academic Honesty

All courses offered by the Engineering Division will be conducted in concert with the high standards of the engineering profession as stated in the Code of Ethics for Engineers. Each student is expected to support these standards by either 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. (A copy of the Code of Ethics for Engineers may be obtained from the academic counselor or the department chairman).

Transfer from Other WMU Programs

To an Engineering Program

Students currently enrolled in the Engineering Division Temporary (EDT) program or other programs at Western Michigan University who wish to transfer into an engineering program must have completed 31 hours applicable to an engineering program at Western with a 2.2 minimum grade point average and no grade less than a "C." Courses must include:

1. MATH 122 and 123

2. General Chemistry

3. PHYS 210, 211

4. Computer Science (course appropriate to engineering curriculum)

5. General Education—one course each from Area I, Area II, and Area V.

Enrollment will not be allowed in more than one 300 level engineering course unless the student has been admitted to an engineering program.

To an Engineering-Related Program

Students currently enrolled in a program at Western Michigan University, including the General College Curriculum (GCA) of the College of Engineering and Applied Sciences, who wish to transfer to an engineering-related program must have completed 31 hours applicable to an engineering-related program at Western. No courses will be accepted with a grade less than a "C".

Courses must include:

1. Mathematics—6 hours

2. General Chemistry—4 hours

3. Physics—4 hours

4. Computer Science—1 hour

5. General Education—one course each from Area I, Area II, and Area V.

Electrical Engineering (EE)

Cassius A. Hesselberth, Chair
Gurbux Aliag
Roger Bennett
Charles A. Davis
Dean Johnson
Joseph Kelemen
John L. Mason
William M. McCabe
S. H. Mousavianzhad
Lambert R. VanderKooi
Charles Ynghans

The Electrical Engineering Department offers courses in areas such as manufacturing, product development, quality control, and maintenance management of major companies.

Cooperative Education

Students may pursue a cooperative plan of education, whereby alternate semesters are spent working for compensation in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, quality control, and maintenance management of major companies.

Academic Counseling

Students should contact the electrical engineering academic counselor as early as possible. The counselor 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 counselors and curriculum committees. The academic counselor is located in Room 2038, Kohrman Hall.

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 Engineering and Applied Sciences section of the catalog.

Enrollment will not be honored in any course when other students are requesting priority of the course. Students not attending courses for whatever reasons 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 ensure the proper conduct of the course. Therefore, 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.
Electrical Engineering
Bachelor of Science in Engineering (Electrical) Degree

The electrical engineering program is designed to meet the needs of those students who plan to seek employment in such areas as electric power, electronics, communication, instrumentation, and control.

Requirements: Candidates for the Bachelor of Science in Engineering 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 EE, IEGM, 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 128 semester credit hours

MATHEMATICS—16 hours
MATH 122 Calculus I 4
MATH 123 Calculus II 4
MATH 272 Vector and Multivariate Calculus 4
MATH 374 Intro. to Linear Algebra and Diff. Equations 4

ENGINEERING SCIENCES—41 hours
EE 210 Circuit Analysis 4
EE 221 Electronics I 4
EE 250 Digital Logic I 3
EE 251 Digital Systems I 4
EE 310 Network Analysis 3
EE 330 Electrical Machinery 4
EE 361 Electromagnetic Fields 4
EE 371 Linear Systems I 3
EE 380 Probabilistic Methods of Signal and System Analysis 3
ME 256 Statics 3
ME 355 Dynamics 3
ME 356 Statics 3
EE 481 Electrical Engineering Design I 3
EE 492 Electrical Engineering Design II 3
EE 493 Design Electives 9
EE Electives include EE 420, EE 430, EE 451, EE 455, or EE 460.

RELATED COURSES—8 hours
IEGM 131 Engineering Drafting 3
IEGM 310 Engineering Economy 3
CS 306 Introductory Programming 3

DEPARTMENT APPROVED ELECTIVES—5 hours

GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours
These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

AREA I Humanities and Fine Arts 6
AREA II Social and Behavioral Sciences 6
AREA IV Non-Western World 4
AREA V IEGM 102 Technical Communication 3

PHYSICAL EDUCATION—2 hours
TOTAL for graduation—128 hours

Computer Systems Engineering
Bachelor of Science in Engineering (Computer Systems) Degree

The computer systems engineering program is primarily for those interested in the design, analysis, and implementation of electronic digital systems.

Requirements: Candidates for the Bachelor of Science in Engineering 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 EE, IEGM, 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 128 semester credit hours

MATH 122 Calculus I 4
MATH 123 Calculus II 4
MATH 272 Vector and Multivariate Calculus 4
MATH 310 Discrete Mathematical Structures 3
MATH 374 Intro. to Linear Algebra and Diff. Equations 4

ENGINEERING DESIGN—21 hours
EE 320 Electronics II 4
EE 470 Feedback Systems 3
EE 481 Electrical Engineering Design I 3
EE 492 Electrical Engineering Design II 3
EE Electives 9

ENGINEERING SCIENCES—39 hours
EE 210 Circuit Analysis 4
EE 221 Electronics I 4
EE 250 Digital Logic I 3
EE 251 Digital Systems I 4
EE 310 Network Analysis 3
EE 357 Computer Architecture 3
EE 371 Linear Systems 3
EE 380 Probabilistic Methods of Signal and System Analysis 3
CS 223 Computer Organization 3
CS 331 Data Structures and Algorithms 3
CS 485 Programming Languages 3
ME Electives 3

ENGINEERING DESIGN—21 hours
EE 350 Digital Electronics 4
EE 355 Digital Logic II 3
EE 451 Digital Systems II 3
EE 455 Digital Signal Processing 3
EE 481 Electrical Engineering Design I 2
EE 482 Electrical Engineering Design II 3
EE 460 Communication Systems OR
EE 470 Feedback Systems OR
EE 495 Topics in Electrical Engineering 3

RELATED COURSES—6 hours
CS 111 Computer Programming I 3
CS 112 Computer Programming II 3

DEPARTMENT APPROVED ELECTIVES—6 hours

GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours
These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

AREA I Humanities and Fine Arts 6
AREA II Social and Behavioral Sciences 6
AREA IV Non-Western World 4
AREA V IEGM 102 Technical Communication 3

PHYSICAL EDUCATION—2 hours
TOTAL for graduation—128 hours

Course Descriptions
(Courses described in italics are approved for General Education.) Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

100 Fundamentals of Circuits and Electronics (2-3)
3 hrs. Fall, Winter, Spring
Basic principles of electricity, electronic devices, and electronics. May not be used as prerequisite for other EE courses except 101. Cannot be used as credit in engineering curricula. Prerequisite: MATH 111 or equivalent and high school physics.

101 Fundamentals of Electronics and Machines (2-3)
3 hrs. Fall, Winter, Summer
Basic principles, characteristics, and applications of semiconductor devices, AC machines, and DC machines. May not be used as prerequisite for other EE courses. Cannot be used as credit in engineering curricula. Prerequisite: EE 100.

210 Circuit Analysis (3-3)
4 hrs. Fall, Winter, Spring
Analysis of linear electric circuits using methods based on Kirchoff's laws and network theorems. Simple RL and RC transients. Sinusoidal steady state analysis. Prerequisites: PHYS 211 or taken concurrently, MATH 123.

211 Machines and Electronic Circuits (3-3)
4 hrs. Fall, Winter, Summer
Introduction to machines and electronics for non-electrical engineering students. Principles of operation, characteristics, ratings, and applications of transformers, alternators, motors, diodes, and transistors. EE and CSE students may not use credit in EE 211 toward graduation. Prerequisite: EE 210.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Terms</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>221</td>
<td>Electronics I</td>
<td>4</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>250</td>
<td>Digital Logic I</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall, Winter, Summer</td>
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<tr>
<td>251</td>
<td>Digital Systems I</td>
<td>4</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>310</td>
<td>Network Analysis</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>320</td>
<td>Electronics II</td>
<td>4</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>330</td>
<td>Electrical Machinery</td>
<td>4</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>350</td>
<td>Digital Electronics</td>
<td>4</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>355</td>
<td>Digital Logic II</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td>357</td>
<td>Computer Architecture</td>
<td>3</td>
<td>Hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td>361</td>
<td>Electromagnetic Fields</td>
<td>4</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>371</td>
<td>Linear Systems</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>380</td>
<td>Probabilistic Methods of Signal and System Analysis</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>430</td>
<td>Electrical Power Systems</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td>451</td>
<td>Digital Systems II</td>
<td>3</td>
<td>Hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td>460</td>
<td>Communication Systems</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td>470</td>
<td>Feedback Systems</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td>481</td>
<td>Electrical Engineering Design I</td>
<td>1</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>482</td>
<td>Electrical Engineering Design II</td>
<td>0</td>
<td>Hrs.</td>
<td>Fall, Winter</td>
</tr>
<tr>
<td>490</td>
<td>Independent Research and Development</td>
<td>1-4</td>
<td>Hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td>495</td>
<td>Topics in Electrical Engineering</td>
<td>1-4</td>
<td>Hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td>498</td>
<td>Readings in Electrical Engineering</td>
<td>1-4</td>
<td>Hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td>499</td>
<td>Studies in Electrical Engineering</td>
<td>1-4</td>
<td>Hrs.</td>
<td>Fall, Winter, Spring, Summer</td>
</tr>
<tr>
<td>501</td>
<td>Introductory Power Systems</td>
<td>3</td>
<td>Hrs.</td>
<td>Fall</td>
</tr>
<tr>
<td>530</td>
<td>Power System Analysis</td>
<td>3</td>
<td>Hrs.</td>
<td>Winter</td>
</tr>
<tr>
<td>561</td>
<td>Electromagnetic Fields</td>
<td>3</td>
<td>Hrs.</td>
<td>Winter—Even Years</td>
</tr>
</tbody>
</table>
Industrial Engineering (IEGM)
Frank K. Wolf, Chair

The Department of Industrial Engineering offers programs designed to prepare individuals for professional careers in engineering, design, and technical management. Bachelor of Science degree curricula are offered in engineering graphics, industrial design, and manufacturing administration as well as a Bachelor of Science in Engineering degree curriculum in industrial engineering. Graduates from these programs are employed in a wide variety of positions in both manufacturing and service industries.

A minor in engineering graphics or industrial engineering may be secured upon approval of the Industrial Engineering Department's counselor and by completing fifteen to twenty semester hours of work. A minor in industrial engineering is available only to students majoring in mathematics with the statistic option. A minor in manufacturing technology is available to College of Business students majoring in industrial marketing.

Cooperative Education

Students may pursue a cooperative plan of education, whereby alternate semesters are spent working for compensation in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, quality control, and management of major companies.

Academic Counseling

Students should contact the industrial engineering academic counselor as early as possible. The counselor 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 counselors and curriculum committees. The academic counselor is located in Room 2038, Kohran Hall.

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 Engineering and Applied Sciences' section of the catalog. Registration will not be honored in any course when other students are requesting that course if the student does not attend the first two class hours 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.

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 accepted by the department no later than the end of the add period of the semester or session.

Industrial Engineering

David W. Aldrich
Kailash M. Bafna
Robert E. Boughner
Richard E. Munsterman
Bob E. White
Frank K. Wolf
Robert M. Wygant

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, health service, and utility industries. This program is also a basis for graduate study. The industrial engineer is particularly responsible for the improvement and development of engineering management, production planning and control, plant organization, technical design related to manufacturing processes, inspection, plant safety, and employee and employer relations.

Requirements

Candidates for the Bachelor of Science in Engineering 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 EE, IEGM, 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 128 semester credit hours.

<table>
<thead>
<tr>
<th>Area</th>
<th>Courses</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Humanities and Fine Arts</td>
<td>6</td>
</tr>
<tr>
<td>II</td>
<td>Social and Behavioral Sciences</td>
<td>6</td>
</tr>
<tr>
<td>III</td>
<td>Natural Sciences and Mathematics (Included in Curriculum)</td>
<td>6</td>
</tr>
<tr>
<td>IV</td>
<td>Non-Western World</td>
<td>4</td>
</tr>
<tr>
<td>V</td>
<td>IEGM 102 Technical Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

INDUSTRIAL ENGINEERING 165

TECHNICAL COURSES—21 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Cr. Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY 201</td>
<td>Accounting Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>CS 106</td>
<td>BASIC for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 131</td>
<td>Engineering Drafting</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 316</td>
<td>Report Preparation</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 402</td>
<td>Supervision of Industrial Operations</td>
<td>3</td>
</tr>
<tr>
<td>IEGM 410</td>
<td>Senior Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ME 121</td>
<td>Industrial Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>IEGM</td>
<td>Approved Elective</td>
<td>4</td>
</tr>
</tbody>
</table>

GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours

These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

<table>
<thead>
<tr>
<th>AREA</th>
<th>Courses</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Humanities and Fine Arts</td>
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</tr>
<tr>
<td>II</td>
<td>Social and Behavioral Sciences</td>
<td>6</td>
</tr>
<tr>
<td>III</td>
<td>Natural Sciences and Mathematics (Included in Curriculum)</td>
<td>6</td>
</tr>
<tr>
<td>IV</td>
<td>Non-Western World</td>
<td>4</td>
</tr>
<tr>
<td>V</td>
<td>IEGM 102 Technical Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

PHYSICAL EDUCATION—2 hours

TOTAL for graduation—128 hours

Manufacturing Administration

Richard E. Munsterman
Leo S. Rayl
Valerie K. Wescott

Bachelor of Science Degree

The manufacturing administration 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 manufacturing administrators 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, health service, and utility industries.

A selection of one of two groups of courses provides the student an opportunity to concentrate on either the supervision of line/manufacturing operations or of staff management functions directly applied to the line.
The manufacturing administration program is designed to accommodate students who have transferred from other institutions or programs. Questions concerning transfer of credits to this program can be answered by the department adviser.

Requirements: Candidates for the Bachelor of Science degree must satisfy the following requirements stated elsewhere in this bulletin:

1. A "C" average or better must be earned in courses presented for graduation with an EE, IEGM, 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 128 semester credit hours.

---

**GROUP A**

Line Supervision/Administration-Manufacturing—9 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr. Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 100 Fundamentals of Circuits and Electronics</td>
<td>.3</td>
</tr>
<tr>
<td>EE 101 Fundamentals of Electronics and Machines</td>
<td>.3</td>
</tr>
<tr>
<td>ME 120 Machining Metals</td>
<td>.3</td>
</tr>
<tr>
<td>ME 221 Industrial Welding</td>
<td>.3</td>
</tr>
<tr>
<td>ME 320 Pressworking of Metals</td>
<td>.3</td>
</tr>
<tr>
<td>ME 380 Metal Casting II</td>
<td>.3</td>
</tr>
</tbody>
</table>

**GROUP B**

Staff Supervision/Administration-Management—9 hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr. Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTY 211 Principles of Accounting</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 505 Advanced Methods Engineering</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 508 Advanced Quality Control</td>
<td>.3</td>
</tr>
<tr>
<td>MKTG 270 Salesmanship</td>
<td>.3</td>
</tr>
<tr>
<td>MKTG 370 Marketing</td>
<td>.3</td>
</tr>
</tbody>
</table>

**ELECTIVES—9 hours**

One hour must be approved for General Education.

**GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours**

These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

| AREA I Humanities and Fine Arts | 6 |
| AREA II Social and Behavioral Sciences | 6 |
| AREA III Natural Sciences and Mathematics (Included in curriculum) | 4 |
| AREA IV Non-Western World | 3 |
| AREA V IEGM 102 Technical Communication | 3 |

**PHYSICAL EDUCATION—2 hours**

TOTAL for graduation—128 hours

(6 hours to be taken during spring session of senior year)

---

**Engineering Graphics**

Darryl F. Janowicz
George K. Stegman
Charles F. Woodward

**Bachelor of Science Degree**

The engineering graphics curriculum is a program in the field of symbolic communication related to the product and tooling activities of industry including the areas of documentation methods, graphic science, and industrial processes and materials.

The program prepares students to assume such leadership roles in designing and drafting activities as section leader, checker, reprographics supervisor, standards administrator, and chief draftsman.

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 EE, IEGM, 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 128 semester credit hours.

---

**MATHEMATICS AND SCIENCE—15 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr. Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 105 Introduction to Computers</td>
<td>.3</td>
</tr>
<tr>
<td>CS 306 Introductory Programming</td>
<td>.2</td>
</tr>
<tr>
<td>MATH 101 Trigonometry</td>
<td>.2</td>
</tr>
<tr>
<td>MATH 200 Analysis and Application</td>
<td>.4</td>
</tr>
<tr>
<td>PHYS 110 General Physics I</td>
<td>.4</td>
</tr>
</tbody>
</table>

**MAJOR COURSES—26 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr. Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEGM 131 Engineering Drafting</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 135 Descriptive Geometry</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 236 Graphical Solutions</td>
<td>.2</td>
</tr>
<tr>
<td>IEGM 330 Machine Drafting</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 331 Production Drafting</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 434 Technical Illustration</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 436 Introduction to Computer Graphics</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 437 Computer Graphics</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 439 Project Design and Development</td>
<td>.3</td>
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</table>

**RELATED COURSES—34 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr. Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 100 Fundamentals of Circuits and Electronics</td>
<td>.3</td>
</tr>
<tr>
<td>EE 101 Fundamentals of Electronics and Machines</td>
<td>.3</td>
</tr>
<tr>
<td>ITE 234 Machine Shop</td>
<td>.3</td>
</tr>
<tr>
<td>ITE 234 Machine Shop</td>
<td>.3</td>
</tr>
<tr>
<td>ME 121 Industrial Manufacturing Processes</td>
<td>.3</td>
</tr>
<tr>
<td>ME 251 Statics and Strength of Materials</td>
<td>.4</td>
</tr>
<tr>
<td>ME 271 Properties of Materials</td>
<td>.3</td>
</tr>
<tr>
<td>ME 280 Metal Casting I</td>
<td>.3</td>
</tr>
<tr>
<td>ME 321 Numerical Control of Production</td>
<td>.3</td>
</tr>
<tr>
<td>ME 584 Casting Design</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 402 Supervision of Industrial Operations</td>
<td>.3</td>
</tr>
<tr>
<td>IEGM 422 Conference Leadership</td>
<td>.3</td>
</tr>
<tr>
<td>ECON 201 Principles of Economics</td>
<td>.3</td>
</tr>
<tr>
<td>ACTY 210 Principles of Accounting</td>
<td>.3</td>
</tr>
<tr>
<td>ACTY 211 Principles of Accounting</td>
<td>.3</td>
</tr>
<tr>
<td>FCL 320 Business Finance</td>
<td>.3</td>
</tr>
<tr>
<td>FCL 330 Business Finance</td>
<td>.3</td>
</tr>
<tr>
<td>FCL 340 Legal Environment</td>
<td>.3</td>
</tr>
<tr>
<td>MGMT 200 Business Statistics</td>
<td>.3</td>
</tr>
<tr>
<td>MGMT 300 Fundamentals of Management</td>
<td>.3</td>
</tr>
<tr>
<td>MGMT 370 Marketing</td>
<td>.3</td>
</tr>
</tbody>
</table>

**ELECTIVES—4 hours**

One hour must be approved for General Education.

**GENERAL EDUCATION DISTRIBUTION PROGRAM—23 hours**

These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

| AREA I Humanities and Fine Arts | 6 |
| AREA II Social and Behavioral Sciences | 3 |
| AREA III Natural Sciences and Mathematics | 4 |
| AREA IV Non-Western World | 3 |
| AREA V IEGM 102 Technical Communication | 3 |

**PHYSICAL EDUCATION—2 hours**

TOTAL for graduation—128 hours

---

The program prepares students to assume such leadership roles in designing and drafting activities as section leader, checker, reprographics supervisor, standards administrator, and chief draftsman.

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 EE, IEGM, 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 128 semester credit hours.
The curriculum in industrial design is a careful blend of technology, business, art, and general studies with courses in mechanical design, drafting, illustration, equipment studies, design philosophy and practices. The resulting Bachelor of Science degree in industrial design will produce designers with the aesthetic and technical potential to set new directions in product development and design, knowing full well the materials, processes, quality, and production standards needed to comply with what government and consumer interest groups and our economy will be requiring in products.

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 EE, IEGM, or ME prefix.
2. No more than two grades of "D" or "DC" may be accepted in courses presented for graduation.
3. Complete the following program of 128 semester credit hours.

### Technical Support and Design

**AREA—46 hours**

- **CS 306** Introductory Programming 3
- **FORTAN** 2
- **IEGM 131** Engineering Drafting 3
- **IEGM 136** Descriptive Geometry 3
- **IEGM 236** Graphical Solutions 2
- **IEGM 305** Work Analysis 3
- **IEGM 330** Machine Drafting 3
- **IEGM 331** Production Drafting 3
- **IEGM 434** Technical Illustration 3
- **IEGM 436** Introduction to Computer Graphics 3
- **IEGM 438** Industrial Design 3
- **IEGM 439** Product Design and Development 3
- **IEGM 542** Human Factors Engineering 3
- **ITE 174** General Plastics 3
- **ME 121** Industrial Manufacturing Processes 3
- **ME 271** Properties of Materials 3
- **MGMT 200** Business Statistics 3

**BUSINESS—15 hours**

- **ACTY 210** Principles of Accounting 3
- **FCL 340** Legal Environment 3
- **MGMT 451** Administrative Behavior 3
- **MKTG 370** Marketing 3
- **MKTG 375** Principles of Retailing 3

### Manufacturing Technology Minor

The manufacturing technology minor is available to 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 and/or PHYS 106. The manufacturing technology minor totals 15 semester credit hours including three required courses and two approved elective courses selected in consultation with a student’s major adviser.

#### REQUIRED COURSES—9 hours

- **IEGM 131** Engineering Drafting 3
- **ME 121** Industrial Manufacturing Processes 3
- **ME 271** Properties of Materials 3

#### APPROVED ELECTIVES—6 hours

Select two (2) courses

- **EE 100** Fundamentals of Circuits and Electronics 3
- **EE 101** Fundamentals of Electronics and Machines 3
- **EE 250** Digital Logic I 3
- **IEGM 326** Production Control 3
- **IEGM 328** Industrial Quality Control 3
- **ITE 130** General Metals 3
- **ITE 234** Machine Shop 3
- **ME 260** Metal Casting I 3
- **MKTG 375** Principles of Retailing 3

### Course Descriptions

Courses described in italics are approved for General Education. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours/lab hours).

#### General Engineering

- **102 Technical Communication (3-0)**
  - 3 hrs. Fall, Winter, Spring
  - Practical writing skills, bibliographical research, data analysis and presentation, format for problems, pages and outlines. Effective reading and listening.

- **105 Industrial Calculations (1-0)**
  - 1 hr. Fall, Winter, Spring
  - Methods of calculation used in industry. Approximations, slide rule, calculator, and computers in relation to industrial calculations. Slide rule instruction. Prerequisite: MATH 110 or H. S. Trigonometry and Logarithms.

- **300 Co-op Internship (Arr.)**
  - 3 hrs. Fall, Winter, Spring, Summer
  - 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 for four semesters for a maximum of twelve semester credit hours.

- **490 Independent Research and Development (Arr.)**
  - 1-4 hrs. Fall, Winter, Spring, Summer
  - 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.

- **495 Special Topics in Industrial Engineering (3-0)**
  - 3 hrs. Fall, Winter, Spring
  - A specialized course dealing, each time it is scheduled, with some particular aspect of industrial engineering not usually included in other course offerings. May be repeated for credit with a different topic. Prerequisite: permission of instructor.

- **498 Readings in Engineering (Arr.)**
  - 1-6 hrs. Fall, Winter, Spring, Summer
  - 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.

- **499 Studies in Engineering (Arr.)**
  - 1-6 hrs. Fall, Winter, Spring, Summer
  - 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.

#### Industrial Engineering

- **205 Work Design (2-3)**
  - 3 hrs. Fall
  - Design of jobs and working environments in business and industry. Topics include techniques for job design, human factors engineering, work measurement, and economic analysis. A semester project requiring the design of a work station is required. OPEN ONLY TO ENGINEERING MAJORS. Prerequisite: MATH 123.

- **307 Computer Controlled Manufacturing Systems (2-3)**
  - 3 hrs. Fall
  - Analysis and design of computer controlled manufacturing systems. Prerequisites: CS 106, EE 210, 211 (EE 211 may be taken concurrently).
168 COLLEGE OF ENGINEERING AND APPLIED SCIENCES

310 Engineering Economy (3-0)
3 hrs. Fall, Winter, Spring
Application of principles of engineering economy for establishment of equipment and system feasibility. Interest, equivalence, taxes, depreciation, uncertainty and risk, incremental and sunk costs, and replacement models. Prerequisite: MATH 123.

316 Report Preparation (2-3)
3 hrs. Winter
Techniques and procedures used as a basis for preparing a report. Planning, conducting, analyzing, and communicating the results of a useful project. Prerequisite: IEGM 102.

318 Statistical Quality Control (3-0)
3 hrs. Winter
Methods of applying statistics and probability theory to control production processes. Application of computer programs to analyze quality control problems. Prerequisites: CS 106, MATH 360.

410 Senior Seminar (1-0)
1 hr. Fall
A seminar for senior industrial engineering students. Topics for discussion will be centered about the role of the industrial engineer and supervisor at place of work and obligation to society. Prerequisite: senior standing.

414 Facilities Planning and Design (3-3)
4 hrs. Fall
Methodology for planning and designing manufacturing and service-related facilities, facilities location, material handling analysis and design, and warehouse design. Includes an intensive semester project to plan and design a manufacturing facility. Prerequisites: IEGM 205, 310, 316, 416 or taken concurrently.

415 Senior Industrial Engineering Design Project (2-3)
3 hrs. Fall
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: IEGM 414.

416 Operations Control in Industry (3-3)
4 hrs. Fall
The function of production and inventory operations. Control of manufacturing production systems and modeling. Prerequisites: CS 106, MATH 360, IEGM 310.

419 Introduction to Operations Research (3-0)
3 hrs. Winter
The development of mathematical concepts and models concerned with industrial engineering problems. Topics include linear programming, queuing theory, game theory, and simulation. Prerequisite: MATH 360.

505 Advanced Methods Engineering (3-0)
3 hrs. Winter
Synthesis of effective work methods using a predetermined basic motion-time system. Methods-Time Measurement, standard data system development, and administration. Prerequisite: IEGM 305.

508 Advanced Quality Control (3-0)
3 hrs. Fall—Odd Years
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: IEGM 318 or 328.

518 Engineering Valuation and Depreciation (3-0)
3 hrs. Winter
A study of the valuation of industrial property with emphasis on methods of estimating depreciation. Topics include concepts of value, the courts and valuation, property and other accounting records, cost index, estimation of service life, and methods of estimating depreciation. Prerequisite: IEGM 310.

542 Human Factors Engineering (2-3)
3 hrs. Winter
A survey of research on the adaptation of equipment, products, and environment to human use. Prerequisite: permission of instructor. (Cross-listed with PSY 542.)

545 Health Care Systems Improvement (3-0)
3 hrs. Fall, Spring
The work simplification philosophy and strategy as applied to health care systems. Techniques for systems and methods improvement. A heuristics systems improvement project is required. NOT OPEN TO STUDENTS WITH CREDIT IN IEGM 305. Prerequisite: upperclass standing.

Manufacturing Administration

100 Introduction to Industry (2-0)
2 hrs. Fall
The anatomy of manufacturing industries, operational responsibilities and relationships in companies of various sizes and using various processes. Includes a foundation in basic analytical methods.

305 Work Analysis (3-0)
3 hrs. Fall, Winter, Spring
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.

320 Engineering Cost Analysis (3-0)
3 hrs. Fall, Winter, Spring
A course in engineering economics and the economic comparison of alternative technical systems. Includes interest, equivalence, depreciation, taxes, and risk. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 260.

322 Safety in Industry (3-0)
3 hrs. Fall, Winter, Spring
Importance of safety in industry. Cost of accidents, fundamentals of accident prevention, elements of effective safety programs, accident investigation, and OSHA. Prerequisite: upperclass standing.

326 Production Control (3-0)
3 hrs. Fall, Summer
Methods of controlling and coordinating production using production planning, scheduling, inventory control, and dispatching. NOT FOR ENGINEERING CREDIT. Prerequisite: MGMT 200 or MATH 260.

328 Industrial Quality Control (3-0)
3 hrs. Fall, Spring
Techniques of controlling quality in manufacturing systems. Topics include organization of quality, methods of measurement, and basic statistical techniques. NOT FOR ENGINEERING CREDIT. Prerequisite: MATH 260 or MGMT 260.

402 Supervision of Industrial Operations (3-0)
3 hrs. Fall, Winter, Spring
Supervisory duties and responsibilities of foremen, engineers, and technicians in industrial operations. Prerequisite: junior standing.

403 Industrial Labor Relations (3-0)
3 hrs. Fall, Summer
Relationships between government agencies, labor organizations, and management. Emphasis on development of collective bargaining procedures. Prerequisite: senior standing.

404 Plant Layout and Material Handling (3-3)
4 hrs. Fall, Winter
Comprehensive design of an industrial production system. Problems involved in and the interrelationship of plant location, product analysis, process design, equipment selection, materials handling, and plant layout. Assignments include projects designed to include the application of previous industrial engineering courses. NOT FOR ENGINEERING CREDIT. Prerequisites: IEGM 305, 326, senior standing.

405 Systems Analysis and Design (2-3)
3 hrs. Fall, Winter
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 and case study oriented course drawing on previous courses in the student’s program. NOT FOR ENGINEERING CREDIT. Prerequisites: IEGM 305, senior standing.

420 Modern Industrial Practices (4-6)
6 hrs. Spring
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: IEGM 326, 328, 402, 403, 405, or consent of department.

422 Conference Leadership (3-0)
3 hrs. Fall, Winter
Basic methods of planning and presenting an industrial conference. Techniques of leadership with opportunity for practical application of these techniques. Prerequisites: CAS 104, upperclass.

500 Labor Management Relations (3-0)
3 hrs. Winter
Interplay among government agencies, labor organizations, and management. Particular emphasis is placed on collective bargaining procedures, issues, and applications through case studies. Prerequisite: IEGM 403 or consent of instructor based on similar course or experience in field.

502 Industrial Supervision (3-0)
3 hrs. Fall
The supervisor’s duties, obligations, and responsibilities in an industrial role. The practical application of behavioral science principles to the industrial environment. NOT OPEN TO STUDENTS WITH CREDIT IN IEGM 402.
Engineering Graphics

130 Technical Drafting (1-3)
2 hrs. Fall, Winter, Summer
Basic principles and concepts of technical representation including lettering, sketching and instrument techniques. Concepts such as orthographic projection, pictorial representation, sectioning and assemblies will be related to industrial manufacturing processes. For students with little or no high school drafting.

131 Engineering Drafting (2-3)
3 hrs. Fall, Winter, Summer
Essentials of drafting-lettering, instrument usage, applied geometry, sketching, orthographic projections, auxiliaries and sections, dimensioning practice, detail and assembly drawing, and standard drafting practices. Pictorial drawing, charts and graphs. Prerequisite: high school drafting recommended.

136 Descriptive Geometry (2-3)
3 hrs. Fall
Space concepts using points, lines, planes, and solids. Measurements of distances and angles, intersections, true sizes and shapes orthographic projections, auxiliaries and graphs. Prerequisite: high school drafting.

140 Drafting for Interior Designers (2-3)
3 hrs. Winter
A course covering the basic elements of graphic communication needed by the interior designer. Course includes lettering, basic drafting skills, multiview drawing, sections, auxiliaries, revolutions, plans and elevations, isometric and oblique drawings, multiview and pictorial sketching, standard conditioned air, plumbing and electrical symbols as they relate to interior design.

236 Graphical Solutions (1-3)
2 hrs. Winter

238 Studio in Industrial Design (0-3)
4 hrs.* Fall, Winter
*(1 hr/year in sequence as shown below)
Must be taken in proper sequence. Industrial Design curriculum students only.
1. Readings in industrial design. Philosophy of industrial design with visits to design studios and visits by practicing designers.
2. Sketching, rendering, and model building skill development.
3. Design methods, information gathering, storing and retrieval, design decision making, and implementation procedures.
4. Package, display, and project presentation.

240 Housing (3-0)
3 hrs. Fall
A course designed to give an overview of basic instrument technique, planning, financial and sociological aspects, zoning ordinances, building codes, and methods and materials used in residential building construction. Not for ITE majors or minors.

242 Interior Design Graphics I (2-3)
3 hrs. Fall
Development of skills and techniques used daily by the interior designer with clients. Emphasis is placed on communicating design strategies through angular and parallel perspectives (mechanical and freehand methods). Stylized lettering, shades and shadows, shadow lining and high-lighting plans, interior elevation drawings, and pen techniques. Prerequisite: IEGM 130 or 140.

243 Interior Design Graphics II (2-3)
3 hrs. Winter
An intensive study of interior perspective representation (through mechanical and freehand methods) of furnishings and architectural elements, shades and shadows, pen, pencil, colored pencil, watercolor techniques, effective use of diazo (blue and brown line) prints, rendering presentation drawings, and cost estimating and scheduling. Prerequisite: IEGM 242.

300 Machine Drafting (2-3)
3 hrs. Fall, Winter, Spring
Fundamental design and representation of machine components. Mechanical components for motion and power transmission are analyzed from function and manufacturing aspects. Documentation techniques include geometric tolerancing, reproduction graphics, and an introduction to the role of computer graphics in the design process. Prerequisites: IEGM 131, 136.

331 Production Drafting (2-3)
3 hrs. Fall
Engineering documentation as it relates to product drafting. Drawings of product components and assemblies and associated lists are analyzed. Microfilming and reproduction of engineering documents, checking, and standards administration. Prerequisite: IEGM 330.

332 Design of Production Tooling I (1-3)
2 hrs. Fall

333 Design of Production Tooling II (1-3)
2 hrs. Fall
Principles of production tooling as related to the design of stamping and extruding dies and injection molds for metal and plastics industries. Cost analysis, production, processing, and material considerations in design. Prerequisites: IEGM 330, ME 121, 220.

434 Technical Illustration (2-3)
3 hrs. Spring—Odd Years
Techniques of illustrating technical reports, service manuals, and sales engineering catalogs through perspective (angular and parallel) and paraline pictorial methods. Also includes reduction and enlargement consideration, layout, color separation, exploded assemblies, photo sketching, airbrush, and pen and pencil rendering techniques. Prerequisite: IEGM 131.

436 Introduction to Computer Graphics (2-3)
3 hrs. Winter
A study of the use of computers in engineering graphics. Use of the digital plotter in preparing engineering documents using existing and student originated subroutines and programs. Investigation of and study in the newly developing areas of computer graphics and their applications. Prerequisite: CS 105, 106, or 306.
Mechanical Engineering (ME)

Robert B. Day Memorial Award
Each spring the department presents an award to an outstanding student involved in the fabrication, foundry, or metallurgy program or in research and who has demonstrated purpose and commitment to one of these three areas. This is in honor and recognition of the late Dr. Day, who during his tenure as Professor of Mechanical Engineering, actively supported the metallurgical programs.

Cooperative Education
Students may pursue a cooperative plan of education, whereby alternate semesters are spent working for compensation in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, quality control, and maintenance management of major companies.

Mechanical Engineering
Bachelor of Science in Engineering (Mechanical) Degree
Requirements Candidates for the Bachelor of Science in Engineering 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 EE, IEGM, 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 128 semester credit hours.

ENGINEERING SCIENCES—42 hours
ME 256 Statics 3
ME 270 Material Science 4
ME 332 Thermodynamics I 3
ME 353 Mechanics of Materials 3
ME 355 Dynamics 3
ME 356 Fluid Mechanics 3
ME 360 Control Systems 3
ME 362 Theory of Engineering Experimentation 3
ME 431 Heat Transfer 3
ME 432 Thermodynamics II 3
EE 210 Circuit Analysis 4
EE 211 Machines and Electronic Circuits 4
IEGM 310 Engineering Economy 3

Mathematics—16 hours
MATH 122 Calculus I 4
MATH 123 Calculus II 4
MATH 272 Vector and Multivariate Calculus 4
MATH 374 Intro to Linear Algebra and Diff. Equations 4

Basic Science—16 hours
CHEM 103 General Chemistry I 4
PHYS 210 Mechanics and Heat 4
PHYS 211 Electricity and Light 4
PHYS 212 Introductory Modern Physics OR
PHYS 342 Electronics OR
CHEM 120 General Chemistry II 4

Mathematics and science—25 hours
MATH 122 Calculus I 4
MATH 123 Calculus II 4
CHEM 103 General Chemistry I 4
CHEM 120 General Chemistry II 4
PHYS 111 General Physics I 4
PHYS 112 General Physics II OR
PHYS 211 Electricity and Light 4
CS 106 BASIC for Engineers 4

General education distribution—19 hours
These course requirements, along with curricular requirements, satisfy General Education Distribution Program requirements provided that at least 200-500 level General Education courses are completed.

Area I Humanities and Fine Arts 6
Area II Social and Behavioral Sciences 6
Area IV Non-Western World 4
Area V Writing Requirement 3

Physics Education—2 hours
Total for graduation—128 hours

Engineering Metallurgy
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. A “C” average or better must be earned in courses presented for graduation with an EE, IEGM, 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 128 semester credit hours.

Mathematics and Science—25 hours
MATH 122 Calculus I 4
MATH 123 Calculus II 4
CHEM 103 General Chemistry I OR
CHEM 120 General Chemistry II 4
PHYS 111 General Physics I 4
PHYS 112 General Physics II OR
PHYS 211 Electricity and Light 4
CS 106 BASIC for Engineers 4

Area 1 Humanities and Fine Arts 6
Area II Social and Behavioral Sciences 6
Area IV Non-Western World 4
Area V Writing Requirement 3

Major Courses—29 hours
ME 270 Material Science 4
ME 372 Chemical Metallurgy 4
ME 373 Physical Metallurgy 4
ME 374 Physical Metallurgy II 4
ME 470 Metal Fabrication 4
RELATED COURSES—32 hours
ME 120 Machining Metals .................3
ME 221 Industrial Welding .................3
ME 251 Statics and Strength of Materials 4
ME 331 Thermo-Fluid Dynamics ..........4
ME 351 Structural Theory and Design ..........3
ME 375 Non-Destructive Testing ..........3
EE 100 Fundamentals of Circuits and Electronics ........3
IEGM 131 Engineering Drafting ..........3
IEGM 322 Safety in Industry .................3
IEGM 402 Supervision of Industrial Operations ........3

ELECTIVES—21 hours

GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours
These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

AREA I Humanities and Fine Arts . . .6
AREA II Social and Behavioral Sciences . . .6
AREA IV Non-Western World ..........4
AREA V Writing Requirement ..........3

PROGRAM—19 hours

IEGM 131 Engineering Drafting ..........3
IEGM 322 Safety in Industry .................3
IEGM 402 Supervision of Industrial Operations ........3

TOTAL for graduation—128 hours

Course Descriptions
(Courses described in italics are approved for General Education.) Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

120 Machining Metals (2-3)
3 hrs. Fall, Winter, Spring
Theory and laboratory experience in the basic techniques used in metal removal. Introduction to layout, measurement, machine use, and tool geometry. Consideration of numerical control and electro-discharge machining.

121 Industrial Manufacturing Processes (3-0)
3 hrs. Fall, Winter, Spring
Introduction to industrial functions through current manufacturing practice. Analysis of product manufacturing procedure from marketing forecast to engineering design to manufacturing process to environmental testing to economic considerations to delivery.

220 Manufacturing Productivity (3-3)
4 hrs. Fall, Winter, Spring
Design, fabrication, and analysis of production tools. Computer applications to cost estimation, manufacturing, and the fundamentals of robotics. Prerequisites: CS 106, IEGM 131, ME 270.

221 Industrial Welding (2-2)
3 hrs. Fall, Winter, Spring
The processes, techniques, and materials used to fabricate metal products by welding. Laboratory experience in application, design, and mechanical properties.

251 Statics and Strength of Materials (4-0)
4 hrs. Fall
Forces on structures, moments, equilibrium. Stresses and deformation in axially-loaded members, torsion members and beams. Elementary design of structural members. NOT FOR ENGINEERING CREDIT.
Prerequisite: MATH 200 or 122 or 101.

256 Statics (3-0)
3 hrs. Fall, Winter, Spring, Summer
Forces and moments acting upon structural bodies under static loads. Concepts of vectors, free-body diagrams, shear and moment diagrams, centroids, moments of inertia and friction. Prerequisites: MATH 123, CS 106.

261 Surveying (1-3)
2 hrs. Spring
Operation of the transit, theodolite, level, steel tape, and ancillary equipment with emphasis on construction surveying.
Prerequisite: MATH 200 or 101.

270 Material Science (3-3)
4 hrs. Fall, Winter, Summer
An introductory course in the science of engineering materials. The relationships between metallurgical structure and the mechanical properties of metals, polymers, and ceramics are developed and used in the selection of materials for various design requirements.
Prerequisites: CHEM 103, MATH 122.

271 Properties of Materials (3-0)
3 hrs. Fall, Winter
Survey of the processing, applications, and theoretical basis of industrial materials. NOT FOR ENGINEERING CREDIT.

280 Metal Casting I (2-3)
3 hrs. Fall, Spring
Introduction to the processes and laboratory experience in industrial casting processes.
Prerequisite: ME 270 or 271 or 371.

320 Pressworking of Metals (2-3)
3 hrs. Winter
Metal design and pressworking used in the design of blanking, shaving, piercing, and form dies. Press construction and safety features.
Prerequisite: ME 120.

321 Numerical Control of Production (2-3)
3 hrs. Fall, Spring
Introduction to numerical control and computer-driven systems applied to drill, mill, and turning applications.
Economic analysis of numerical control.
Prerequisite: ME 120.

331 Thermo-Fluid Dynamics (4-0)
4 hrs. Winter, Summer
Fundamentals of fluid mechanics, thermodynamics, and heat transfer using a unified approach. NOT FOR ENGINEERING CREDIT.
Prerequisites: MATH 251, PHYS 110.

332 Thermodynamics I (3-0)
3 hrs. Fall, Winter, Spring
Fundamental laws of classical thermodynamics including ideal and non-ideal processes. Applications are studied in relationship to the traditional thermodynamic cycle and to alternate energy systems such as solar and wind energy. (Credit may not be earned in both ME 332 and ME 331.)
Prerequisites: MATH 123, PHYS 210.

335 Mechanical Engineering Laboratory (2-3)
3 hrs. Fall, Winter, Spring
Prerequisites: ME 332, 353, 362, and writing requirement.

339 Solar Energy Systems (3-0)
3 hrs. Fall
Fundamental theory of solar energy for non-engineers which includes heat loads, insulation, system sizing, and design. Prepared computer programs are used by the student in solar design analysis. NOT FOR ENGINEERING CREDIT.

351 Structural Theory and Design (2-2)
3 hrs. Winter
Design of beams, trusses, retaining walls, floor systems, columns in steel, reinforced concrete, and timber. NOT FOR ENGINEERING CREDIT.
Prerequisite: ME 251.

353 Mechanics of Materials (3-0)
3 hrs. Fall, Winter, Spring
Compression, tension, shear, torsion, and bending in structural members including stress distribution, deflection, buckling, and fatigue on engineering materials. Design and selection of simple machine members and a knowledge of design codes and standards are applied.
Prerequisite: ME 256.

354 Testing of Materials (1-3)
2 hrs. Fall, Winter, Spring
Principles and methods of destructive and non-destructive testing for determining the mechanical properties of materials, planning of test procedures, and interpretation of test results.
Prerequisites: ME 353, 270.

355 Dynamics (3-0)
3 hrs. Fall, Winter, Spring
Kinematics and kinetics of particles, rigid bodies in translation, rotation, and plane motion. Includes impulse-momentum and work-energy methods. Introduction to vibrations.
Prerequisites: ME 256, PHYS 210.

356 Fluid Mechanics (3-0)
3 hrs. Fall, Winter, Spring
Analysis of fluid systems and problems. Incompressible and compressible fluids, turbulent and laminar flows, subsonic and supersonic flows are covered. Pipe systems, flow orifices, and open channels. (Credit may not be earned in both ME 356 and ME 331.)
Prerequisites: ME 355, MATH 374.

358 Mechanism Analysis (3-0)
3 hrs. Fall, Winter
Analysis of displacement, velocity, and acceleration in mechanisms by analytical and graphical methods. Introduction to mechanism synthesis with computer applications.
Prerequisite: ME 355.

359 Dynamics of Machinery (3-0)
3 hrs. Winter
Analysis of static, dynamic, and combined forces in the design of machines. Balancing of machines including multicylinder engines. Gyroscopic forces. Computer applications.
Prerequisite: ME 358.

360 Control Systems (3-0)
3 hrs. Fall, Winter, Spring
Theory and analysis of linear closed-loop control systems containing electronic, hydraulic, and mechanical components. Difference equations. Laplace transforms, Nyquist and Bode diagrams are covered.
Prerequisites: ME 355, MATH 374, EE 211.

362 Theory of Engineering Experimentation (3-0)
3 hrs. Fall, Winter, Spring
Prerequisites: MATH 123, CS 106.
365 Machine Design (2-2)
3 hrs. Fall, Winter, Spring
The application of engineering principles to the fundamental design of machine mechanisms and basic systems. Prerequisites: ME 220, 270, 353, 356. (ME 358 may be taken concurrently.)

371 Metallurgy and Materials Failure (3-3)
4 hrs. Fall, Winter, Spring
Physical metallurgy, applications, and analysis of service failures of high strength to weight ratio materials used in the aviation industry.

372 Chemical Metallurgy (4-0)
4 hrs. Fall
Introduction to chemical thermodynamics, thermodynamic properties of the liquid and the solid states, extractive metallurgy, solidification of alloys, and electrochemistry. Prerequisites: CHEM 101 or 102, MATH 123.

373 Physical Metallurgy I (4-0)
4 hrs. Fall
Introduction to the electron theory of metals, crystal geometry, and the defect structure of metals and their application to solid state diffusion, deformation and fracture, and oxidation and corrosion of metals. Prerequisite: CHEM 101 or 102, MATH 123, PHYSY 110.

374 Physical Metallurgy II (2-2)
3 hrs. Winter
Introduction to x-ray diffraction of metals, phase diagrams and solid state phase changes and phase equilibrium. Prerequisite: ME 373.

375 Non-Destructive Testing (2-3)
3 hrs. Fall
Internal and surface industrial non-destructive testing methods and strain gage technology. NOT FOR ENGINEERING CREDIT. Prerequisites: ME 251, 271.

380 Metal Casting II (2-3)
3 hrs. Winter
Theory and application of the metallurgy of casting alloys, gray iron, ductile and malleable iron, steel, brass, bronze and aluminum alloys. Melting, casting, and heat treating processes will be analyzed for each alloy. Basic theory of the solidification of metals. Prerequisite: ME 280.

389 Studies in Cast Metals Technology (4-0)
1-3 hrs. Spring
Metallurgy of ferrous casting and melting. Solidification, risering, gating, ferrous castings, sand control, and sand cases. Prerequisite: consent of department.

420 Computer-Aided Manufacturing (2-3)
3 hrs. Winter
A study and application of computer programming for numerically-controlled machine tools. Prerequisite: ME 321 or consent of department.

431 Heat Transfer (3-0)
3 hrs. Fall, Summer
Steady state and transient conduction, radiation functions, radiation networks, natural and forced convection, design of heat exchangers, and computer applications. Prerequisites: ME 356, 432.

432 Thermodynamics II (3-0)
3 hrs. Winter, Summer
Advanced topics including gas-vapor mixtures, combustion, and compressible flow. Prerequisites: ME 332, 356. (ME 358 may be taken concurrently.)

433 Environmental Systems Design in Buildings (2-2)
3 hrs. Fall, Winter
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, 432.

436 Energy Systems Laboratory (1-3)
2 hrs. Fall, Winter
Experimentation and theory verification in thermodynamics, fluids, and heat transfer including planning, testing, and computer analysis of data with report preparation. Prerequisites: ME 335, 431.

437 Mechanical Systems Laboratory (1-3)
2 hrs. Fall, Winter
Experimentation and theory verification in solid mechanics and system dynamics including planning, testing, and computer analysis of data with report preparation. Prerequisites: ME 335, 365.

440 Computer Applications in Engineering (3-0)
3 hrs. Fall
Application of computer methods in the solution of engineering problems. Methods covered include finite difference, finite element, and polynomial curve fitting. Prerequisite: Engineering student with senior class standing and knowledge of FORTRAN computer programming or consent of department.

451 Design of Solar Systems (3-0)
3 hrs. Winter
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 330, CS 106.

453 Product Engineering (2-2)
3 hrs. Fall, Winter, Spring
The application of mechanical engineering concepts to the design process. Evaluation of performance including computer simulation as it relates to product development. Prerequisites: ME 362, 365.

454 Air Pollution Control Systems (3-0)
3 hrs. Winter—Odd Years
The nature of air pollution and the methods of monitoring and controlling emissions, sampling and analysis techniques and devices are studied. Prerequisite: PAPR 251 or equivalent.

460 Mechanical Engineering Project (1-6)
3 hrs. Fall, Winter, Spring
To provide an engineering experience emphasizing an open-ended project design concept primarily based on either energy or system structure and motion. Prerequisites: ME 453, 436, 437 (concurrent enrollment in either 436 or 437 will be allowed), admission to the Mechanical Engineering program.

470 Metal Fabrication (3-0)
3 hrs. Winter
Fundamentals of elasticity and plasticity theory and the mechanical forming methods and industrial processes of metal fabrication: rolling, forging, extrusion, and drawing. Prerequisites: ME 251, 271, MATH 123.

485 Die Casting (2-3)
3 hrs. Spring—Even Years
Production of die casting including design, melting, casting, and finishing processes emphasizing production of quality castings economically. Prerequisite: ME 280.

490 Independent Research and Development
1-4 hrs. Fall, Winter, Spring, Summer
Individual research or special project. Available only by special arrangement with an instructor and approved by the department chair. Prerequisite: consent of department.

495 Topics in Mechanical Engineering: Variable Topics
1-4 hrs. Fall, Winter, Spring, Summer
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.

498 Independent Readings
1-6 hrs. Fall, Winter, Spring, Summer
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.

499 Independent Studies
1-6 hrs. Fall, Winter, Spring, Summer
An independent studies assignment available only by special arrangement with an instructor and approved by the department chair. Prerequisite: Consent of department.

521 Welding Design Analysis (3-0)
3 hrs. Winter—Odd Years
Production methods and design using modern techniques of electron beam welding, inertia welding, and application of lasers for welding. Use of various protective enclosures, plasma arc welding, automated electronic welding, and welding techniques. Prerequisites: ME 221, 270, 353.

531 Energy Management (3-0)
3 hrs. Winter
Theory and application of industrial energy audits. Energy conservation and waste heat recovery. Prerequisite: ME 332 or consent of department.

533 Industrial Ventilation (3-0)
3 hrs. Fall
Design and testing of systems to control air quality in laboratories and industrial environments. Prerequisite: ME 356 or consent of department.

553 Advanced Product Engineering (3-0)
3 hrs. Winter
An engineering design project from concept to adoption. Static and dynamic analysis. Mechanical systems design and layout. Prerequisites: ME 360, 453.

558 Mechanical Vibrations (3-0)
3 hrs. Winter
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 355, MATH 374.

560 Engineering Analysis (3-0)
3 hrs. Fall
Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisite: ME 360 or equivalent.
Paper Science and Engineering (PAPR)

Richard B. Valley, Chair
John M. Fisher
Raymond L. Janes
James E. Kline
Reid Miner
David K. Peterson

The Department of Paper Science and Engineering offers two B.S. programs and a 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, and related fields. The breadth and depth of the programs are such that a significant number of graduates have progressed into management positions and into graduate school in the sciences.

Academic Counseling

Students should contact the paper science and engineering academic counselor as early as possible. The counselor is available to assist in individual program planning, recommend electives appropriate to a student’s educational objectives, discuss employment opportunities, and to help solve academic problems. Substitutions and transfer credit must be approved by the departmental counselor. The academic counselor, Dr. Raymond L. Janes, is located in Room 2690, Paper Science and Engineering, McCracken Hall.

Work Experience

Industrial experience in the two programs is provided through employment by paper or related companies for at least one of the three summers, as well as through operation of outstanding pilot plant papermaking and coating machines of the department. An extensive recycled fiber pilot plant is also available. The pilot plant and laboratory facilities are among the best in the world.

Additional Information

General information regarding counseling, 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.

A minor in paper science may be earned by completing the following 19 semester hours of departmental courses: 100, 101, 203, 204, 205, 240, 340, 342. Prerequisites for the above courses must be completely satisfied except minors only may substitute PHYS 106 for 210 and CHEM 365 for 360 and 361.

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 PAPR 203, 204, 251 and 360.
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 136 semester credit hours.

GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours

These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

AREA I General Education Distribution Program

AREA I Humanities and Fine Arts

Area II Social and Behavioral Sciences (Including Econ 201)

AREA III Natural Sciences and Mathematics (8 hours included in curriculum)

AREA IV Non-Western World

AREA V Writing Requirement (IEGM 102 recommended)
### Engineering Design—16 hours

<table>
<thead>
<tr>
<th>CourseCode</th>
<th>Course Title</th>
<th>Cr.</th>
<th>Hr.</th>
</tr>
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<tbody>
<tr>
<td>PAPR 307</td>
<td>Process Engineering II</td>
<td>4</td>
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<tr>
<td>PAPR 460</td>
<td>Pulp and Paper Process Design</td>
<td>4</td>
<td></td>
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<tr>
<td>PAPR 472</td>
<td>Senior Engineering Problem I</td>
<td>2</td>
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<tr>
<td>PAPR 473</td>
<td>Senior Engineering Problem II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PAPR 481</td>
<td>Instrumentation and Process Control</td>
<td>3</td>
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### ELECTIVE SEQUENCES

Either sequence must be selected during the sophomore year and followed completely for graduation in Paper Engineering.

**Pulp and Paper Processes Sequence—23 hours**

<table>
<thead>
<tr>
<th>CourseCode</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>EE 210</td>
<td>Circuit Analysis</td>
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<tr>
<td>EE 211</td>
<td>Machines and Electronic Circuits</td>
<td>4</td>
<td></td>
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<tr>
<td>ME 355</td>
<td>Dynamics</td>
<td>3</td>
<td></td>
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<tr>
<td>PAPR 340</td>
<td>Converting Processes</td>
<td>3</td>
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<tr>
<td>PAPR 342</td>
<td>Coating Processes</td>
<td>4</td>
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<td>ITE 451</td>
<td>Printing Processes</td>
<td>2</td>
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<tr>
<td>PAPR 482</td>
<td>Application of Control Systems</td>
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**Environmental Processes Sequence—23 hours**

<table>
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<th>Hr.</th>
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<tr>
<td>BIOL 105</td>
<td>Environmental Biology</td>
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<tr>
<td>CHEM 365</td>
<td>Introduction to Organic Chemistry</td>
<td>4</td>
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<tr>
<td>CHEM 535</td>
<td>Introduction to Physical Chemistry</td>
<td>3</td>
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<tr>
<td>PAPR 350</td>
<td>Water Quality and Microbiology</td>
<td>3</td>
<td></td>
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<tr>
<td>PAPR 353</td>
<td>Waste Water Treatment Systems</td>
<td>4</td>
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<tr>
<td>PAPR 450</td>
<td>Solid Waste Treatment</td>
<td>2</td>
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<tr>
<td>ME 454</td>
<td>Air Pollution Control Systems</td>
<td>3</td>
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</tbody>
</table>

**GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours**

These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

**AREA I (8 hours included in curriculum)**

- Humanities and Fine Arts

**AREA II (6 hours)**

- Social and Behavioral Sciences (incl. ECON 201)

**AREA III (3 hours included in curriculum)**

- Natural Sciences and Mathematics

**AREA IV (4 hours included in curriculum)**

- Non-Western World

**AREA V (3 hours included in curriculum)**

- Writing Requirement

### PHYSICAL EDUCATION—2 hours

TOTAL for graduation—136 hours

**Course Descriptions**

(Courses described in italics are approved for General Education.) Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

100 Introduction to Pulp and Paper Manufacturing (2-3)

3 hrs. Fall

A lecture-laboratory consideration of the fundamentals of paper-making 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 102 concurrent.

251 Introduction to Industrial Environmental Engineering (3-0)

3 hrs. Winter

The effects, regulations, and control processes for gas, liquid, and solid by-products of industries and municipalities are discussed. Legal and economic implications will be included in evaluation of applicable emission reduction and control techniques or processes. Prerequisites: MATH 123, CHEM 101 or 102, PHYS 210 or 110.

305 Mechanics and Optics of Fiber Systems (3-3)

4 hrs. Fall

Lecture and laboratory study of the fundamental properties of fibers and fiber systems. Theories and techniques for evaluating paper properties are discussed.
Subjects include mechanical strength testing, stress-strain behavior of fiber systems, basics of color measurement and light scattering, and the use of the Kubelka-Munk Theory. Prerequisites: PAPR 204.

306 Process Engineering I (3-3)
4 hrs. Fall
Fundamentals of chemical engineering dealing with behavior of gases, thermophysical properties of gases, liquids and solids, thermochemistry, 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 102, MATH 123, PHYS 210.

307 Process Engineering II (3-3)
4 hrs. Winter
A continuation of 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.

310 Science/Engineering Experience
1 hr. Fall
Full-time employment in a pulp and/or paper mill or related industry that provides first-hand experience in a job capacity directly related to the student’s major. A written report is required. Departmental consent is required. Open only to department majors of junior or senior standing.

333 Chemistry of Wood and Pulp (3-0)
3 hrs. Fall
Consideration of the chemistry of wood, pulp, and pulping by-products. Included topics are cellulose, lignin, accessory carbohydrates, extractives, and spent liquor utilization. Prerequisite: PAPR 203.

340 Converting Processes (2-3)
3 hrs. Fall
Covers the machinery and processes involved in the converting of paper and board. Also covered will be the application of the principles of materials handling and process flow to the design and operation of the converting plant. Laboratory time will be devoted to converting plant visits and evaluation techniques. Prerequisite: PAPR 204.

342 Coating Processes (3-3)
4 hrs. Winter
A lecture-lab course dealing with the fundamentals of pigmented and functional coating of paper and board. Coating rheology, evaluation of coated paper, and the performance of paper in the graphic arts will also be covered. Prerequisite: PAPR 305.

350 Water Quality and Microbiology (2-3)
3 hrs. Fall
A study of the physical, chemical, and biological characteristics of water. Topics stressed include hydrology, treatment of water, water quality, governmental regulations, evaluation, and the microbiology of water. Prerequisite: CHEM 101 or 102.

351 Water Quality and Microbiology (2-0)
2 hrs. Fall
A discussion of the physical, chemical, and biological characteristics of water. Topics stressed include hydrology, treatment of water, water quality, governmental regulations, evaluation, and the microbiology of water. (This is a non-laboratory course offered for adult education. Credit may not be earned in PAPR 351 by paper science and engineering department majors.)

352 Fiber Resource Conservation and Recycling (2-2)
3 hrs. Winter
Consideration of the recovery of waste paper and other fiber sources for use in the manufacture of paper and paperboard. Topics include waste fiber collection, contaminant removal, in-plant reuse, effect on the processes and the products, and the economics involved.

353 Waste Water Treatment Systems (3-3)
4 hrs. Winter
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 treatments are considered. Prerequisite: PAPR 350.

354 Paper Industry Processes (2-2)
3 hrs. Winter
Offered primarily for students in graphic arts and printing management programs in order to provide a basic understanding of the major aspects of the science and technology of pulping, paper-making, coating, and evaluation of materials, especially as they relate to printing.

371 Introduction to Independent Research (1-0)
1 hr. Fall, Winter
Methods of approaching and planning independent research will be discussed. Familiarity with problems which may be encountered will be gained by attendance at the senior seminars. At the end of the course, the student will have selected a senior thesis or problem topic and an adviser. Prerequisite: Junior standing.

430 Polymer and Surface Chemistry (3-0)
3 hrs. Winter
Molecular, bulk, and solution properties of high molecular weight compounds and their characterization. Structure and properties of colloids and other surfaces are related to absorption, wetting, detergency, and adhesion behavior. Prerequisite: CHEM 361 or 365.

440 Current Topics in Paper and Pulp (1-5-0)
1 hr. Fall, Winter
A seminar course will be handled on a seminar basis using guest speakers, University staff, and students. Its purpose is to add depth and breadth to the background of students.

450 Solid Waste Treatment (1-3)
2 hrs. Fall
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 products for solid and semi-solid wastes. Prerequisite: Junior standing.

460 Pulp and Paper Process Design (3-3)
4 hrs. Winter
The design and operational factors of the unit processes and operations used in the pulp and paper industry and its subsystems stressing operating efficiencies from the engineering viewpoint are considered. Includes material and energy balances, power distribution, evaluation of equipment performance, and environmental concern. Prerequisites: PAPR 203, 204, 307.

470 Senior Thesis I (0-4 Min.)
2 hrs. Fall, Winter, Spring, Summer
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 and write written summaries of literature search and experimental program. Each student will be assigned an adviser for the problem. Student-staff discussion will be held weekly. Attendance at PAPR 440, Current Topics, is required. Prerequisites: PAPR 371, paper science major.

471 Senior Thesis II (0-6 Min.)
3 hrs. Fall, Winter, Spring, Summer
A continuation of PAPR 470, including completion of laboratory or design work and preparation of a final formal report. An oral presentation will be given. Attendance at PAPR 440, Current Topics, is required. Prerequisite: PAPR 470.

472 Senior Engineering Problem I (0-4 Min.)
2 hrs. Fall, Winter, Spring, Summer
This course is intended to increase the ability of an engineering student to analyze and solve a design problem. An individual adviser will be assigned. The student will analyze a problem, design an experimental investigation as needed, and present a complete program in both written and oral form. Weekly attendance at student-staff seminars and attendance at PAPR 440, Current Topics, is required. Prerequisites: PAPR 371, paper engineering major.

473 Senior Engineering Problem II (0-6 Min.)
3 hrs. Fall, Winter, Spring, Summer
A continuation of PAPR 472, including completion of laboratory or design work and preparation of a final report. An oral presentation will be given. Weekly attendance at student-staff seminars and attendance at PAPR 440, Current Topics, is required. Prerequisite: PAPR 472.

481 Instrumentation and Process Control (3-0)
3 hrs. Fall
An introduction to automatic control covering the areas of control methods, theory, loop analysis, and industrial control valves including sensors, transmitters, controllers, and control valves. Prerequisites: CHEM 101 or 102 or 103, MATH 123, PHYS 211.

482 Application of Control Systems (3-0)
3 hrs. Winter
The use of instrument systems and digital computers to control pulping and paper-making processes. Deals with the design of combination control systems, digital computer components, and computer control strategies in the paper industry. Prerequisite: PAPR 481.

499 Independent Studies
1-6 hrs. Fall, Winter, Spring, Summer
Offers paper science and engineering 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.
Transportation Technology (TRAN)

Harley D. Behm, Chair
Patrick A. Benton
John W. Cummings
Thomas L. Deckard
William Dirkin
Sam D. Haddad
Richard B. Hathaway
Richard Heintz
Arthur W. Hoadley
Forrest O. Hutchins
David P. Krueger
Herman W. Linder
Ronald L. Sackett
Pat D. Schiffer
Curtis N. Swanson
James VanDePolder
Leard L. Wylie

The Department of Transportation Technology offers the following curricula:

Aircraft Engineering—B.S. in Engineering (Aircraft) degree
Automotive Engineering—B.S. in Engineering (Automotive) degree
Transportation Systems—B.S. degree
Automotive Management and Service—B.S. degree
Aviation Technology and Operations—B.S. degree

These programs are designed to provide graduates with the background necessary to successfully assume a variety of positions in transportation-related industries. The combination of specialized and general education is intended to allow employment flexibility; although most graduates are placed in the automotive or aviation industries.

Enrollment

Enrollment will not be honored in any course when other students are requesting that course if the student does not attend the first two clock hours, 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.

Satisfactory completion of first year courses is required before enrollment in subsequent courses.

Enrollment in flight courses is subject to a waiting list which is maintained at the aviation building and administered according to departmental policy.

Students will be permitted to enroll in advanced flight courses on the basis of results of the Department’s Pilot Profile Analysis program. Participation in this program is required of all flight students.

Additional Information

General information regarding admissions, counseling, 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.

Some aviation students may qualify for the F.A.A. Airframe and Powerplant License with some additional coursework. A specially approved curriculum must be completed prior to taking the F.A.A. examination. Qualified students will be admitted to the program by departmental counselors. Credit by examination may be allowed with appropriate evidence of preparation, experience, or certification. Credit by examination will not be granted for TRAN 402, Multi-Engine Flight.

Additional Costs

Special lab fees are in effect for flight courses to cover the cost of airplane operation. The fee is subject to change without notice and currently varies from $250 to $1,800, depending on the course.

Students are required to have their own tools for aviation courses required for the Airframe and Powerplant License. A basic set of required tools may be purchased for less than $100.

Class-related charges are assigned for some laboratory courses to help cover cost of materials.

Cooperative Education

Students may pursue a cooperative plan of education, whereby alternate semesters are spent working for compensation in industry, followed by a semester of study on the campus. Cooperative students work in such areas as manufacturing, product development, quality control, and maintenance management of major companies.

Aircraft Engineering

Bachelor of Science in Engineering (Aircraft) Degree

The aircraft engineering curriculum offers preparation for careers in the aviation industry in manufacturing, product development, technical sales, and other areas requiring application of engineering skills and knowledge.

Requirements

Candidates for the Bachelor of Science in Engineering 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 a TRAN 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 136 semester credit hours. Because of prerequisites and limited offering times, students must consult with an academic counselor for proper course sequence.

MATHEMATICS—16 hours

<table>
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<tr>
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<tr>
<td>MATH 122</td>
<td>Calculus I</td>
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<tr>
<td>MATH 123</td>
<td>Calculus II</td>
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<tr>
<td>MATH 272</td>
<td>Vector and Multivariate Calculus</td>
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</tr>
<tr>
<td>MATH 374</td>
<td>Intro to Linear Algebra and Diff. Equations</td>
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BASIC SCIENCE—16 hours

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<tr>
<td>CHEM 103</td>
<td>General Chemistry I</td>
<td>4</td>
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<tr>
<td>PHYS 210</td>
<td>Mechanics and Heat</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 211</td>
<td>Electricity and Light</td>
<td>4</td>
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<td>Approved Science Elective</td>
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ENGINEERING SCIENCES—33 hours

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<th>Course</th>
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<tr>
<td>EE 210</td>
<td>Circuit Analysis</td>
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<tr>
<td>EE 211</td>
<td>Machines and Electronic Circuits</td>
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<td>ME 256</td>
<td>States</td>
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<td>ME 270</td>
<td>Material Science</td>
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<td>ME 332</td>
<td>Thermodynamics I</td>
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<td>ME 353</td>
<td>Mechanics of Materials</td>
<td>3</td>
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<tr>
<td>ME 355</td>
<td>Dynamics</td>
<td>3</td>
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<td>ME 356</td>
<td>Fluid Dynamics</td>
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<td>TRAN 327</td>
<td>Instrumentation and Testing</td>
<td>3</td>
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<td>TRAN 454</td>
<td>Combustion Engine</td>
<td>3</td>
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<td>TRAN 455</td>
<td>Processes</td>
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AIRCRAFT SYSTEMS—26 hours

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<td>Aeronautics</td>
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<tr>
<td>TRAN 117</td>
<td>Aircraft Reciprocating</td>
<td>3</td>
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<tr>
<td>TRAN 118</td>
<td>Aircraft Structures</td>
<td>3</td>
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<tr>
<td>TRAN 213</td>
<td>Airframe Hydraulic, Pneumatic and Auxiliary Sys</td>
<td>4</td>
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<tr>
<td>TRAN 222</td>
<td>Fuels and Lubricants</td>
<td>3</td>
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<tr>
<td>TRAN 223</td>
<td>Fuel Metering Systems</td>
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<tr>
<td>TRAN 324</td>
<td>Electronic Systems</td>
<td>3</td>
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<tr>
<td>TRAN 415</td>
<td>Aircraft Turbine Powerplants</td>
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ENGINEERING DESIGN—20 hours

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<td>Mechanism Analysis</td>
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<td>ME 365</td>
<td>Machine Design</td>
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<tr>
<td>TRAN 409</td>
<td>Engineering Design Concepts</td>
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<tr>
<td>TRAN 410</td>
<td>Aircraft Aerodynamic Design</td>
<td>3</td>
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<tr>
<td>TRAN 413</td>
<td>Aircraft Structural Design</td>
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<td>TRAN 419</td>
<td>Aircraft Engineering Lab</td>
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RELATED COURSES—4 hours

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<td>BASIC for Engineers</td>
<td>1</td>
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<tr>
<td>IEGM 131</td>
<td>Engineering Drafting</td>
<td>3</td>
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</table>

GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours

These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

AREA I Humanities and Fine Arts | 6
AREA II Social and Behavioral Sciences (Including Economics) | 6
AREA IV Non-Western World | 4
AREA V IEGM 102 Technical Communication | 3

PHYSICAL EDUCATION—2 hours

TOTAL for graduation—136 hours

Automotive Engineering

Bachelor of Science in Engineering (Automotive) Degree

The automotive engineering curriculum offers career preparation for design, development, testing, manufacturing, or service engineering positions within automotive-related industries.

Requirements

Candidates for the Bachelor of Science in Engineering 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 a TRAN prefix.
2. No more than two grades of “D” or “DC” in courses presented for graduation may be counted for graduation.
TRANSPORTATION TECHNOLOGY 177

3. Complete the following program of 128 semester credit hours. Because of prerequisites and limited offering times, students must consult with an academic counselor for proper course sequence.

**MATHMATICS—16 hours**
- **MATH 122** Calculus I ........................................ 4
- **MATH 123** Calculus II ....................................... 4
- **MATH 272** Vector and Multivariate Calculus .......... 4
- **MATH 374** Intro. to Linear Algebra and Diff. Equations 4

**BASIC SCIENCE—16 hours**
- **CHEM 103** General Chemistry I .................. 4
- **PHYS 210** Mechanics and Heat .......................... 4
- **PHYS 211** Electricity and Light ......................... 4
- **Approved Science Elective** .......................... 4

**ENGINEERING SCIENCES—33 hours**
- **EE 210** Circuit Analysis .................................. 4
- **EE 211** Machines and Electronic Circuits ......... 4
- **ME 256** Statics ............................................. 3
- **ME 270** Material Science .................................. 4
- **ME 332** Thermodynamics .................................. 3
- **ME 353** Mechanics of Materials ....................... 3
- **ME 355** Dynamics .......................................... 4
- **ME 356** Fluid Dynamics ................................... 3
- **TRAN 327** Instrumentation and Testing ............ 3
- **TRAN 454** Combustion Engine Processes .......... 3

**AUTOMOTIVE SYSTEMS—18 hours**
- **TRAN 121** Automotive Chassis ....................... 3
- **TRAN 124** Automotive Engines ......................... 3
- **TRAN 221** Automatic Transmissions ................. 3
- **TRAN 222** Fuels and Lubricants ......................... 3
- **TRAN 223** Fuel Metering Systems .................... 3
- **TRAN 324** Electronic Systems ......................... 3

**ENGINEERING DESIGN—20 hours**
- **ME 358** Mechanism Analysis .............................. 3
- **ME 365** Machine Design ................................... 3
- **TRAN 409** Engineering Design Concepts ............ 2
- **TRAN 424** Vehicle Dynamics ............................... 3
- **TRAN 429** Automotive Engineering Lab ............. 3
- **TRAN 455** Engine Systems Design .................... 3
- **Approved Design Elective** .......................... 3

**RELATED COURSES—4 hours**
- **CS 106** BASIC for Engineers ......................... 1
- **IEGM 131** Engineering Drafting ....................... 3

**GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours**
These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

**AREA I Humanities and Fine Arts** .......................... 6
- **AREA II** Social and Behavioral Sciences ................................. 6
- **AREA IV Non-Western World** ........................ 4
- **AREA V** IEGM 102 Technical Communication ........ 3

**PHYSICAL EDUCATION—2 hours**

**TOTAL for graduation—128 hours**

---

**Transportation Systems**

**Bachelor of Science Degree**

The transportation systems curriculum provides a broad background related to transportation and allows skill development for specific career areas such as traffic safety, transit planning, and traffic engineering. Blocks of approved technical electives allow concentration in engineering design or operations, systems analysis, or management.

**Requirements**

Candidates for the Bachelor of Science degree must satisfy the following requirements in addition to University requirements stated elsewhere in this bulletin:

1. No more than two grades of “D” or “DC” in courses presented for graduation may be counted for graduation.
2. Complete the following program of 128 semester credit hours. Because of prerequisites and limited offering times, students must consult with an academic counselor for proper course sequence.

**MATHMATICS AND SCIENCE—23 hours**
- **MATH 122** Calculus I .................................. 4
- **MATH 123** Calculus II .................................. 4
- **MATH 230** Elementary Linear Algebra ............ 4
- **MATH 272** Vector and Multivariate Calculus ........ 4
- **MATH 360** Probability and Statistics for Engineers ........ 4
- **CS 106** BASIC for Engineers ............................................ 1
- **CS 306** Introductory Programming: FORTRAN ........... 2

**ANALYSIS AND SYSTEMS—37 hours**
- **IEGM 310** Engineering Economy ....................... 3
- **IEGM 419** Introduction to Operations Research ........ 3
- **TRAN 370** Traffic Engineering ............................... 3
- **TRAN 470** Transportation Systems Design .......... 3
- **TRAN 474** Transportation Engineering ................. 3
- **TRAN 499** Studies in Transportation Technology ........ 2
- **Approved Technical Electives** .......................... 20

**COMMUNICATIONS—15 hours**
- **IEGM 102** Technical Communication .................. 3
- **CAS 104** Business and Professional Speech ........ 3
- **IEGM 131** Engineering Drafting ......................... 3
- **IEGM 316** Report Preparation ........................... 3
- **IEGM 422** Conference Leadership .......................... 3

**POLICY, ECONOMICS, AND PLANNING—30 hours**
- **TRAN 270** Transportation in the United States ....... 3
- **ECON 201** Principles of Economics (Micro) ........ 3
- **ECON 202** Principles of Economics (Macro) .......... 3
- **ECON 219** Environmental Economics ..................... 3
- **ECON 447** Economics of Transportation and Public Utilities .......... 3
- **GEOG 544** Studies in Economic Geography-Transportation .......... 3
- **GEOG 556** Studies in Land Use Planning A. Urban Planning ........... 3
- **PSCI 504** Making of Public Policy in the U.S .......... 3

**ELECTIVES—2 hours**

**GENERAL EDUCATION DISTRIBUTION PROGRAM—19 hours**
These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed.

**AREA I** Humanities and Fine Arts .......................... 6
**AREA III** Natural Sciences and Mathematics .......... 4
**AREA IV** Non-Western World ............................... 4
**AREA V** Optional Electives ................................. 5

**PHYSICAL EDUCATION—2 hours**

**TOTAL for graduation—128 hours**

**Automotive Management and Service**

**Bachelor of Science Degree**

The automotive management and service curriculum prepares students for positions in supervision or management, sales, and service where technical knowledge of automobiles and construction and operation is necessary.

**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 maintained in required courses with a TRAN 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 128 semester credit hours. Because of prerequisites and limited offering times, students must consult with an academic counselor for proper course sequence.

**MATHMATICS AND SCIENCE—17 hours**
- **CS 106** BASIC for Engineers .......................... 1
- **MATH 200** Analysis and Application .................. 4
- **CHEM 103** General Chemistry I ....................... 4
- **PHYS 106** Elementary Physics ............................ 4

**AUTOMOTIVE SYSTEMS—24 hours**
- **TRAN 121** Automotive Chassis .......................... 3
- **TRAN 124** Automotive Engines ........................... 3
- **TRAN 221** Automatic Transmissions .................... 3
- **TRAN 222** Fuels and Lubricants ........................... 3
- **TRAN 224** Automotive Carburetion and Electricity .......... 4
- **TRAN 322** Automotive Service Management ............ 2
- **TRAN 326** Automotive Diagnosis .......................... 3
- **TRAN 421** Automotive Analysis ............................ 3

**RELATED TECHNICAL COURSES—18 hours**
- **EE 100** Fundamentals of Circuits and Electronics .......... 3
- **EE 101** Fundamentals of Electronics and Machines .... 3
- **ITE 120** Technical Graphics ................................. 3
- **IEGM 359** Industrial Quality Control ..................... 3
- **ME 120** Machining Metals .................................. 3
- **ME 121** Manufacturing Processes .......................... 3

**HUMAN RELATIONS AND COMMUNICATIONS—15 hours**
- **IEGM 102** Technical Communication .................... 3
- **CAS 104** Business and Professional Speech .......... 3
- **BIS 242** Business Communication .......................... 3
- **IEGM 402** Supervision of Industrial Operations .......... 3
- **IEGM 422** Conference Leadership .......................... 3
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 professional pilot option prepares general aviation pilots who are competitive in both technical and business backgrounds. The aviation management option emphasizes aircraft systems, reliability and maintainability, licensing requirements, and repair facility management.

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 a TRAN 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 consisting of required core courses and a technical-professional option. Because of prerequisites and limited offering times, students must consult with an academic counselor for proper course sequence.

ECON 306 Elementary Statistics 3
MATH 170 Elementary Statistics 3

AIRCRAFT SYSTEMS—34 hours

TRAN 110 Aviation Systems 3
TRAN 117 Aircraft Reciprocating Powerplant 3
TRAN 118 Aircraft Structures 3
TRAN 205 Aviation Safety 2
TRAN 213 Airframe Hydraulic, Pneumatic, and Auxiliary Sys 4
TRAN 222 Fuels and Lubricants 3
TRAN 230 Powerplant Systems 3
EE 100 Fundamentals of Circuits and Electronics 3
EE 101 Fundamentals of Electronics and Machines 3
TRAN 313 Aircraft Electrical Systems 3
TRAN 415 Aircraft Turbine Powerplants 4

ECONOMICS AND BUSINESS—24 hours

ECON 201 Principles of Economics (Micro) 3
ECON 202 Principles of Economics (Macro) 3
TRAN 270 Transportation in the United States 3
ACTY 201 Accounting Concepts and Applications 3
MGMT 300 Fundamentals of Management 3
FCL 340 Legal Environment 3
TRAN 340 Airport Management OR
TRAN 344 Air Transportation 3
MKTG 370 Marketing 3

COMMUNICATIONS AND SUPERVISION—12 hours

IEM 102 Technical Communication 3
CAS 104 Business and Professional Speech 3
BIS 242 Business Communication 3
IEM 402 Industrial Supervision 3

TECHNICAL-PROFESSIONAL ELECTIVES

A. Technical Management Option—25 hours

ITE 120 Technical Graphics OR
IEM 131 Engineering Drafting 3
FCL 320 Business Finance 3
IEM 326 Production Control 3
IEM 328 Quality Control 3
IEM 422 Conference Leadership 3
IEM 320 Engineering Cost Analysis OR
MGMT 360 Quantitative Methods for Business Decisions OR
ECON 400 Managerial Economics 3
Department Approved Electives 7

B. Professional Pilot Option—29 hours

Enrollment in flight courses is usually subject to a waiting list. A private pilot license is required to enroll in flight courses in this curriculum. Candidates for flight courses should complete applications at the aviation building before registering for these courses.

GEOG 105 Our Physical Environment 4
GEOG 225 Intro. to Meteorology and Climatology 4
TRAN 301 Commercial Flight I 3
TRAN 300 Navigation Systems 3
TRAN 303 Commercial Flight II 3
TRAN 305 Flight Test III 3
TRAN 340 Airport Management 3
TRAN 400 Aerodynamics and Flight Principles 2
TRAN 402 Multi-Engine Flight 1
TRAN 405 Flight Operations Analysis 3

C. Aviation Maintenance Management Option—34 hours

ITE 120 Technical Graphics OR
IEM 131 Engineering Drafting 3
ME 371 Metallurgy and Materials 3
TRAN 220 Aircraft Structural Repair 3
TRAN 231 Powerplants Systems Lab 3
TRAN 311 Powerplant Service and Management 5
TRAN 318 Aircraft Service and Management 5
TRAN 331 Propulsion System Performance 3
TRAN 333 Avionics Systems 3
TRAN 430 Aircraft Maintenance Regulations 2
TRAN 432 Systems Reliability and Maintainability 3

TOTAL for graduation—128 hours

(Option C requires a total of 137 hours for graduation.)

Course Descriptions

Course descriptions in italics are approved for General Education. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-lab hours).

General Interest Courses

100 Private Pilot Ground School (3-0) 3 hrs. Fall, Winter
A beginning course for students engaged in primary flight instruction or interested in such instruction. Topics include flight theory, federal air regulations, aviation weather, navigation, performance factors, and weight and balance. Upon completion, the student may take the Federal Aviation Administration written examination for private pilot.

183 Principles of Auto Maintenance (2-0) 2 hrs. Fall, Winter
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 curricula.

270 Transportation in the United States (3-0) 3 hrs. Fall
A survey of transportation in the U.S. including ground, air, and sea transport systems. Historical origins, current status and problems, and alternatives for the future are discussed.

399 Field Experience 2-4 hrs. Fall, Winter, Spring, Summer
A program of practical experience and independent study to supplement and enrich classroom experiences. Recent reports are required. May be repeated to a maximum of eight semester credit hours. Departmental approval required prior to registration.

495 Topics in Transportation Technology 1-4 hrs. Fall, Winter, Spring, Summer
A specialized course dealing with some particular area of transportation technology not usually included in other course offerings. May be repeated for credit with different topics up to six semester credit hours. Departmental approval required prior to registration.

499 Studies in Transportation Technology 1-4 hrs. Fall, Winter, Spring, Summer
An individual study program arranged in consultation with a student's advisor. Departmental approval of study program required prior to registration. May be repeated up to a maximum of four semester credit hours.
Curriculum Courses

110 Aeroscience (3-0)
3 hrs. Fall
A first course in aviation including a review of aviation history, theory of flight, aerodynamics, performance, weight and balance, helicopter theory, and regulatory structure of the industry. Prerequisite: PHYS 106 or taking concurrently.

116 Aircraft Propellers (1-3)
2 hrs. Winter
Theory, operation, troubleshooting, and servicing of aircraft propeller systems for reciprocating and turbine engines. For students seeking the A and P license. Prerequisite: TRAN 110 or consent of department.

117 Aircraft Reciprocating Powerplants (2-1)
3 hrs. Fall, Winter
Reciprocating aircraft engine principles, design, operation and performance. Laboratory work involving disassembly, inspection, reassembly, and operation. Prerequisite: TRAN 110 or taking concurrently.

118 Aircraft Structures (2-2)
3 hrs. Fall, Winter
Airframe structures and coverings including fabric, sheet metal, honeycomb, plastics, and hardware. Laboratory practice in preventive maintenance and inspection. Prerequisite: TRAN 110 or taking concurrently.

119 Reciprocating Powerplant Overhaul (0-5)
2 hrs. Fall
Comprehensive laboratory study of aircraft reciprocating powerplants involving inspection, repair, and overhaul procedures for students seeking the A and P License. Prerequisites: TRAN 117 and consent of department.

121 Automotive Chassis (2-3)
3 hrs. Fall, Winter
The design, operation, and service of automotive suspension, wheel alignment, steering brakes, clutches, standard transmissions, drivelines, differentials, and air conditioning units. Laboratory work will involve disassembly, inspection, calculation of loads, and operations needed to restore to service.

124 Automotive Engines (2-3)
3 hrs. Fall, Winter
The design, dynamic characteristics, elementary thermodynamics, and basic service techniques for automotive engines. Theory is supplemented with laboratory work involving disassembly, visual and mechanical inspection of parts, platooning charts and graphs, engine characteristics, performing service operations, assembly, and engine operation. Prerequisite: MATH 111 or equivalent.

205 Aviation Safety (2-0)
2 hrs. Winter
Physiological and psychological factors relating to flight safety emphasizing cause and effect of airplane accidents and related problem history, theory of flight, and a systems approach to safety program development and management. Prerequisite: private pilot license or consent of department.

213 Airframe Hydraulic, Pneumatic and Auxiliary Systems (2-4)
4 hrs. Fall, Winter, Spring
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: TRAN 110, CS 106 or taking concurrently.

214 Aircraft Welding (1-6)
3 hrs. Fall, Winter
Welding theory and practice involving steel and aluminum structural parts. Practice in completing repairs in a manner approved by the FAA using oxyacetylene, electric arc, and shielded arc welding processes. Prerequisites: consent of department and seeking A & P License.

220 Aircraft Structural Repair Lab (0-6)
3 hrs. Fall, Winter
Major structural repair methods including procedures for metal, plastics, composites, and welded structures. Prerequisites: TRAN 118 and consent of department, ME 371 or taking concurrently.

221 Automatic Transmissions (2-2)
3 hrs. Fall, Winter
Torque converters, pumps, controls, gear trains, and holding devices used in automatic transmissions. Emphasis will be placed on principles of design, operation, application, and service of major components as well as limitations and requirements relating to lubrication, sealing and bearings. Laboratory work will involve disassembly, inspection, service operations, calculation of torque capacities, and plotting of test results on an operating unit. Prerequisite: PHYS 106.

222 Fuels and Lubricants (2-2)
3 hrs. Fall, Winter
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 degree, and dropping point of grease. Prerequisite: CHEM 103.

223 Fuel Metering Systems (2-2)
3 hrs. Winter
The design and operation of fuel management systems including induction, fuel metering, and exhaust systems. Carburetion, fuel injection, injection carburetion, emissions, manifold design, and volumetric and thermal efficiencies as applied to naturally aspirated and supercharged gasoline and diesel engines, as well as gas turbine engines. Prerequisites: TRAN 124 or TRAN 117, TRAN 222, CS 106, MATH 122.

224 Automotive Carburation and Electricity (3-4)
4 hrs. Fall, Winter
Theory and practice in diagnosing, adjusting and tuning modern automotive engines and electrical accessories. Laboratory practice is provided using oscilloscopes, distributor testers, generator test benches, and other engine and electrical testing equipment. Prerequisite: EE 101.

230 Powerplant Systems (3-0)
3 hrs. Fall, Winter
Basic principles of reciprocating engine fuel metering, induction and ignition systems including the study of fuel injection and supercharger systems. Prerequisites: TRAN 110, 117, and EE 100 or taking concurrently.

231 Powerplant Systems Laboratory (0-6)
3 hrs. Fall, Winter
Fuel metering, induction, ignition, and engine instrumentation systems including inspection, overhaul and installation of carburetors, fuel injection systems, superchargers, and magnetos. Prerequisites: TRAN 230 or taking concurrently, CS 106, and consent of department.

234 Powerplant Evaluation and Testing (2-0)
2 hrs. Fall, Winter
Theory and application of engine operation, performance evaluation and testing. Instrumentation, dynamometers, and other test equipment are used to evaluate engine performance and efficiencies. Prerequisites: TRAN 230, CS 106.

235 Powerplant Troubleshooting Lab (0-6)
2 hrs. Fall, Winter
Lab practices covering engine operation and testing. Diagnosis and troubleshooting with extensive use of engine analyzers, test equipment, and recorders to isolate engine malfunctions. Prerequisites: TRAN 231, 234.

300 Navigation Systems (3-0)
3 hrs. Winter
Advanced navigation systems and equipment including area navigation, pictorial displays, flight directors, and airborne radar application and interpretation. Prerequisites: TRAN 205 or private pilot license; MATH 200, CS 106.

301 Commercial Flight I (0-5.5)
3 hrs. Fall, Winter, Spring, Summer
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 license and second class medical certificate.

303 Commercial Flight II (0-5.5)
3 hrs. Fall, Winter, Spring, Summer
Continuing flight, ground, and simulator instruction in aeronautical skills, knowledge, and experience pursuant to commercial-instrument pilot certification. Particular emphasis upon use of air traffic control facilities and airways in visual as well as instrument environment. Prerequisite: TRAN 301.

305 Commercial Flight III (0-5.5)
3 hrs. Fall, Winter, Spring, Summer
Completion of instruction and experience requirements for commercial and instrument pilot certification. Includes flight, ground, and simulator instruction. Prerequisites: TRAN 303, 300 or taking concurrently.

311 Powerplant Service and Management (2-10)
5 hrs. Spring
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: TRAN 231, MGMT 300, and consent of department.

313 Aircraft Electrical Systems (2-3)
3 hrs. Fall, Winter, Spring
An overview of basic electricity, study and laboratory practice in aircraft electrical components and systems, electrical instrumentation, and auto pilot systems. Prerequisites: TRAN 110, EE 101 or 211.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>409</td>
<td>Aircraft Aerodynamic Design (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>Aerodynamic design of aircraft emphasizing performance, stability, and control characteristics. Prerequisite: TRAN 409 or taking concurrently.</td>
</tr>
<tr>
<td>413</td>
<td>Aircraft Structural Design (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>Structural design of aircraft emphasizing structural integrity under imposed static and dynamic loads. Prerequisites include weight, cost, and mission constraints. Prerequisite: TRAN 409 or taking concurrently.</td>
</tr>
<tr>
<td>415</td>
<td>Aircraft Turbine Powerplants (3-3)</td>
<td>4 hrs.</td>
<td>Fall, Winter</td>
<td>Reaction engine principles, gas turbine engine construction, design and operation. Includes testing and operation of jet aircraft powerplant systems. Prerequisites: MATH 122 or 200, TRAN 231 or 223.</td>
</tr>
<tr>
<td>419</td>
<td>Aircraft Engineering Lab (0-6)</td>
<td>3 hrs.</td>
<td>Winter</td>
<td>Aerodynamic and structural analysis of aircraft. Emphasis on design and application of wind tunnel and flight testing techniques. Prerequisite: TRAN 410, 413.</td>
</tr>
<tr>
<td>421</td>
<td>Automotive Analysis (2-2)</td>
<td>3 hrs.</td>
<td>Winter</td>
<td>Analysis of current designs of major automotive systems concentrating on rationale for various design approaches and combinations used when considering engineering parameters such as standards, operating limitations, manufacturing restrictions, and reparability. Prerequisite: TRAN 326.</td>
</tr>
<tr>
<td>423</td>
<td>Automotive Engineering Problems (1-8)</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>Individual and group design projects will be selected on subjects relating to automotive testing, development, or modification. The student will design, build, test, develop, and evaluate a project. Written reports including project request, progress reports, and final reports are required. Prerequisite: TRAN 327.</td>
</tr>
<tr>
<td>424</td>
<td>Vehicle Dynamics (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>Design of automobile and truck suspensions, steering, brakes, drive lines, and frames. Vehicle handling, structural requirements, and safety systems. Prerequisites: Junior standing in TRAN courses, MATH 358, 365.</td>
</tr>
<tr>
<td>429</td>
<td>Automotive Engineering Lab (0-6)</td>
<td>3 hrs.</td>
<td>Winter</td>
<td>Special topics in automobile design including problems of performance and economy, compatibility of engine and transmission, aerodynamic design applications, and noise and vibration control. Prerequisite: TRAN 409, 424.</td>
</tr>
<tr>
<td>330</td>
<td>Aircraft Service and Management (2-10)</td>
<td>5 hrs.</td>
<td>Summer</td>
<td>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: TRAN 213, 220, 311.</td>
</tr>
<tr>
<td>319</td>
<td>FAA Maintenance Regulations (4-0)</td>
<td>4 hrs.</td>
<td>Winter</td>
<td>This is the final course for students applying for the FAA Aviation Mechanics Certificate with Airframe and Powerplant ratings. Students electing this course must have completed or be currently completing all courses required in the special program.</td>
</tr>
<tr>
<td>320</td>
<td>Automotive Service Management (2-0)</td>
<td>2 hrs.</td>
<td>Winter</td>
<td>Principles involved in management of automotive repair shops including establishing objectives, organizational problems, controls, personnel management, merchandising, pricing, and customer relations. Prerequisite: Junior standing.</td>
</tr>
<tr>
<td>331</td>
<td>Propulsion System Performance (0-6)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
<td>Principles of engine measurements as applied to engine and structure testing. Laboratory assignments include calibration of instruments, obtaining data, dynamometer operation, and engine testing. Data will be analyzed with the aid of the computer. Graphing and analysis techniques will be utilized in formal written reports. Prerequisites: Junior standing in TRAN courses, MATH 356, CS 106, ACTY 201, MGMT 300.</td>
</tr>
<tr>
<td>332</td>
<td>Signals and Traffic Engineering (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>Principles involved in management of traffic control system, traffic characteristics and their measurement, and development of traffic flow behavior and traffic operations. Prerequisites: TRAN 101, MATH 123.</td>
</tr>
<tr>
<td>333</td>
<td>Signals and Traffic Engineering (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>Principles involved in management of traffic control system, traffic characteristics and their measurement, and development of traffic flow behavior and traffic operations. Prerequisites: TRAN 101, MATH 123.</td>
</tr>
<tr>
<td>334</td>
<td>Aircraft Service and Management (2-10)</td>
<td>5 hrs.</td>
<td>Summer</td>
<td>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: TRAN 213, 220, 311.</td>
</tr>
<tr>
<td>337</td>
<td>Instrumentation and Testing (2-2)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
<td>Principles of engineering measurements as applied to engine and structure testing. Laboratory assignments include calibration of instruments, obtaining data, dynamometer operation, and engine testing. Data will be analyzed with the aid of the computer. Graphing and analysis techniques will be utilized in formal written reports. Prerequisites: Junior standing in TRAN courses, MATH 356, CS 106, ACTY 201, MGMT 300.</td>
</tr>
<tr>
<td>339</td>
<td>Propulsion System Performance (0-6)</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
<td>Principles of engine measurements as applied to engine and structure testing. Laboratory assignments include calibration of instruments, obtaining data, dynamometer operation, and engine testing. Data will be analyzed with the aid of the computer. Graphing and analysis techniques will be utilized in formal written reports. Prerequisites: Junior standing in TRAN courses, MATH 356, CS 106, ACTY 201, MGMT 300.</td>
</tr>
<tr>
<td>340</td>
<td>Airframe Inspection, Repair, and Servicing (2-10)</td>
<td>5 hrs.</td>
<td>Winter</td>
<td>Principles involved in management of service centers and related service management problems and solutions. Prerequisites: TRAN 213, 220, 311.</td>
</tr>
<tr>
<td>344</td>
<td>Air Transportation (3-0)</td>
<td>3 hrs.</td>
<td>Winter</td>
<td>Regulation, organization, and operations peculiar to the air transportation industry. Includes a study of major aspects of air transportation and fundamentals of the air traffic control system. Prerequisites: TRAN 101, MATH 123.</td>
</tr>
<tr>
<td>370</td>
<td>Traffic Engineering (3-0)</td>
<td>3 hrs.</td>
<td>Fall</td>
<td>Traffic characteristics and their measurement, engineering analysis of transportation objectives, intersection and interchange designs, traffic control, and intersection control. Prerequisites: TRAN 101, 124, 224.</td>
</tr>
<tr>
<td>400</td>
<td>Aerodynamics and Flight Principles (2-0)</td>
<td>2 hrs.</td>
<td>Winter</td>
<td>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: TRAN 303, MATH 200, CS 106.</td>
</tr>
<tr>
<td>402</td>
<td>Multi-Engine Flight (0-1:3)</td>
<td>1 hr.</td>
<td>Fall, Winter, Spring</td>
<td>Principles of flight in multi-engine airplanes. Provides transition from complex single-engine airplanes to procedures and techniques peculiar to multi-engine operation. Prerequisite: TRAN 305 or equivalent.</td>
</tr>
<tr>
<td>403</td>
<td>Flight Instruction Fundamentals (1-5)</td>
<td>3 hrs.</td>
<td>Fall, Winter, Spring</td>
<td>Flight instruction, solo flight practice, ground instruction, and actual teaching experience after certification. Prerequisites: TRAN 205, 305, 400, ED 301.</td>
</tr>
<tr>
<td>404</td>
<td>Instrument Flight instructing (1-1)</td>
<td>1 hr.</td>
<td>Fall, Winter, Spring</td>
<td>Principles of flight instruction applied to flight operation. Designed to upgrade an airplane flight instructor to an instructor instructor. Instructional techniques of attitude instrument flight, flight simulator utilization, instrument enroute procedures, radio navigation, critical situations, and performance analysis. After certification, supervised teaching experience is required. Prerequisite: TRAN 403 or equivalent.</td>
</tr>
<tr>
<td>405</td>
<td>Flight Operations Analysis (3-0)</td>
<td>3 hrs.</td>
<td>Winter</td>
<td>Advanced topics in airborne electrical and electronics systems including multiplexing, flight control, and navigation applications. Prerequisite: TRAN 313.</td>
</tr>
<tr>
<td>409</td>
<td>Aircraft Design Concepts (2-0)</td>
<td>2 hrs.</td>
<td>Fall</td>
<td>An introduction to the design process including problem definition and project planning with social, ethical, aesthetic, and technical considerations. Preliminary planning will be accomplished for the major senior design project. Prerequisite: TRAN 327.</td>
</tr>
</tbody>
</table>
454 Combustion Engine Processes (3-0) 3 hrs. Fall
Combustion process investigation and cycle analysis. Comparison of actual and ideal combustion using thermodynamic and chemical analysis. Prerequisites: TRAN 117 or 124, TRAN 223, ME 332.

455 Engine Systems Design (2-2) 3 hrs. Winter
Advanced topics in engine design including optimization of power transmission using a systems approach. All types of powerplants are considered with laboratory exercises oriented toward development of an optimized powerplant system. Prerequisites: TRAN 327, 454.

470 Transportation Systems Design (3-0) 3 hrs. Winter
A review of planning considerations including demand forecasting, network analysis, and evaluation of alternatives. Study of transportation network design with examples of current technology. Prerequisites: CS 306, TRAN 270, IEGM 419.

474 Transportation Engineering (3-0) 3 hrs. Fall
The design of streets, highways, railways, pipelines, air transportation facilities, and water transportation facilities. A familiarization with specific procedures and design criteria will be included. Prerequisites: TRAN 370, ME 330, 353.

Division of Applied Sciences
Don W. Nantz, Assistant Dean

Mission
The mission of the Division of Applied Sciences is to provide an integrated educational program for undergraduate and graduate students. This program has been developed to prepare students for professional and vocational careers in applied technical management and marketing, vocational technical education, rehabilitation, and family environment. The college is also responsible for obtaining and training qualified students from the entire University to be commissioned officers in the active and reserve forces of the United States Army. The division encourages research and development, community service, and scholarly work.

The focus of the academic programs varies within the career areas in the division. In the technical management and marketing area, on-the-job and laboratory experiences are combined with the fundamentals of technical management and marketing. In the technical area, the training in skills and methods of teaching, the upgrading of teachers to properly use today's technology, and the education of students to articulate teachers are emphasized. Concurrent with the formal academic program, a counseling and career guidance program assists students in achieving career goals. A graduate vocational technical education program is designed to augment the technical and teaching expertise of practicing educators and industrialists.

Opportunities for interacting with both industry and education are provided by projects and grants from state and federal agencies. Such projects and grants emphasize the application of the expertise of professional educators in the development of materials in relationships between schools and between school and community. Through innovative teaching techniques, workshops, and the development of educational concepts, faculty are able to contribute leadership to the educational, industrial, and family communities. This involvement necessitates a continuing evaluation of the changing needs dictated by a complex society.

Transfer Program
A student may transfer into a Bachelor of Science degree program from a community college or other on-campus programs by making proper application and having a credit evaluation of the work previously taken. A student is then required to complete a normal curriculum as outlined. Of the minimum of 30 credits required of all candidates for a bachelor’s degree (See “General Education Requirement” section of the catalog) in the College of Engineering and Applied Sciences curricula, a transfer student must complete at least 18 hours within the department.

Consumer Resources and Technology (CRT)
Sue S. Coates, Chair
Max E. Benne
Linda L. Darnison
Gail A. Havens
William O. Haynes
John T. Houdek
Jack T. Humbert
Alice Kavanaugh
Rebecca S. Marvin
Richard Nesbich
Maia Petersons
Phyllis Seabolt
Norman E. Slack
Nancy H. Steinhaus
Darrell B. Thomas
Donna R. VanWeesemen
Patricia B. Viard
Lawrence A. Williams

The Department of Consumer Resources and Technology offers education in the value and efficient use of human and material resources, and in the development of the skills and knowledge appropriate to careers that accommodate the needs of the consumers at the various levels of the economic process.

Curricula offered in the department include:
- Agriculture
- Dietetics
- Fashion Merchandising
- Food Distribution
- Food Service Administration
- Individual and Family Relationships
- Interior Design
- Petroleum Distribution
- Textiles and Apparel Technology
- Vocational Education (Distributive Education Certification) (Home Economics Certification)

The Consumer Resources Minor includes the following emphases:
- Family Life Education (Teaching)
- Food Distribution
- General Agriculture (Teaching)
- General Home Economics
- Interior Design
- Occupational Foods (Teaching)

Academic Counseling
Room 2038, Kohrman Hall. An academic counselor 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 counselors. In early September and/or January, students should submit their course planning forms to ensure enrollment in desired courses. This is done in the Engineering and Applied Sciences Counseling Office, Room 2038, Kohrman Hall.
Vocational Education

Students desiring to become qualified as teachers of Vocational Home Economics or in other fields must complete the appropriate study program found under Vocational Education in the Division of Applied Sciences of the College of Engineering and Applied Sciences. These study requirements have been planned under the provisions of the state plan for vocational education, and only persons holding the appropriate Vocational and Secondary Provisional Certificates will be qualified to teach in the reimbursed Consumer/Homemaking Secondary programs or in the Distributive Education Secondary programs in Michigan Public Schools.

Cooperative Education Programs

The cooperative education programs offered in food distribution and petroleum distribution 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. Cooperative education programs use an alternate semester-in-school and semester-on-the-job approach and provide students with valuable field experience.

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 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 two clock hours 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.

Prerequisites are designed to increase the probabilities of successful completion of the course, and will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Agriculture (AGR)

Bachelor of Science Degree

Counselors: Dr. Max Benne, Dr. John Houdek

The agriculture curriculum is a four-year degree program that deals with the production, distribution, and service aspects of the agricultural industry. The student Agriculture Club provides additional opportunities for professional interaction and experiences.

Requirements: Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.

<table>
<thead>
<tr>
<th>MAJOR COURSES—38 hours</th>
<th>Cr. Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT 160 Agriculture Science</td>
<td>3</td>
</tr>
<tr>
<td>CRT 161 Animal Industry</td>
<td>3</td>
</tr>
<tr>
<td>CRT 202 Field Experiences</td>
<td>3</td>
</tr>
<tr>
<td>CRT 261 Agronomy</td>
<td>4</td>
</tr>
<tr>
<td>CRT 262 Principles of Horticulture</td>
<td>4</td>
</tr>
<tr>
<td>CRT 266 Food for Man</td>
<td>3</td>
</tr>
<tr>
<td>CRT 361 Introduction to Soils</td>
<td>4</td>
</tr>
<tr>
<td>CRT 362 Landscape Gardening</td>
<td>3</td>
</tr>
<tr>
<td>CRT 364 Land Use and Soil Conservation</td>
<td>3</td>
</tr>
<tr>
<td>CRT 365 Farm Cooperations and Management</td>
<td>4</td>
</tr>
<tr>
<td>CRT 366 Agriculture Marketing and Finance</td>
<td>4</td>
</tr>
</tbody>
</table>

| BUSINESS—6 hours | |
| ACTY 201 Accounting Concepts and Applications OR | |
| ACTY 210 Principles of Accounting | |
| MGMT 200 Business Statistics OR | |
| FCL 340 Legal Environment | |

| RELATED COURSES—12 hours | |
| MATH 111 Algebra II OR | |
| CAS 104 Business and Professional Speech OR | |
| Approved Equivalent | 3 |
| Approved Equivalent | |
| ECON 201 Principles of Economics* | 3 |
| SOC 200 Principles of Sociology* | |

| ELECTIVES—24 hours | |
| Recommended electives include BIOL 101*, 102*, 234*, 323, or 542, CHEM 101* or 102*, CS 105*, GEOG 244, GEOL 130*, SOC 250. | |

GENERAL EDUCATION DISTRIBUTION PROGRAM—12 hours

(35 hrs. plus 5 hrs. from College of Arts and Sciences. Courses with an * are approved for General Education. Two courses at 300-500 level are required.)

| AREA I Humanities and Fine Arts | 6 Min. |
| AREA II Social and Behavioral Sciences | 6 Min. |
| AREA III Natural Sciences and Mathematics | 6 Min. |
| AREA IV Non-Western World | 3 Min. |
| AREA V Writing Requirement* | 3 |

**IEGM 102 or BUS 142 or ENGL 105.

PHYSICAL EDUCATION—2 hours

TOTAL for graduation—122 hours

Requirements: Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.

General information regarding counseling, 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 two clock hours 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.

Prerequisites are designed to increase the probabilities of successful completion of the course, and will be strictly enforced in all departmental courses. Exceptions must be accepted by the course instructor no later than the end of the add period of the semester or session.

Agriculture (AGR)

Bachelor of Science Degree

Counselor: Dr. Maya Petersons

A student completing a Bachelor of Science degree in Dietetics is eligible to apply for an internship in a hospital, food clinic, or industrial food service as approved by the American Dietetics Association.

After the internship, the dietitian is eligible for positions in hospitals as food administrator, therapeutic dietitian, or teaching dietitian. A dietitian is also qualified for positions in commercial food establishments such as restaurants, hotels, airlines, and industrial feeding. Other areas are school cafeterias, community nutrition positions, and food service in the armed forces. The Student Dietetic Association of Southwest Michigan provides additional association of students with dietetic professionals.

Dietetics (DI)

Bachelor of Science Degree

Counselor: Dr. Maya Petersons

A student completing a Bachelor of Science degree in Dietetics is eligible to apply for an internship in a hospital, food clinic, or industrial food service as approved by the American Dietetics Association.

After the internship, the dietitian is eligible for positions in hospitals as food administrator, therapeutic dietitian, or teaching dietitian. A dietitian is also qualified for positions in commercial food establishments such as restaurants, hotels, airlines, and industrial feeding. Other areas are school cafeterias, community nutrition positions, and food service in the armed forces. The Student Dietetic Association of Southwest Michigan provides additional association of students with dietetic professionals.

Requirements: Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.
FASHION

Fashion Merchandising (FAS)
Bachelor of Science Degree
Counselor: Ms. Alice Kavanaugh

The fashion merchandising curriculum is designed for students wishing to pursue fashion careers in buying and/or management in large department stores, specialty shops, and boutiques. The student organization, FABS, provides additional fashion experiences.

Requirements
Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.

1. A grade of "C" or better must be earned in courses with a CRT prefix and in other specified courses presented for graduation.

2. The Marketplace Gallery is a student-operated store facility offering training and experience. Fashion merchandising majors are required to participate at the Marketplace Gallery.

3. Third year fashion merchandising students are required to participate in the Fashion Institute of Technology, New York, New York, for one or two semesters if a 3.0 grade point average has been maintained.

MAJOR COURSES—42 hours

(A grade of "C" or better must be earned in courses presented for graduation.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT 100</td>
<td>Career Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CRT 126</td>
<td>Fashion Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>CRT 155</td>
<td>Design Principles</td>
<td>3</td>
</tr>
<tr>
<td>CRT 202</td>
<td>Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>CRT 220</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>CRT 221</td>
<td>Fashion Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CRT 226</td>
<td>Fashion Merchandising II</td>
<td>3</td>
</tr>
<tr>
<td>CRT 228</td>
<td>Non-Textile Products</td>
<td>3</td>
</tr>
<tr>
<td>CRT 229</td>
<td>Menwear</td>
<td>3</td>
</tr>
<tr>
<td>CRT 320</td>
<td>Visual Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>CRT 326</td>
<td>History of Costume I</td>
<td>3</td>
</tr>
<tr>
<td>CRT 327</td>
<td>History of Costume II</td>
<td>3</td>
</tr>
<tr>
<td>CRT 329</td>
<td>Promotion and Coordination</td>
<td>3</td>
</tr>
<tr>
<td>CRT 425</td>
<td>Merchandising Pracicum</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
</tbody>
</table>

Department Approved Elective 2

Approved electives are CRT 205, 429, 430, or FREN 104.

RELATED COURSES—34 hours

(A grade of "C" or better must be earned in courses presented for graduation.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>IEGM 102</td>
<td>Technical Communication*</td>
<td>3</td>
</tr>
<tr>
<td>BIS 102</td>
<td>Introduction to Information Processing OR</td>
<td>3</td>
</tr>
<tr>
<td>CS 105</td>
<td>Introduction to Computers*</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics*</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
<td>3</td>
</tr>
<tr>
<td>PSY 344</td>
<td>Psychology in Business and Industry</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 352</td>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 370</td>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 374</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 404</td>
<td>Business and Society*</td>
<td>3</td>
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<tr>
<td>ENGL 100</td>
<td>One Writing Course Beyond 100 Level</td>
<td>4</td>
</tr>
</tbody>
</table>

ELECTIVES—4 hours

CONSUMER RESOURCES AND TECHNOLOGY

Food Service Administration (FSA)
Bachelor of Science Degree
Counselor: Dr. Maja Petersen

The food service administration curriculum is scientifically oriented for in-depth study of foods in relation to the business field. Students may pursue supervisory/managerial careers in the equipment field, food research, public utility companies, mass media productions, quality testing, technical writing, or governmental food agencies. Student Food Service Association activities provide additional professional training.

Requirements
Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.

MAJOR COURSES—45 hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CRT 130</td>
<td>Food Distribution Industry</td>
<td>3</td>
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<tr>
<td>CRT 132</td>
<td>Food Distribution Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>CRT 202</td>
<td>Field Experience</td>
<td>6</td>
</tr>
<tr>
<td>CRT 234</td>
<td>Food Distribution Supervision</td>
<td>3</td>
</tr>
<tr>
<td>CRT 236</td>
<td>Current Issues in Food Distribution</td>
<td>3</td>
</tr>
<tr>
<td>CRT 266</td>
<td>Food for Man</td>
<td>3</td>
</tr>
<tr>
<td>CRT 302</td>
<td>Coordinated Distribution Practices</td>
<td>6</td>
</tr>
<tr>
<td>CRT 331</td>
<td>Food Distribution Systems</td>
<td>3</td>
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<tr>
<td>CRT 332</td>
<td>Distribution Systems Processes</td>
<td>3</td>
</tr>
<tr>
<td>CRT 436</td>
<td>Problems in Food Distribution</td>
<td>3</td>
</tr>
<tr>
<td>CRT 500</td>
<td>Seminar in Distribution</td>
<td>3</td>
</tr>
</tbody>
</table>

RELATED COURSES—27 hours

Electives are CRT 205, 429, 430, or FREN 104.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 104</td>
<td>Business and Professional Speech OR</td>
<td>3</td>
</tr>
<tr>
<td>CAS 130</td>
<td>Introduction to Computers*</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics (Micro)*</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics (Macro)*</td>
<td>3</td>
</tr>
<tr>
<td>ACTY 210</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 242</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 350</td>
<td>Fundamentals of Management</td>
<td>3</td>
</tr>
<tr>
<td>FCL 340</td>
<td>Legal Environment</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 370</td>
<td>Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

APPROVED ELECTIVES—8 hours

(35 hrs. plus 5 hrs. from College of Arts and Sciences. Courses with an * are approved for General Education. Two courses at 300-500 level are required.)

Select fifteen (15) hours from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 300</td>
<td>Business Administration</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 307</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CRT 242</td>
<td>Food Distribution</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 300</td>
<td>Fundamentals of Management</td>
<td>3</td>
</tr>
<tr>
<td>FCL 320</td>
<td>Business Finance</td>
<td>3</td>
</tr>
<tr>
<td>FCL 340</td>
<td>Legal Environment</td>
<td>3</td>
</tr>
<tr>
<td>FCL 341</td>
<td>Marketing</td>
<td>3</td>
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</tbody>
</table>

ELECTIVES—26 hours
### GENERAL EDUCATION DISTRIBUTION

**PROGRAM—12/11 hours**

| AREA I | Humanities and Fine Arts | 6 Min. |
| AREA II | Social and Behavioral Sciences | 6 Min. |
| AREA III | Natural Sciences and Mathematics | 6 Min. |
| AREA IV | Non-Western World | 3 Min. |
| AREA V | Optional Electives | No Min. |

**PHYSICAL EDUCATION—2 hours**

**TOTAL** for graduation—122 hours

### Individual and Family Relationships (FAM)

**Bachelor of Science Degree**

Counselor: Dr. Linda L. Damson

The individual and family relationship curriculum is an interdisciplinary program designed with flexibility to meet individual needs and goals. This program is also intended for those desiring to pursue a Master’s degree program in home economics, counseling, and other related fields. The student organization, New Dimensions, provides additional opportunities for professional interaction and experiences.

**Requirements**

Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.

### MAJOR COURSES—24 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>CRT 110</td>
<td>Transitions to Adulthood</td>
</tr>
<tr>
<td>CRT 208</td>
<td>Consumer Education</td>
</tr>
<tr>
<td>CRT 210</td>
<td>Introduction to Human Sexuality</td>
</tr>
<tr>
<td>CRT 214</td>
<td>Human Growth and Development</td>
</tr>
<tr>
<td>CRT 266</td>
<td>Food for Man</td>
</tr>
<tr>
<td>CRT 318</td>
<td>Mate Selection and Marriage</td>
</tr>
<tr>
<td>CRT 413</td>
<td>Marriage and Family in Maturity</td>
</tr>
<tr>
<td>CRT 415</td>
<td>Effective Parenting</td>
</tr>
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### REQUIRED RELATED COURSES—12 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>SOC 122</td>
<td>Death: Dying and Bereavement</td>
</tr>
<tr>
<td>SOC 190</td>
<td>Men and Women in Contemporary Society*</td>
</tr>
<tr>
<td>SOC 314</td>
<td>Ethnic Relations</td>
</tr>
<tr>
<td>CAS 571</td>
<td>Theories of Interpersonal Communication</td>
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### REQUIRED RELATED ELECTIVES—24 hours

Select twenty-four (24) hours from the following:

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<tbody>
<tr>
<td>PEFR 100</td>
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<tr>
<td>SWRK 100</td>
</tr>
<tr>
<td>CAS 170</td>
</tr>
<tr>
<td>PSY 194</td>
</tr>
<tr>
<td>CRT 202</td>
</tr>
<tr>
<td>SOC 210</td>
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<td>PSY 250</td>
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<td>BAS 300</td>
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<td>SOC 362</td>
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<td>SOC 510</td>
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<td>HHS 530</td>
</tr>
<tr>
<td>ED 555</td>
</tr>
<tr>
<td>SOC 564</td>
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</table>

### ELECTIVES—20 hours

### GENERAL EDUCATION DISTRIBUTION

**PROGRAM—40 hours**

(35 hrs. plus 5 hrs. from College of Arts and Sciences. Courses with an * are approved for General Education. Two courses at 300-500 level are required.)

| AREA I | Humanities and Fine Arts | 6 Min. |
| AREA II | Social and Behavioral Sciences | 6 Min. |
| AREA III | Natural Sciences and Mathematics | 6 Min. |
| AREA IV | Non-Western World | 3 Min. |
| AREA V | Optional Electives | No Min. |

**PHYSICAL EDUCATION—2 hours**

**TOTAL** for graduation—122 hours

### Interior Design (ITD)

**Bachelor of Science Degree**

Counselor: Ms. Rebecca Marvin

Interior design is an interdisciplinary curriculum for the student who desires a career in residential or commercial interior design, retailing home furnishings or visual merchandising, marketing building products, as well as in the interior design aspects of the building construction and real estate fields. Active student chapters of the American Society of Interior Design and the Institute of Business Designers provide additional opportunities for professional activities.

**Requirements**

Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.

### MAJOR COURSES—41 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT 100</td>
<td>Career Seminar</td>
</tr>
<tr>
<td>CRT 150</td>
<td>Introduction to Interior Design</td>
</tr>
<tr>
<td>CRT 155</td>
<td>Design Principles</td>
</tr>
<tr>
<td>CRT 202</td>
<td>Field Experience</td>
</tr>
<tr>
<td>CRT 205</td>
<td>Topics-Sketching for Interior Design</td>
</tr>
<tr>
<td>CRT 220</td>
<td>Textiles</td>
</tr>
<tr>
<td>CRT 228</td>
<td>Non-Textile Products</td>
</tr>
<tr>
<td>CRT 255</td>
<td>Lighting for Interiors</td>
</tr>
<tr>
<td>CRT 320</td>
<td>Visual Merchandising</td>
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<td>CRT 350</td>
<td>Textiles for Interiors</td>
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<tr>
<td>CRT 355</td>
<td>Period Interiors I</td>
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<td>CRT 356</td>
<td>Period Interiors II</td>
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<td>CRT 450</td>
<td>Residential Design</td>
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<td>CRT 451</td>
<td>Contract Design</td>
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<td>CRT 459</td>
<td>Creative Interiors</td>
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### RELATED COURSES—36 hours

<table>
<thead>
<tr>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIGM 140</td>
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<td>ECON 201</td>
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<td>ACTY 210</td>
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<td>ART 221</td>
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<td>IEGM 240</td>
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<td>IEGM 243</td>
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<td>IEGM 245</td>
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<td>ITE 302</td>
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<td>IEGM 102</td>
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<td>BIS 142</td>
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<tr>
<td>CAS 104</td>
</tr>
<tr>
<td>MGMT 210</td>
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<tr>
<td>MGMT 300</td>
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</tbody>
</table>

### ELECTIVES—11 hours

### GENERAL EDUCATION DISTRIBUTION

**PROGRAM—40 hours**

(35 hrs. plus 5 hrs. from College of Arts and Sciences. Courses with an * are approved for General Education. Two courses at 300-500 level are required.)

| AREA I | Humanities and Fine Arts | 6 Min. |
| AREA II | Social and Behavioral Sciences | 6 Min. |
| AREA III | Natural Sciences and Mathematics | 6 Min. |
| AREA IV | Non-Western World | 3 Min. |
| AREA V | Optional Electives | No Min. |

**TOTAL** for graduation—122 hours

### Petroleum Distribution (PD)

**Bachelor of Science Degree**

Counselor: Lawrence A. Williams

Requirements Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this bulletin.

### MAJOR COURSES—33 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT 135</td>
<td>Introduction to Petroleum Industry</td>
</tr>
<tr>
<td>CRT 202</td>
<td>Field Experience</td>
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<tr>
<td>CRT 235</td>
<td>Properties and Applications of Petroleum Products</td>
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<tr>
<td>CRT 236</td>
<td>Service Station Supervision</td>
</tr>
<tr>
<td>CRT 302</td>
<td>Coordinated Distribution Practices</td>
</tr>
<tr>
<td>CRT 309</td>
<td>Industry Survey</td>
</tr>
<tr>
<td>CRT 336</td>
<td>Petroleum Jobber Operations</td>
</tr>
<tr>
<td>CRT 337</td>
<td>Distribution and Handling of Petroleum Products</td>
</tr>
<tr>
<td>CRT 432</td>
<td>Issues in Oil</td>
</tr>
<tr>
<td>CRT 500</td>
<td>Seminar in Distribution</td>
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</table>

### RELATED COURSES—36 hours

<table>
<thead>
<tr>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIS 102</td>
</tr>
<tr>
<td>CAS 104</td>
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<tr>
<td>BIS 142</td>
</tr>
<tr>
<td>ECON 201</td>
</tr>
<tr>
<td>ECON 202</td>
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<tr>
<td>CRT 205</td>
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<td>ACTY 210</td>
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<td>ACTY 211</td>
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<tr>
<td>BIS 242</td>
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<tr>
<td>MKTG 370</td>
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<tr>
<td>CRT 450</td>
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</tbody>
</table>

### ELECTIVES—11 hours

### GENERAL EDUCATION DISTRIBUTION

**PROGRAM—40 hours**

(35 hrs. plus 5 hrs. from College of Arts and Sciences. Courses with an * are approved for General Education. Two courses at 300-500 level are required.)
Textile and Apparel Technology (TET)

Bachelor of Science Degree
Counselor: Ms. Rebecca Marvin

The textile and apparel technology curriculum is designed for students interested in careers in the creative, protective, functional, and communicative aspects of clothing and textiles. Students will develop in consultation with a department adviser a career direction option through the selection of electives.

Requirements: Candidates for the Bachelor of Science degree must complete the following program as well as University requirements stated elsewhere in this Bulletin.

Major Courses—36 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CRT 100</td>
<td>100 Career Seminar</td>
</tr>
<tr>
<td>CRT 202</td>
<td>202 Field Experience</td>
</tr>
<tr>
<td>CRT 205</td>
<td>205 Topics in Consumer Resources and Technology</td>
</tr>
<tr>
<td>CRT 209</td>
<td>209 Consumer Education</td>
</tr>
<tr>
<td>CRT 221</td>
<td>221 Fashion Analysis</td>
</tr>
<tr>
<td>CRT 222</td>
<td>222 Flat Pattern Design**</td>
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<tr>
<td>CRT 224</td>
<td>224 Experimental Clothing Techniques**</td>
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<tr>
<td>CRT 320</td>
<td>320 Visual Merchandising</td>
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<tr>
<td>CRT 324</td>
<td>324 Dressmaker Tailoring</td>
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<tr>
<td>CRT 329</td>
<td>329 Promotion and Coordination</td>
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<tr>
<td>CRT 350</td>
<td>350 Textiles for Interiors</td>
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<tr>
<td>CRT 405</td>
<td>405 Travel/Study Seminar 1-4</td>
</tr>
<tr>
<td>CRT 429</td>
<td>429 Internship</td>
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</tbody>
</table>

**May be repeated for another three semester credit hours.

Related Courses—19 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>EGM 102</td>
<td>102 Technical Communication*</td>
</tr>
<tr>
<td>CHEM 107</td>
<td>107 Chemistry of Textiles and Design Media*</td>
</tr>
<tr>
<td>CAS 170</td>
<td>170 Interpersonal Communication I*</td>
</tr>
<tr>
<td>PSY 194</td>
<td>194 General Psychology*</td>
</tr>
<tr>
<td>SOC 200</td>
<td>200 Principles of Sociology*</td>
</tr>
<tr>
<td>ECON 201</td>
<td>201 Principles of Economics*</td>
</tr>
</tbody>
</table>

Career Direction Option—18 to 23 hours

Must be planned and structured with a department adviser to apply toward graduation.

Electives—2 to 7 hours

General Education Distribution—40 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Program</th>
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<tbody>
<tr>
<td>CRT 100</td>
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<tr>
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<tr>
<td>CRT 209</td>
<td>209 Consumer Education</td>
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<tr>
<td>CRT 210</td>
<td>210 Introduction to Human Sexuality</td>
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<tr>
<td>CRT 214</td>
<td>214 Human Growth and Development</td>
</tr>
<tr>
<td>CRT 318</td>
<td>318 Mate Selection and Marriage</td>
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<tr>
<td>CRT 415</td>
<td>415 Effective Parenting</td>
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<tr>
<td>CRT 102</td>
<td>102 Field Experience</td>
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<td>CRT 209</td>
<td>209 Consumer Education</td>
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<tr>
<td>CRT 130</td>
<td>130 Food Distribution Industry</td>
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<tr>
<td>CRT 132</td>
<td>132 Food Distribution Merchandising</td>
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<tr>
<td>CRT 231</td>
<td>231 Food Distribution Operations</td>
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<tr>
<td>CRT 232</td>
<td>232 Food Distribution Operations</td>
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<tr>
<td>CRT 202</td>
<td>202 Field Experience</td>
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<td>CRT 209</td>
<td>209 Consumer Education</td>
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<tr>
<td>CRT 165</td>
<td>165 Food Science Principles</td>
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<tr>
<td>CRT 415</td>
<td>415 Effective Parenting</td>
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</tbody>
</table>

Electives—6 hours

General Education Economics—18 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CRT 202</td>
<td>202 Field Experience</td>
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<tr>
<td>CRT 209</td>
<td>209 Consumer Education</td>
</tr>
<tr>
<td>CRT 124</td>
<td>124 Clothing Construction</td>
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<tr>
<td>CRT 165</td>
<td>165 Food Science Principles</td>
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</tbody>
</table>

Electives—6 hours

Interior Design—18 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
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<tbody>
<tr>
<td>CRT 202</td>
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<tr>
<td>CRT 209</td>
<td>209 Consumer Education</td>
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<tr>
<td>CRT 165</td>
<td>165 Food Science Principles</td>
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<tr>
<td>CRT 220</td>
<td>220 Textiles</td>
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<tr>
<td>CRT 355</td>
<td>355 Period Interiors I</td>
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<tr>
<td>CRT 356</td>
<td>356 Period Interiors II</td>
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</tbody>
</table>

Electives—6 hours

Occupational Foods (Teaching)—20 hours

<table>
<thead>
<tr>
<th>Cr. Hr.</th>
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<tbody>
<tr>
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<tr>
<td>CRT 165</td>
<td>165 Food Science Principles</td>
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<tr>
<td>CRT 260</td>
<td>260 Nutrition</td>
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<td>CRT 368</td>
<td>368 Quantity Foods</td>
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<tr>
<td>CRT 498</td>
<td>498 Institutional Management</td>
</tr>
</tbody>
</table>

Electives—4 hours

VE 542, Occupational Education, is required for teaching certification.

Course Descriptions

Courses described in italics are approved for General Education. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

General Consumer Resources and Technology

100 Career Seminar (1-0) 1 hr. Fall, Winter

Orientation to diversity, impact, and special career opportunities in home economics, distributive education, and agriculture.

202 Field Experience 3 hrs. Fall, Winter, Spring, Summer

On-the-job experience under supervision of department and cooperating organizations. Written materials and performance appraisal required. Department majors only.

205 Topics in Consumer Resources and Technology 1-3 hrs. Fall, Winter, Spring

Individual topics in five/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.

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.

598 Independent Study in Consumer Resources and Technology 1-6 hrs. Fall, Winter, Spring, Summer

Directed independent advanced study in subject matter area not otherwise treated in departmental courses. Department approval required prior to enrollment.
Agriculture

160 Agriculture Science (3-0) 3 hrs. Fall, Winter
An introduction to the scientific principles and practices of food and fiber production, and agriculture’s role in today’s society and economy.

161 Animal Industry (3-0) 3 hrs. Fall
Fundamental problems and essential general concepts of livestock production and marketing in the United States. An introduction to types, breeds, selection, feeding and management of dairy cattle, beef cattle, and swine.

162 Animal Industry (3-0) 3 hrs. Winter
A continuation of CRT 161 with sheep, horses, and poultry being considered.

164 Practical Vegetable Gardening (2-0) 2 hrs. Spring
The basic concepts and fundamental practices of vegetable growing for the home gardener.

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.

262 Principles of Horticulture (4-0) 4 hrs. Fall, Winter
Basic principles of modern horticulture. Study includes fruits, vegetables, flowers, ornamental trees, turf management, plant propagation, and nursery culture. Greenhouse experience also.

360 Feeding and Animal Nutrition (3-0) 3 hrs. Winter
The science of feeding, caring for, and managing livestock, including the formulation of ration formulas for beef, dairy, sheep, swine, poultry, and horses.

361 Introduction to Soils (3-1) 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: CRT 100 or one unit of high school Algebra and Chemistry.

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, and basic landscape design.

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.

364 Land Use and Soil Conservation (3-0) 3 hrs. Winter
A study of the utilization of land by individuals and ways and means of promoting better use of various land types, including recommended practices for conservation of the productivity of our lands.

365 Farm Organizations and Management (4-0) 4 hrs. Winter
The farm as a business and efficient use of all resources. Basic principles of production, management, farm accounting and related fields of agriculture science and various organizations serving agriculture.

366 Agriculture Marketing and Finance (4-0) 4 hrs. Spring
The organization and functioning of markets as they relate to the marketing of such farm products as grains, fruits, livestock, and vegetables. Financing of various enterprises and sources of credit available to the farm operator.

560 Soil Science (3-0) 3 hrs. Winter
Treats soil as a natural resource, and investigates how soil formation, composition and classification are related to various physical, chemical and biological factors in the environment. Consideration is given to soil fertility, water retention, plant growth and land use. Prerequisite: CRT 361.

Distributive Education

130 Food Distribution Industry (3-0) 3 hrs. Fall, Winter
An introductory course for those entering the field of food distribution. A study of food distribution, its history, evolution, and structure with emphasis on the growing importance of the store unit will be analyzed. Basic principles and practices of the industry will be considered.

132 Food Distribution Merchandising (3-0) 3 hrs. Fall, Winter
A course designed to acquaint the student with the various merchandising techniques peculiar to food distribution. Buying, display, promotion, turnover, pricing for profit, and increasing departmental sales will be emphasized. Resource people from the industry will be utilized to enrich classroom activities.

135 Introduction to Petroleum Industry (3-0) 3 hrs. Fall, Winter
A basic course in the study of the petroleum industry dealing with its history, exploration, drilling, production, refining, distribution, service station records and sales, and general economics and structure of the industry. The course includes the orientation necessary for the student to understand the cooperative work program and the student’s responsibility to such a program.

231 Food Distribution Supervision (3-0) 3 hrs. Fall, Winter
A course designed for providing techniques in supervising and developing people in food distribution. Attention will be directed toward organizational principles, labor relations, understanding people, communication, coaching, and building a store team. Leadership concepts so necessary in the industry will be stressed. Periodic lectures from industry resource people will enrich classroom instruction.

232 Food Distribution Operation (3-0) 3 hrs. Fall, Winter
A course designed to acquaint the student with the principles and methods used in the operation of food distribution units with regard to organization, planning, and control. The over-all objective will be to provide knowledge and develop understanding in the students for efficient unit operation. Resource people from food distribution will appear in the classroom to enrich the instructional program.

235 Properties and Application of Petroleum Products (3-0) 3 hrs. Winter
A comprehensive study of the properties of petroleum products such as fuels, lubricants, greases, naphthas, waxes, pesticides, and petroleum chemicals. The distribution and uses of these products in manufacturing, transportation, agriculture, and by the individual consumer are covered.

236 Service Station Supervision (3-0) 3 hrs. Fall
The responsibilities and activities of the petroleum company salesperson and supervision as they relate to retail establishments are emphasized. Such items as merchandising policies, advertising, inventory, product knowledge, plant layout, location, equipment, and selling to the consumer are covered.

302 Coordinated Distribution Practices 3 hrs. Fall, Winter, Spring, Summer
This is an advanced course in supervised work experience under the supervision of the University and the participating company. Written reports will be required and a performance appraisal of the trainee will be made by the employer. Students may elect two units for a total of six semester hours. Prerequisite: junior or senior standing.

309 Industry Survey (3-0) 3 hrs. Spring, Summer
Inspection trips are made to representate businesses and industrial establishments to observe such functions as production, transportation, storage, research, and marketing. Company representatives will lecture to the class on the phases listed. Written reports are to be made of the visits, and a fee for transportation and housing is required from each student.

331 Food Distribution Managerial Processes (3-0) 3 hrs. Fall, Every 4th Spring beginning Spring 1979
A study of advanced techniques in the development of food distribution personnel. Emphasis will be placed on job understanding, career dynamics, performance review, performance interview, behavior principles, and career discussions including appraising promotability. Time will be allowed for classroom practice of these techniques using role-playing procedures. Prerequisite: CRT 231.

332 Food Distribution Systems Control (3-0) 3 hrs. Fall, Every 4th Spring beginning Spring 1980
An analysis of the systems and controls used in the food distribution industry for controlling operations, maximizing profits and minimizing costs, the use of special operating data and ratios to measure performance, budget manpower, and forecast sales and profits. Other strategies and control systems applicable to food distribution. Prerequisite: CRT 232.

336 Petroleum Jobber Operations (3-0) 3 hrs. Fall
An overall study of petroleum jobber operations with special emphasis on heating oil, including degree day forecasting, delivery dispatching, credit and collection control, sales and cost analyses, employee productivity, and operating expense accounting with the use of electronic processing.
337 Distribution and Handling of Petroleum Products (3-0)
3 hrs. Winter
A course covering the wholesale and retail distribution channels used by major and independent companies. The transportation and handling of petroleum products from the oil field to the retail outlet. The analysis of a sales territory and the selection of a service station site.

430 Mass Merchandising (3-0)
3 hrs. Fall, Winter
Provides student acquisition of mass merchandising competencies developed through performance objectives. Prerequisite: junior standing.

432 Issues in Oil (1-2)
3 hrs. Winter
A study of the current issues affecting the petroleum industry. This is a capstone course for petroleum distribution majors using a seminar approach. Prerequisite: senior standing or permission of instructor.

436 Problems in Food Distribution (3-0)
3 hrs. Winter, Every 4th Spring beginning Spring 1982
An integrating course designed for advanced students using an analytical approach to solving problems of an internal nature in food distribution firms. This is a capstone course for Food Distribution majors using the case problem method. Open only to seniors.

438 Current Issues in Food Distribution (3-0)
3 hrs. Winter, Every 4th Spring beginning Spring 1982
A study of current issues external to the firm affecting the food distribution industry. It provides an opportunity for the study of relevant issues normally beyond the scope of regular departmental offerings. Open only to seniors.

500 Seminar in Distribution (3-0)
2-4 hrs. Fall, Winter
An intensive study of problems related to distribution. This seminar is especially recommended for seniors and graduates in food or petroleum distribution.

Home Economics

110 Transitions to Adulthood (3-0)
3 hrs. Fall, Winter
A study of interpersonal relationships and the physical and emotional development of the person in early and later adolescence.

124 Clothing Construction (1-3)
3 hrs. Fall, Winter
Basic construction techniques, pattern alteration, fitting and design as related to the individual construction of garment. Placement test available for those desiring placement in upper level courses.

126 Fashion Merchandising (3-0)
3 hrs. Fall
Principles of merchandise selection, sources of buying information, responsibilities of buyers in various types of firms, trends and consumer activity in apparel and non-apparel fashions.

150 Introduction to Interior Design (3-0)
3 hrs. Fall, Winter
Basic study of the elements and principles of furnishing interiors.

155 Design Principles (1-3)
3 hrs. Fall, Winter
Presentation, study, and application of the principles of design.

165 Food Science Principles (3-0)
3 hrs. Fall
Relationship of food science principles to food preparation techniques. Prerequisite: CHEM 101.

209 Consumer Education (3-0)
3 hrs. Fall, Winter
A study of the functions of consumers in our economy with emphasis on money management and decision making.

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.

214 Human Growth and Development (1-3)
3 hrs. Fall, Winter
A study of physical, social, emotional, and intellectual growth of children. Three hours per week required participation in nursery or day care center. (Hours are arranged).

220 Textiles (3-0)
3 hrs. Fall, Winter
Consumer-oriented textiles emphasizing fibers, yarns, fabric constructions and finishes related to use, serviceability, and care. Prerequisite: CHEM 107 or equivalent.

221 Fashion Analysis (3-0)
3 hrs. Fall, Winter
Elements comprising the total fashion appearance requisite to vocational preparation for men and women in fashion merchandising.

222 Flat Pattern Design (1-4)
3 hrs. Winter
A study of the drafting techniques employed in the flat pattern method for designing clothing. May be repeated once. Prerequisite: CRT 124.

224 Experimental Clothing Techniques (1-3)
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.

225 Fashion Merchandising II (3-0)
3 hrs. Winter
Principles of merchandising mathematics and its use in the retail industry.

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. Select section according to curriculum.

229 Menswear (3-0)
3 hrs. Fall
The course includes history, terminology, fabrics, garments, accessories, and the organizational structure peculiar to this industry. Prerequisite: CRT 220.

255 Lighting for Interiors (3-0)
3 hrs. Winter
Consider lighting 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.

260 Nutrition (3-0)
3 hrs. Fall
A study of the essential nutrients and their function in the human body. Prerequisites: CHEM 101 or BIOL 101 or 107, BMED 112.

265 Meal Management (3-0)
3 hrs. Winter—Odd Years
Planning, preparing, and serving meals with emphasis on time, money, and energy management. Open to non-majors by permission. Prerequisite: CRT 165.

266 Food for Man (3-0)
3 hrs. Fall, Winter
A study of the nutritional needs of all age groups. The effect of our environment on the problems of world-wide feeding and consumerism.

318 Mate Selection and Marriage (3-0)
3 hrs. Fall, Winter, Spring
Exploration of research, literature, and practical issues involved in love, mate selection, and marriage.

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.

324 Dressmaker Tailoring (1-3)
3 hrs. Winter
Construction of tailored garments using time-saving methods. A minimum of two garments will be completed. Prerequisite: CRT 124 or 224 or consent of instructor.

326 History of Costume I (3-0)
3 hrs. Fall
Survey of the development of costume from prehistoric people to the French Revolution with its application to contemporary dress.

327 History of Costume II (3-0)
3 hrs. Winter
Survey of the development of costume from the French Revolution to present day with emphasis on 20th century designers and analysis of historic fashion cycles and current trends as a basis for future prediction and design.

329 Promotion and Coordination (3-0)
3 hrs. Fall, Winter
Principles and techniques important in presenting fashion products. Prerequisites: CRT 126, 155.

350 Textiles for Interiors (3-0)
3 hrs. Fall
Application of basic textile principles for evaluation and analysis of interior textile products with regard to quality selection, performance, and maintenance for home and office. Prerequisite: CRT 220.

355 Period Interiors I (3-0)
3 hrs. Fall
Influences and characteristics of historical interiors and exteriors from antiquity up to English Victorian.

356 Period Interiors II (3-0)
3 hrs. Winter
Influences and characteristics of historical interiors and exteriors from Early American through contemporary.

368 Quantity Foods (2-4)
4 hrs. Winter
Quantity foods preparation in a residence hall kitchen and the school lunchroom including quantity food purchasing techniques. Prerequisites: CRT 165, 260.
### Industrial Technology and Education (ITE)

John L. Feirer, Chair  
Michael B. Atkins  
Phillip L. Bruce  
Arvon D. Byle  
Dennis E. Darling  
Wallace F. Fillingham  
Rex E. Hall  
Gilbert R. Hutchings  
James J. Jaworski  
John R. Lindtbeck  
Charles G. Risher  
Walter C. Schwersinske  
Peter J. Strazdas  
James L. Ulmer

The Industrial Technology and Education Department, one of the largest in the country with an excellent staff and laboratories, offers several different programs to prepare teachers and professional personnel for education and industry.

### Programs

1. **Industrial education curricula** are 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.

2. **Vocational-technical curricula** are designed to prepare certified teachers and supervisors of vocational-technical subjects for the secondary school, community college, and industrial training. Individuals must have a minimum of two years relevant work experience. Students may enroll in a cooperative industrial program to secure the occupational experience or pass an appropriate competency examination.

3. The **printing management/marketing curriculum** is designed to prepare graduates for middle level management or sales positions in the graphic arts industries. Students may select either the management or marketing option.

4. The **industrial technology curriculum** is a technology-oriented curriculum built upon a balanced program of studies drawn from a variety of disciplines related to industry. Included are a sound knowledge of materials, production processes, and principles of distribution and industrial practices. The development of technical skills along with a well-rounded general education will permit the graduate to cope with technical and production problems of industry.

5. The **construction supervision and management curriculum** prepares individuals to work in residential and light commercial construction industries and in related areas, such as, material suppliers, trade organizations, and building code enforcement. Emphasis is placed on practical application as well as on construction theory. The areas included are construction practices, mechanical systems, supervision and management techniques, and business operation.

6. **Other options**

   A. The **manual arts therapy curriculum** is designed to prepare the industrial education student to work in the fields of mental and physical rehabilitation.
Employment Opportunities

Even though there is an over supply of certified teachers in many areas, the prospects for securing a teaching position in industrial, vocational, and technical education remain bright. There are many opportunities for employment in business and industry for students prepared in a specific technical area.

Industrial Education Curriculum

Bachelor of Science Degree

A. Minimum hours required for this curriculum 122 hrs.
B. General Education Requirements 40 hrs.
C. Technical specialty in one of the following areas 30-35 hrs.
   Architectural Drafting 3 hrs.
   Building Construction 3 hrs.
   Electricity/Electronics 3 hrs.
   General Industry 3 hrs.
   Industrial Drafting 3 hrs.
   Metal Manufacturing 3 hrs.
   Plastics 3 hrs.
   Power-Energy 3 hrs.
   Printing 3 hrs.
   Wood Manufacturing 3 hrs.
E. Administration, Business, Manufacturing, or other 15-20 hrs.
F. Written Communication (ENGL 105, IEGM 102, or BIS 142) 3 hrs.
G. Mathematics 8 hrs.
H. Science 4-8 hrs.
I. Physical Education 2 hrs.
J. Electives 0-11 hrs.

Vocational-Technical Curriculum

Bachelor of Science Degree

A. Minimum hours required for this curriculum 122 hrs.
B. General Education Requirements 40 hrs.
C. Mathematics 8 hrs.
D. Technical major in one of the following areas 30 hrs.
   Automation 3 hrs.
   Drafting 3 hrs.
   Electricity/Electronics 3 hrs.
   Printing 3 hrs.
   Metalworking 3 hrs.
   Woodworking 3 hrs.
E. Technical minor in any one of the above areas other than the major 20 hrs.
F. Degree—Major consists of one of two options:
   Vocational-Industrial Education (Certificate) 30 hrs.
   Technical Education (Non-Certificate) 30 hrs.
G. Option I—Vocational-Industrial Education leading to Secondary Teaching Certificate 30 hrs.
H. Option II—Technical Education without teaching certificate 30 hrs.

Industrial Technology Curriculum

Bachelor of Science Degree

A. Minimum hours required for this curriculum 122 hrs.
B. General Education Requirements 40 hrs.
C. Technical specialty in one of the following areas 30-35 hrs.
   Automechanics 3 hrs.
   Building Construction 3 hrs.
   Electricity/Electronics 3 hrs.
   Forestry/General Industry 3 hrs.
   Industrial Drafting 3 hrs.
   Metal Manufacturing 3 hrs.
   Plastics 3 hrs.
   Printing 3 hrs.
   Wood Manufacturing 3 hrs.
E. Administration, Business, Manufacturing, or other 15-20 hrs.
F. Written Communication (ENGL 105, IEGM 102, or BIS 142) 3 hrs.
G. Mathematics 8 hrs.
H. Science 4-8 hrs.
I. Physical Education 2 hrs.
J. Electives 0-11 hrs.

Printing Management/Marketing Curriculum

Bachelor of Science Degree

Minimum hours required for this curriculum 122 hrs.

Core Courses 83 hrs.

A. General Education Requirements 40 hrs.

I. Physical Education 2 hrs.

### Employment Opportunities

Even though there is an over supply of certified teachers in many areas, the prospects for securing a teaching position in industrial, vocational, and technical education remain bright. There are many opportunities for employment in business and industry for students prepared in a specific technical area.

### Industrial Education Curriculum

**Bachelor of Science Degree**

- **A. Minimum hours required for this curriculum**: 122 hrs.
- **B. General Education Requirements**: 40 hrs.
- **C. Technical specialty in one of the following areas**: 30-35 hrs.
  - Architectural Drafting
  - Building Construction
  - Electricity/Electronics
  - General Industry
  - Industrial Drafting
  - Metal Manufacturing
  - Plastics
  - Power-Energy
  - Printing
  - Wood Manufacturing
- **D. Related Technical**: 20-25 hrs.
- **E. Administration, Business, Manufacturing, or other**: 15-20 hrs.
- **F. Written Communication (ENGL 105, IEGM 102, or BIS 142)**: 3 hrs.
- **G. Mathematics**: 8 hrs.
- **H. Science**: 4-8 hrs.
- **I. Physical Education**: 2 hrs.
- **J. Electives**: 0-11 hrs.

### Vocational-Technical Curriculum

**Bachelor of Science Degree**

- **A. Minimum hours required for this curriculum**: 122 hrs.
- **B. General Education Requirements**: 40 hrs.
- **C. Mathematics**: 8 hrs.
- **D. Technical major in one of the following areas**: 30 hrs.
  - Automation
  - Drafting
  - Electricity/Electronics
  - Printing
  - Metalworking
  - Woodworking
- **E. Technical minor in any one of the above areas other than the major**: 20 hrs.
- **F. Degree—Major consists of one of two options**:
  - Vocational-Industrial Education (Certificate) 30 hrs.
- **G. Option I—Vocational-Industrial Education leading to Secondary Teaching Certificate**: 30 hrs.
- **H. Option II—Technical Education without teaching certificate**: 30 hrs.

### Industrial Technology Curriculum

**Bachelor of Science Degree**

- **A. Minimum hours required for this curriculum**: 122 hrs.
- **B. General Education Requirements**: 40 hrs.
- **C. Technical specialty in one of the following areas**: 30-35 hrs.
  - Automechanics
  - Building Construction
  - Electricity/Electronics
  - Forestry/General Industry
  - Industrial Drafting
  - Metal Manufacturing
  - Plastics
  - Printing
  - Wood Manufacturing
- **D. Related Technical**: 20-25 hrs.
- **E. Administration, Business, Manufacturing, or other**: 15-20 hrs.
- **F. Written Communication (ENGL 105, IEGM 102, or BIS 142)**: 3 hrs.
- **G. Mathematics**: 8 hrs.
- **H. Science**: 4-8 hrs.
- **I. Physical Education**: 2 hrs.
- **J. Electives**: 0-11 hrs.

### Printing Management/Marketing Curriculum

**Bachelor of Science Degree**

- **Minimum hours required for this curriculum**: 122 hrs.
- **Core Courses**: 83 hrs.

- **A. General Education Requirements** 40 hrs.

- **I. Physical Education**: 2 hrs.
B. Graphic Arts .......................... 41 hrs.
ITE 150 Graphic Arts ......................... 3
(May be waived after review of high school experience.) Prerequisite: None
ITE 250 Typographic Design ..................... 3
ITE 253 Printing and Platemaking, Prerequisites: ITE 150, Soph. standing
ITE 254 Machine Composition ..................... 3
ITE 256 Intro. to Flexography ...................... 3
ITE 350 Photolithographic Techniques .............. 3
ITE 351 Lithographic Presswork .................... 3
ITE 359 Intro. to Gravure Printing, Prerequisites: ITE 150, Junior standing
ITE 450 Advanced Presswork ...................... 3
ITE 452 Estimating ............................ 3
ITE 551 Half-tone Photo Processes .................. 3
ITE 552 Estimating ............................. 2
ITE 553 Printing Production Management .......... 3
Prerequisite: Junior standing
PAPR 354 Page Industry Processes .................. 3
C. ECON 201 Principles of Economics 3
Prerequisite: None
D. Approved Writing Course ....................... 3
(Must be approved for General Education.)
E. Mathematics ................................ 6 hrs.
MATH 111 Algebra II or equivalent ................. 3
MATH 116 Finite Mathematics with Applications .. 3
Fine Prerequisite: MATH 111 or equivalent
F. Physical Education ......................... 2 hrs.

Option I. Printing Management
(Either Option I or Option II may be selected.)
A. Core Courses ............................. 83 hrs.
ACTY 201 Accounting Concepts and Applications .. 3
Prerequisite: None
BIS 102 Intro. to Information Processing .......... 3
Prerequisite: None
MGMT 200 Business Statistics ..................... 3
Prerequisites: MATH 116, BIS 102
MGMT 300 Fundamentals of Management .......... 3
Prerequisite: Junior standing
(ECON 201 recommended)
BIS 264 RPG .................................. 3
Prerequisite: BIS 102 OR
BIS 261 COBOL ............................... 3
Prerequisite: BIS 102

C. Industrial Management ........................ 19-20 hrs.
IEGM 100 Introduction to Industry ................. 2
Prerequisite: None
IEGM 305 Work Analysis ........................ 3
Prerequisite: None
IEGM 326 Production Control ................. 3
Prerequisite: MATH 260 or BIS 200
IEGM 328 Industrial Quality Control ............... 3
Prerequisite: MATH 260 or MGMT 200
IEGM 402 Supervision of Industrial Operations .... 3
Prerequisite: Junior standing
IEGM 403 Industrial Labor Relations 3
Prerequisite: Senior standing
ITE 545 Safety Practices and Compliance .......... 2
Prerequisite: Upperclass
D. Electives ..................................... 5 hrs.

Option II. Printing Marketing
(Either Option I or Option II may be selected.)
A. Core Courses ............................. 83 hrs.

B. General Business ........................... 9 hrs.
BIS 102 Intro. to Information Processing .......... 3
Prerequisite: None
BIS 264 RPG .................................. 3
Prerequisite: BIS 102 OR

C. General Marketing .......................... 21 hrs.
MKTG 370 Marketing ............................ 3
Prerequisite: ECON 201
MKTG 371 Marketing Research .................... 3
Prerequisites: MKTG 370, MGMT 200
MKTG 372 Purchasing Management ................. 3
Prerequisite: MKTG 370
MKTG 374 Advertising ............................ 3
Prerequisite: MKTG 370
MKTG 376 Sales Administration .................... 3
Prerequisite: MKTG 370
MKTG 470 Industrial Marketing .................... 3
Prerequisite: MKTG 370
MKTG 574 Marketing Logistics ..................... 3
Prerequisite: MKTG 370

D. Electives ..................................... 9 hrs.

Construction Supervision and Management
Bachelor of Science Degree
Requirements
Candidates for the Bachelor of Science degree must complete the following program of 122 semester credit hours as well as University requirements stated elsewhere in this bulletin.

CONSTRUCTION—44 hours
ITE 120 Technical Graphics OR ................. 3
ITE 220 Industrial Graphics ...................... 3
ITE 200 Machine Woodwork ...................... 3
ITE 205 Concrete, Masonry Construction ......... 3
ITE 206 Construction of Wood Frame Structures .. 3
ITE 207 Interior Trim and Finishing .......... 3
ITE 306 Commercial Construction Methods ....... 3
ITE 307 Plumbing and Electrical Practices ...... 3

ITE 308 Application and Administration of Building Codes ........ 3
ITE 309 Heating, Ventilation, and Air Conditioning .......... 3
ITE 403 Specifications and Estimating for Bldg. Const. ...... 3
ITE 409 Scheduling and Project Mgmt. of Bldg. Const. .... 3
ITE 520 Architectural Graphics ................... 3
ITE 524 Commercial Architectural Design ............ 2
Approved Electives (See Adviser) .................. 6

RELATED COURSES—17 hours
ME 251 Statics and Strength of Materials .......... 4
ME 261 Surveying ................................ 2
(Me to be taken Spring session of sophomore or junior year.)
ME 351 Structural Theory and Design ............. 3
ITE 545 Safety Practices and Compliance .......... 2
IEGM 402 Supervision of Industrial Operations .... 3
IEGM 403 Industrial Labor Relations .............. 3

BUSINESS—15 hours
ACTY 201 Accounting Concepts and Applications ... 3
MGMT 210 Small Business Management .................. 3
MGMT 300 Fundamentals of Management .......... 3
MKTG 370 Marketing ........................... 3
FCL 330 Real Estate Fundamentals .......... 3
FCL 340 Legal Environment ........................ 3

DATA PROCESSING—6 hours
CS 105 Introduction to Computers ................. 3
CS 111 Computer Programming ........................ 3

ECONOMICS—3 hours
ECON 201 Principles of Economics .................. 3

MATHEMATICS AND SCIENCE—13 hours
MATH 101 Trigonometry or equivalent .... 2
MATH 111 Algebra II or equivalent ........... 3
CHEM 103 General Chemistry ...................... 4
PHYS 106 Elementary Physics ..................... 4

ELECTIVE—1 hour

GENERAL EDUCATION DISTRIBUTION PROGRAM—21 hours
These course requirements, along with curricular requirements, will satisfy General Education Distribution Program requirements provided that at least two 300-500 level General Education courses are completed. Courses with an * are approved for General Education.

AREA I Humanities and Fine Arts .............. 6

AREA II Social and Behavioral Sciences .......... 3

AREA III Natural Sciences and Mathematics (8 hours included in curriculum) ................. 3

AREA IV Non-Western World ...................... 3

AREA V Optional Electives ....................... 6

Writing Requirement (ENGL 105 or BIS 142 or IEGM 102) 3

PHYSICAL EDUCATION—2 hours

TOTAL for graduation—122 hours
Course Descriptions

Courses described in italics are approved for General Education. Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours). Courses will be offered during indicated semesters if warranted by student planning requests.

DRAFTING

120 Technical Graphics (2-3)
3 hrs. Fall, Winter
A survey course in general technical drafting. Course content encompasses technical sketching, multiview drawing, sectional views, size description, developments, pictorial drawing, basic graphic analysis, and technical design.

226 Industrial Graphics (1-5)
3 hrs. Fall, Winter
A study of industrial graphic practices and standards. Course content includes design sketching, view analysis, sections, primary and secondary auxiliaries, metric design communication, dimensioning and tolerance specifications, fasteners, pictorials, and basic principles of descriptive geometry. New developments in standards and drafting are presented as they relate to industry. Prerequisite: ITE 120 or equivalent.

227 Technical Sketching (1-5)
3 hrs. Winter
A study of freehand and mechanical methods of presentation drawing illustration. Primary consideration is given to isometric, dimetric, trimetric, oblique, angular, and parallel perspective pictorials. Emphasis is placed on illustration techniques and media including shades and shadows, pencil and ink rendering, shading films, airbrush and reproduction design consideration. Prerequisite: ITE 120.

326 Advanced Industrial Graphics (1-5)
3 hrs. Fall
Advanced technical work for the specialist in drafting and design. Included are metric design production drawing, applications of descriptive geometry, checking, mechanical component design, and computer graphics applications. Current developments in the field of drafting and their impact on industrial operation will be studied. Prerequisite: ITE 226.

520 Architectural Graphics (1-5)
3 hrs. Fall, Winter
A graphic study of architectural plans and details of frame and masonry residential structures. Emphasis is placed on residential planning and design principles. Plans produced and studied include preliminary studies, floor plans, foundation plans, plot plans, electrical plans, elevations, and all necessary details and specifications for residential construction. Prerequisites: ITE 120 or equivalent and ITE 105 (may be taken concurrently).

522 Laboratory Practices in Drafting (1-3)
2 hrs. Winter, Spring
Methods of planning for drafting operations. Emphasis is placed on a study of drafting media and equipment, accumulation of resource materials, review of reference standards, product and system design communication, drafting training methods and requirements, and independent study of specialty areas in drafting. Prerequisites: twelve hours credit in drafting and junior classification.

523 Advanced Drafting Practice (1-3)
2 hrs. Fall, Winter
Advanced laboratory experiences in mechanical, architectural, and machine drawing in conjunction with study of current technical literature. Written reports required. Advanced instruction in engineering drawing and descriptive geometry included.

524 Commercial Architectural Design (1-3)
2 hrs. Summer—Odd Years
Basic experience in designing light commercial structures. Emphasis placed on planning, traffic flow and area utilization, exterior design, structural materials, and structural details. Prerequisite: ITE 520.

525 Architectural Perspective and Rendering (1-3)
2 hrs. Spring—Even Years
Intensive study of angular and parallel perspective. Emphasis placed on entourage and rendering techniques in preparing architectural presentation drawings.

GRAPHIC ARTS AND PRINTING MANAGEMENT

150 Graphic Arts (2-3)
3 hrs. Fall, Winter, Spring
An introductory course to become familiar with the large area of graphic arts. Work is undertaken in hand composition, presswork, bindery, screen, offset printing, etc. A thorough study of all graphic arts processes used in industry is undertaken. Advantages and best uses as well as disadvantages and limitations are considered for each process.

250 Typographic Design (1-5)
3 hrs. Fall, Spring (Based on Demand)
The principles of design and typography are studied and applied to the completion of a printed job. Practical experience in the elements of design, tools, and methods used by the graphic artist are included. Prerequisite: ITE 150.

253 Lithographic Stripping and Plate-making (2-4)
3 hrs. Winter
Emphasis will be placed on determining correct page impositions. Register requirements, step and repeat procedures, color stripping, proofing and other related skills will be covered. Lithographic plate making and processes will be emphasized. Flexographic plate and gravure cylinder making will also be included. Prerequisites: ITE 150 and sophomore standing.

254 Machine Composition (1-5)
3 hrs. Fall, Winter, Spring (Based on Demand)
A study of the total field of computerized machine composition. Advantages, limitations, and operation of photo composition methods and equipment will be stressed. Economic and planning implications of the composition area will also be explored. Prerequisite: ITE 150.

258 Introduction to Flexography (3-0)
3 hrs. Winter, Spring (Based on Demand)
A study of the flexographic printing process focusing on the process, application, technology, and hardware. Prerequisite: ITE 150.

350 Photolithographic Techniques (1-5)
3 hrs. Fall, Spring (Based on Demand)
The fundamentals of reproduction photography, darkroom techniques, photo processes, and stripping techniques will be stressed. Information relating to line photography, film, lenses, copy preparation, plate processing, and related darkroom equipment will also be presented. Prerequisite: ITE 150.

351 Lithographic Presswork (1-5)
3 hrs. Fall, Winter, Spring (Based on Demand)
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 multiple color processes, inks, and papers. Prerequisite: ITE 150.

358 Flexographic Presswork (2-4)
3 hrs. Fall
A lecture/lab course which emphasizes plate manufacture and mounting, inks, substrates, and flexographic press operation. Prerequisite: ITE 258.

359 Introduction to Gravure Printing (3-0)
3 hrs. Fall, Spring (Based on Demand)
A study of gravure printing focusing on the process, application, technology, and hardware. Prerequisites: ITE 150 and junior standing.

450 Advanced Presswork (1-5)
3 hrs. Winter, Spring (Based on Demand)
Provides the student with practical problems in makeready and reproduction of various types of forms for lithographic presses, and also provides an introduction to the flexographic printing process. Prerequisite: ITE 351.

451 Printing Processes (1-3)
2 hrs. Winter
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. Open only to students enrolled in Paper Science and Engineering.

452 Estimating (3-0)
3 hrs. Fall
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: upperclass standing.

459 Applied Gravure Technology (2-4)
3 hrs. Winter
A lecture/lab course which emphasizes cylinder manufacture, inks, substrates, and press systems. Prerequisite: ITE 359.

551 Half-tone Photo Processes (1-5)
3 hrs. Winter, Spring (Based on Demand)
Emphasis on halftone reproduction and related photo techniques. Includes duotones, basic color, and mechanical dropouts will be included. Color separation theory and processes will be stressed. Prerequisite: ITE 350.

552 Estimating (2-0)
2 hrs. Winter
Continuation of Estimating 452. Special emphasis on use of printing industry production standards in pricing printed materials. Prerequisite: ITE 452.
Woodwork and Building Construction

100 General Woodworking (2-3)
3 hrs. Fall, Winter, Spring (Based on Demand)
A survey of woodworking with laboratory experiences and skill development and knowledge in planning and layout, lumber, purchasing lumber and plywood, methods of fastening, elementary finishing methods, and sizing stock and joinery with hand tools, electric portable tools, and machines.

105 Introduction to Building Practices (1-2)
2 hrs. Fall, Winter
A survey of the technologies in management, personnel, materials, products, processes, and production in the field of construction. Emphasis is placed on the materials and practices used in building a structure. Blueprint reading, utilities, and financing are also included.

200 Machine Woodwork (1-5)
3 hrs. Fall, Winter
Introduction to furniture design, construction, and finishing. Development of skills and knowledge on advanced joinery using industrial machines and methods with discussion on the planning and purchasing of equipment. Prerequisite: ITE 100.

201 Wood Finishing (1-3)
2 hrs. Winter
Finishing materials and their characteristics, equipment and methods of application, finishing schedules, and finishing characteristics of different species of wood. Prerequisite: ITE 200.

205 Concrete, Masonry Construction (2-3)
3 hrs. Spring
Covers load bearing characteristics of soils, areas relating to the use of concrete, brick, block and masonry such as footings, foundations, masonry exteriors and fireplaces. Both residential and commercial applications are covered. Prerequisite: ITE 205.

206 Construction of Wood Frame Structures (2-3)
3 hrs. Fall
Covers on-site building and prefabrication of floor, wall and roof framing, exterior doors, windows, roofing, siding, insulation, and preparation for interior wall coverings, trim, and cabinets. Post and beam, pole, and heavy timber construction as well as prefabrication of wood frame structures are also included.

207 Interior Trim and Finishing (2-4)
3 hrs. Winter
Development of skill and knowledge related to installation of prefabricated cabinets, wall coverings, finish flooring, fitting and hanging doors, interior trim, movable partitions, ceramic tile, interior painting and finishing. Prerequisite: ITE 200.

300 Upholstering and Woodturning (1-5)
3 hrs. Fall
Mass production of frames and upholstery including springing, padding, and the application of the final cover. Skill development and knowledge in advanced techniques of woodturning including chucking, plug turning, mandril turning, and special applications. Prerequisite: ITE 100 or 200.

302 Wood and Related Materials for the Interior Designer (2-4)
3 hrs. Winter
This course is designed for interior design students as an introduction to woodworking materials, tools, and processes including related information and practical experience on both hand and machine tools. Information and techniques on both hand and machine tools will also be covered.

306 Commercial Construction Methods (3-0)
3 hrs. Fall
Covers earthmoving, excavating, dewatering, drainage, and paving. Sites used for material storage, traffic control, scaffolding, and use of heavy construction equipment are also included. Erection of buildings peculiar to commercial construction will be studied including specialized foundations, reinforced concrete framework, prestressed and post-tensioned concrete, structural steel framing, vertical transportation, curtain walls, and membrane type roofs.

307 Plumbing and Electrical Practices (2-3)
3 hrs. Winter
Experience in the design, planning, and installation of the electrical and plumbing utilities. Both residential and commercial applications are covered. Prerequisite: ITE 206.

308 Application and Administration of Building Codes (2-2)
3 hrs. Fall
A study of the application of model codes to residential and commercial structures, non-structural 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: ITE 105.

309 Heating, Ventilation, and Air Conditioning (2-2)
3 hrs. Fall
The design and sizing aspects needed to plan a HVAC system are covered. Typical systems, principles of air conditioning, and heat pumps are included. Heat loss and gain calculations and code standards are practiced. Prerequisite: ITE 206.

403 Specifications and Estimating for Building Construction (2-2)
3 hrs. Fall
Covers organization and interpretation of specifications, includes methods of estimating and cost control of both residential and commercial structures. Prerequisites: ITE 205, 206.

409 Scheduling and Project Management of Building Construction (2-2)
3 hrs. Fall
Covers organization and management of residential and commercial construction firms. Methods of planning and scheduling construction are included. Prerequisites: ITE 205, 206, and 306.

500 Furniture Production (1-3)
2 hrs. Fall
Production of furniture, including the development of tooling and jig and fixture design for mass production of a piece of furniture. Students will match the veneers and lay up the plywood for this piece of furniture. Prerequisite: ITE 200.

502 Wood Technology (1-3)
2 hrs. Summer
Experience in and study of cellulose materials and their use in construction and manufacturing, including the characteristics of lumber, hand-made wood products, the materials related to the fabrication of wood products, applied research and testing. Prerequisite: ITE 100.

505 Problems in Woodworking (2-2)
2 hrs. Spring, Summer
Advanced laboratory experiences in woodworking. Content selection, project building, and new techniques are covered. Written reports based on current literature are required. Areas covered depend on individual needs.

Metals

130 General Metals (2-3)
3 hrs. Fall, Winter
The technology of modern metalworking principles and practices including the areas of hot and cold cutting, joning, forming, fabricating, and finishing techniques utilizing both hand and machine processes.

234 Machine Shop (1-5)
3 hrs. Fall, Winter
Modern metal machining techniques involving theory and practice in the application of machine tool metalworking principles.

235 Machine Tool Metalworking (1-5)
3 hrs. Winter
Advanced theory and practice in the application of machine tool metalworking processes and procedures with emphasis on plastic tooling for plastic minor. Prerequisite: ITE 234.

334 Metal Forming and Finishing (1-5)
3 hrs. Fall
Basic principles and practices in forming and fabricating sheet metal products. Included are standard sheet metal practices, press brake and punch press operation and set-ups, metal finishing with standard spray equipment, and materials testing. Prerequisite: ITE 130.

335 Patternmaking and Foundry (1-5)
3 hrs. Spring
Basic principles, techniques, and materials used in pattern construction. Theory and practice in metal casting principles and procedures using green sand, CO2, investment, centrifugal, and shell processes. Prerequisites: ITE 100, 130.

336 Hot Metalworking (Welding) (1-5)
3 hrs. Winter
338 Advanced Metalworking (1-5)  
3 hrs. Fall, Winter  
Metallurgy involving brass, copper, and aluminum etching, spinning, tooling, raising, and other optional art metal activities based on individual needs of students enrolled.  
Prerequisite: ITE 130.

530 Research in Machine Shop Practices (0-4)  
2 hrs. Spring, Summer  
For teachers to study and develop advanced techniques in machine technology

538 Problems in Metalworking (1-3)  
2 hrs. Spring  
Practical laboratory experiences in forging, foundry, heat treating, machine shop, and arc and acetylene welding. Emphasis on methods of selecting and developing course materials for junior and senior high school students. Course content adapted to meet individual needs. Prerequisite: ITE 234.

A study of plastics to develop an understanding of plastic materials, their properties, applications, and processes. Technical information and laboratory experiences based on the cutting, shaping, forming, molding, and casting of thermoplastic and thermosetting materials. Emphasis will be placed on the application of plastics in the junior-senior high school programs.

274 Plastics Production Processing (1-5)  
3 hrs. Winter  
Experiences in forming processes such as injection, compression, vacuum, and rotational molding. Effects of mold design on flow and stress characteristics, heat and pressure on dimensional accuracy, and process of product function and economy. Prerequisite: ITE 174.

578 Plastics Technology (1-3)  
2 hrs. Summer  
Comprehensive study of plastic materials and processes and applications of thermoplastic, thermosetting, and selected synthetic materials. Product development emphasizes vacuum forming, compression, extrusion, injection, blow molding, lamination, casting, reinforcing, foaming, coating, and general fabrication.

Power-Auto*  
* (Courses in Auto Mechanics can be obtained from the Transportation Technology Department or by transfer from community colleges.)

180 Power Technology (2-3)  
3 hrs. Fall, Winter, Spring—Odd Years, Summer—Even Years  
A study of energy sources, energy conversion devices, and power transmission. Experience with small engines and an introduction to alternative energy systems.

290 Applied Energy and Power (1-5)  
3 hrs. Winter  
The application of mechanical, electrical, and fluid power principles to alternative energy systems. Economic and environmental comparisons of renewable and nonrenewable resource use are included. Prerequisite: ITE 180.

582 Applied Fluid Power (1-3)  
2 hrs. Winter  
Deals with fluid power development, transmission, and control systems. Laboratory experience requires application of fluid power to a manual or electrically powered machine.

Electricity-Electronics*  
* (Additional courses in electricity-electronics can be obtained from the Electrical Engineering Department or by transfer from community colleges.)

160 Basic Electricity (2-3)  
3 hrs. Fall, Winter, Spring—Odd Years, Summer—Even Years  
Theoretical and practical applications of basic electrical principles. The cause, effects, and control of electrical currents in circuits will be discussed and demonstrated. Practical experiences will include wiring, experimentation, repair, and maintenance of electrical equipment.

360 Electronic Servicing Techniques (1-5)  
3 hrs. Winter  
Designed to round out technical competencies of students to service electronic equipment. Laboratory problems will point toward individual needs in fundamental applications of electronic test instruments in diagnosing malfunctions in electronic equipment. Also included are fundamentals of ham radio. Prerequisite: 3 hrs. of electricity-electronics.

360 Laboratory Practices in Electricity-Electronics (1-5)  
3 hrs. Fall  
Designed for laboratory teachers of electricity-electronics. Emphasis will be placed on textbook selections, course materials, methods, and instructional devices. Laboratory practice will be provided in applying techniques and developments to teaching.

560 Problems in Electricity/Electronics (1-3)  
2 hrs. Fall, Winter, Spring—Odd Years  
Course is designed to select specific areas in electricity/electronics, and to study in depth current developments and industrial practices in these areas.

561 Industrial Practices in Electricity/Electronics (0-4)  
2 hrs. Spring, Summer  
Opportunity to analyze and interpret current developments in electricity and electronics. Research of a specific area and a report are required.

Professional Industrial—Vocational Education

342 Course Planning and Construction (3-0)  
3 hrs. Fall, Winter  
See Vocational Education (VE) under the Division of Applied Sciences in the College of Engineering and Applied Sciences for course description and prerequisites.

344 Teaching Practical Arts and Vocational Education (3-0)  
3 hrs. Fall, Winter  
See Vocational Education (VE) under the Division of Applied Sciences in the College of Engineering and Applied Sciences for course description and prerequisites.

345 Plan and Organization of a School Shop (2-0)  
2 hrs. (Continuing Education)  
Planning and organizing the school shop. Covers physical needs, shop layout, purchasing equipment, establishing a supply routine, planning personnel organization, and shop management. Prerequisites: Junior and consent of department.

444 Independent Study in Industrial Education  
1-4 hrs. Fall, Winter, Spring, Summer  
An independent study arranged in consultation with a study supervisor. Approval of study program required prior to registration. Prerequisites: 9 hrs. of major area and instructor’s permission.

512 Principles of Vocational Education (3-0)  
3 hrs. Fall, Summer  
See Vocational Education (VE) under the Division of Applied Sciences in the College of Engineering and Applied Sciences for course description and prerequisites.

545 Safety Practices and Compliance (2-0)  
2 hrs. Summer  
Accident prevention, safeguarding, and safe operation of industrial equipment emphasized. OSHA and MIOSHA legal responsibility and compliance treated.

598 Readings in Education/Technology  
2-4 hrs. Fall, Winter, Spring, Summer  
Directed individual or small group study of topics or areas not otherwise treated in departmental courses. Consent of department required.

General Industrial

170 Industrial Crafts Techniques (2-3)  
3 hrs. Fall, Winter, Spring—Even Years  
Introduction to the crafts area including art metal, leather, woodcarving, and plastics. Applications and procedures will be stressed.

190 Childhood/Adulthood Crafts and Adapted Techniques (2-3)  
3 hrs. Fall, Winter, Spring, Summer  
Studies of crafts with emphasis on elementar therapeutically, and recreational activities with basic techniques and adaptive techniques in wood, leather, metal, graphics, electricity, and plastics.

276 Industrial Arts Design (1-3)  
2 hrs. Fall, Winter, Spring  
A laboratory course dealing with functional, material, and visual requirements for products. Emphasis is on design practices as they relate to products and products in a variety of natural and synthetic materials.

312 Industrial Field Experience  
3 hrs. Fall, Winter, Spring, Summer  
A cooperative education program involving a semester of full-time (or part-time equivalent) planned and supervised industrialfield experience. A written report of industrialfield activities is required. May be re-elected for a total of twelve hours credit.

370 Modern Manufacturing (2-2)  
3 hrs. Fall, Winter, Spring  
A study of the essentials and elements of industries such as manufacturing, transportation, construction, and communication. Laboratory experiences include research reports and the development and mass production of related products.
Military Science (MLSC)

LTC Roger D. Manning, Chair
MAJ J. Bradley Johnson
CPT Gregory J. Bakian
CPT Michael Daly
CPT Ronald Nicholl
CPT Paul J. Nobels
SFC Edward Noonan

The Department of Military Science offers courses intended to develop leadership and managerial skills and to broaden students’ knowledge of the role of the military in society. The department offers two year and four year programs. The four year military science program is divided into a basic course (first two years) and an advanced course (last two years). Selected advanced course students become officers in the Army Reserve, National Guard, or Regular Army upon completion of the program. Students may elect to pursue a minor in military science. ROTC scholarships are available to students, and a student need not be enrolled in the military science program to compete for a ROTC scholarship.

The chair of the department and all instructors are officers of the United States Army assigned to West Point by permission of the University. They administer the military science program and conduct all classes offered by the department. The government provides uniforms and textbooks for all advanced course students as well as additional financial assistance for students in the last two years of the program.

Two Year Program

For the students transferring into the University and currently enrolled students who have not taken military science classes, a two year program is available. Students enter this program by applying for attendance at a six week basic summer camp. After successful completion of basic summer camp is substituted for the basic course. Therefore, the student has only to complete the advanced course requirements while he or she is finishing the overall degree requirement in order to be eligible for a commission. Students in the two year program are eligible for scholarships, financial assistance ($400 per month), and free textbooks for military science classes. See the advanced course for further information.

At the basic summer camp, the student is trained, fed, and housed at the expense of the government. The student also receives travel pay plus a salary of approximately $40 per day. Contact the military science department for details.

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). 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 to provide knowledge of leadership skills needed by military officers. Students completing the basic course have an opportunity to be considered for the advanced course program and obtain a commission in the active Army or Reserve Components. ROTC scholarship students take at least one military science course each semester. First year students must take PEGN 175 (MLSC 120 or MLSC 220) and either MLSC 101 or MLSC 204. Sophomore students take MLSC 102 during the fall and MLSC 202 during the winter. Exceptions must be approved by the chair of the department. Students who participate as cadets are expected to be physically qualified, of good moral character, and sign an oath of loyalty to the United States. Students who have had three years of junior ROTC (High School ROTC) 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.

Military Science Minors

A department minor slip is required.

A. Four Year Program

<table>
<thead>
<tr>
<th>Year</th>
<th>MLSC Courses</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Freshman Year</td>
<td>MLSC 101 or MLSC 204</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>PEGN 175</td>
<td>3-4</td>
</tr>
<tr>
<td>Sophomore Year</td>
<td>MLSC 102 and MLSC 203</td>
<td>4</td>
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<tr>
<td>Junior Year</td>
<td>MLSC 302 and MLSC 303</td>
<td>6</td>
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<tr>
<td>Senior Year</td>
<td>MLSC 401 and MLSC 402</td>
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<td>MLSC 400</td>
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</tbody>
</table>

B. Two Year Program

Prerequisite: Veteran, or 3 years JROTC, or Basic Camp, or approval of department chair.

Total: 21-22 hours
Course Descriptions
(Courses described in italics are approved for handicap access. Numbers following course title indicate hours of lecture and laboratory instruction. Course content is adapted to meet the individual needs of the student. Prerequisite: Approval of department chair.)

Advanced Course
302 Fundamentals of Tactical Employment and Land Navigation (3-0)
A study of tactical considerations and employment of small military units to include their movement based on topographic map reading and land navigation techniques. Prerequisite: Approval of department chair.

303 Advanced Concepts of Tactical Employment (3-0)
A study of tactical situations. Development of planning and coordination sequences applicable to the employment of military resources. Prerequisite: MLSC 302 or consent of department.

390 Advanced Military Leadership (3-0)
A six-week training session designed to supplement campus instruction by providing the cadet practical experience and instruction in tactical and technical subjects with specific emphasis on leadership training in the form of problem analysis, decision-making and troop-leading experiences. Prerequisites: MLSC 302, 303.

400 Military History
3 hrs. Fall, Winter
Students will enroll in either HIST 319 (America and War), or HIST 579 (War in the Modern World), or HIST 320 (History of War), or a department approved course.

401 Command and Staff (3-0)
3 hrs. Fall
A comprehensive course in the fundamentals of military administrative management and military law. Prerequisites: MLSC 302, MLSC 303 or approval of department chair.

402 Advanced Command and Staff (2-2)
2 hrs. Winter
A continuation of MLSC 401 with increased emphasis on advanced command and staff principles and procedures. Course content includes a survey of military law, the Army Officer Efficiency Rating System, personnel counseling/management problems, planning and conducting military instruction, and ethics and professionalism required of military leaders. Prerequisite: MLSC 401

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.

R.O.T.C. Scholarships
R.O.T.C. scholarships that provide for tuition, fees, books, and a subsistence allowance of $100 per month are available. See military science in the Scholarships section of the catalog.
Vocational Minors

Students majoring in non-vocational teacher preparation programs may earn vocational certification by completing one of the following vocational minor sequences in consultation with the appropriate counselor:

**BUSINESS EDUCATION**

Accounting and Computing—27 hours (4,000 work hours are required which may necessitate an internship or work experience program.)

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<thead>
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<th>Cr. Hr.</th>
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<tbody>
<tr>
<td>BIS 102 Introduction to Information Processing</td>
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<tr>
<td>ACTY 210 Principles of Accounting</td>
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<tr>
<td>ACTY 211 Principles of Accounting</td>
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<tr>
<td>BIS 260 Business EDP Systems and Procedures I</td>
</tr>
<tr>
<td>BIS 261 COBOL</td>
</tr>
<tr>
<td>ACTY 310 Financial Accounting I OR ACTY 322 Managerial Accounting OR ACTY 324 Income Tax Accounting</td>
</tr>
<tr>
<td>VE 342 Course Planning and Construction OR VE 344 Teaching Practical Arts and Vocational Education</td>
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<tr>
<td>VE 512 Principles of Vocational Education</td>
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<tr>
<td>VE 543 Coordination Techniques in Cooperative Education</td>
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Business/Data Processing—27 hours (4,000 work hours are required which may necessitate an internship or work experience program.)

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<th>Cr. Hr.</th>
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<tbody>
<tr>
<td>BIS 102 Introduction to Information Processing</td>
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<tr>
<td>CS 111 Computer Programming I</td>
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<tr>
<td>BIS 260 Business EDP Systems and Procedures I</td>
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<tr>
<td>BIS 261 COBOL</td>
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<tr>
<td>BIS 264 Report Program Generator (RPG)</td>
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<tr>
<td>BIS 360 Business EDP Systems and Procedures II OR CS 223 Computer Organization</td>
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<tr>
<td>VE 342 Course Planning and Construction OR VE 344 Teaching Practical Arts and Vocational Education</td>
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<tr>
<td>VE 512 Principles of Vocational Education</td>
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<td>VE 543 Coordination Techniques in Cooperative Education</td>
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**GENERAL EDUCATION DISTRIBUTION PROGRAM—40 hours**

(35 hrs. plus 5 hrs. from College of Arts and Sciences. Courses with an * are approved for General Education. Two courses at 300-500 level are required.)

<table>
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<tr>
<th>AREA</th>
<th>Cr. Hr.</th>
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<tbody>
<tr>
<td>I, II, III</td>
<td>Humanities and Social and Behavioral Sciences</td>
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<tr>
<td>IV</td>
<td>Natural Sciences and Mathematics</td>
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<tr>
<td>V</td>
<td>Non-Western World</td>
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<tr>
<td>Optional Electives</td>
<td>No Min.</td>
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</tbody>
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**PHYSICAL EDUCATION—2 hours**

**TOTAL** for graduation—125-128 hours
Course Descriptions

Numbers following course title indicate hours of lecture and laboratory per week during a semester (lecture hours-laboratory hours).

342 Course Planning and Construction (3-0)
3 hrs. Fall, Winter
Principles of analyzing, selecting, and arranging instructional materials for instruction purposes. Lesson plans, unit plans, and complete courses of study are included.

344 Teaching Practical Arts and Vocational Education (3-0)
3 hrs. Fall, Winter
Covers all aspects of teaching unique to practical subject laboratory instruction. Included are the teacher’s role, laboratory instruction material, laboratory teaching methods, evaluation techniques, and laboratory administration and management.

512 Principles of Vocational Education (3-0)
3 hrs. Fall, Summer
The place and function of the practical arts and vocational education in the modern school and the fundamental principles upon which this work is based. For teachers of business, distributive education, home economics, industrial subjects, office subjects, and for administrators. For upperclass and graduate students.

542 Occupational Education (2-0)
2 hrs. Summer
Planning for wage earning programs at the secondary and adult levels.

543 Coordination Techniques in Cooperative Education (3-0)
3 hrs. Fall, Spring
This is a study of duties and responsibilities of the teacher-coordinator. The organization and establishment of training programs, supervision of trainees on the job, development of individual training programs, establishing working relationships between school, business, and home, and participation in activities in the community, especially adapted to prospective coordinators.
Academic Units:

Art
Dance
Music
Theatre

The College of Fine Arts offers a variety of curricula and subjects in the principal interest areas of the visual and performing arts. Three undergraduate degrees in the arts are offered: Bachelor of Science and Bachelor of Arts majors in Art, and a Bachelor of Fine Arts in one of the following concentrations: art history, sculpture, ceramics, textiles, graphic design, printmaking, photography, jewelry and metalsmithing, and painting and watercolor. Each program is designed to prepare students for graduate or professional work. One may also elect an art major with certification to teach art at the elementary and secondary levels.

The Department of Dance offers two undergraduate degrees: Bachelor of Arts in applied dance, with a major in either contemporary dance or ballet; and a Bachelor of Fine Arts degree.

Three undergraduate degree programs in music are available: a Bachelor of Music with majors in applied music (performance), composition, jazz, music education, music history, music theatre, music theory, and music therapy; a Bachelor of Science with a major in music and a minor in elementary education, and a Bachelor of Arts with a major in music and a minor in one of the departments in the College of Arts and Sciences. Teacher certification is earned in the music education and elementary education programs.

Theatre programs lead to the Bachelor of Arts and Bachelor of Science degrees, both of which provide the option to earn certification to teach theatre at the secondary level. The department also participates with other University departments in offering a music theatre program, and a theatre-as-an-elective option.

Students are encouraged to inquire about curricular combinations not listed specifically in the catalog such as arts management and other interdepartmental programs.

In the belief that arts understanding, involvement, and appreciation are an important part of liberal education, the College of Fine Arts offers many opportunities for the non-arts major to participate in applied, theoretical, and appreciation curricular and co-curricular activities, such as general art and art history courses, dance, musical ensembles, and theatre productions.

The following list of designated courses may be used to fulfill the 70 hour requirement for the Bachelor of Arts degree:

**Art**

103 Theory of Art
120 Introduction to Art
220 History of Art
221 History of Art
520 Independent Study in Art History
521 Topics in Art History
581 History of Ancient Art
583 History of Medieval Art
585 History of Renaissance Art
586 History of Baroque Art
588 History of 18th Century Art
589 History of 20th Century Art 1900-1945
590 History of 20th Century Art 1945 to Present
591 History of Prints
593 History of American Art
597 History of Modern Architecture

**Dance**

100 Foundations of Dance
200 Dance History and Philosophy
300 Dance and the Related Arts

**Music**

270 Music History and Literature
271 Music History and Literature
360 Style Analysis
572 Baroque Music (1600-1750)
573 Classical Music (1750-1800)
574 Romantic Music (1800-1910)
577 Symphonic Literature
578 Chamber Music Literature
579 Operatic Literature
581 Choral Music Literature
582 Western Music Before 1600
583 Jazz History and Literature

**Theatre**

100 Introduction to Theatre
175 Script Analysis
370 Theatre History I
371 Theatre History II
570 Development of Theatre Art

The Department of Art offers many programs with various purposes and objectives. These are described under the heading of each program.

The department is accredited by the National Association of Schools of Art and Design and affiliated with the College Art Association and subscribes to the recommendations of these organizations. The various programs 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 many exhibitions, lectures by visiting artists, a student-operated gallery, and individual studios for advanced BFA candidates. There are approximately 400 undergraduate and 30 graduate art majors active during the academic year. Approximately 80 art degrees are awarded annually.

**Programs**

The Department of Art offers programs leading to the following three degrees: Bachelor of Fine Arts with a major in one of the areas of the department; Bachelor of Arts or Bachelor of Science with a major in art; Bachelor of Science with a major in art teaching. All three 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., B.S., or B.F.A. degrees.
The Department of Art also offers courses for students in other areas including non-art major courses in Drawing, Acrylic Painting, Printmaking, Sculpture, Ceramics, Jewelry, Watercolor, and Textile Art. Two programs satisfying the minor requirements of other curricula are also offered. For specific information see the description of each program.

Transfer Credit
Transfer students are required to submit a portfolio for transfer credit evaluation of art courses from other institutions one semester prior to enrollment. The application for admission as an art major includes the transfer evaluation procedure. For portfolio requirements please write to: Screening Committee, Department of Art.

Transfer credit is granted for all courses taken at accredited institutions either for specific WMU equivalent courses or as general art credit.

Advising
All art majors and minors are required to see an art adviser as soon as they are on campus and at least once each Fall and Winter semester thereafter. To make an appointment please call (616) 383-6026.

Miscellaneous
Grading  Art majors and minors receiving a grade below a “C” in a required course must repeat the course.

Exhibition Requirement  Each Bachelor of Fine Arts major must present a graduating exhibition as stated in Art 413 in the B.F.A. degree requirements. The B.F.A. candidate is to arrange such an exhibition in consultation with their major adviser. 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 413.

Studies  Advanced undergraduates are occasionally given individual studies. All other students may work in the regular classroom studios at night and on Saturdays. The department and its instructors cannot be responsible for student work left in studios after the end of each semester or term. Studio classes are usually limited to 15 to 20 students.

Programs
Bachelor of Fine Arts  Degree/Major in a Specific Area

74 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 a specific application to a departmental committee for admission to B.F.A. candidacy in a specific major area after completing 30 hours in art, one semester residency in the department, and at or above the 400 level in the area they are applying to. Applications will be considered each November and March.

Major areas: ceramics, graphic design, jewelry, and/or metalsmithing, painting, watercolor, photography, printmaking, sculpture, textile design, art teaching. (Art teaching majors must complete the requirements of one of the studio majors in addition to the certification requirements of the College of Education.)

The requirements in the art curriculum of the College of Fine Arts have to be satisfied. Seventy-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 program (101, 102, 103, 104, 105)
- 15 hours in Art History including 220, 221
- 6 hours in Advanced Drawing (210, 310)
- 2 hours in the Art Seminar (425)
- 15-24 hours in the major area (example: Painting 240, 340, 440, 540, etc.)
- 11-19 hours in other elective and required art courses determined in consultation with the major adviser
- 2 hours in Graduate Presentation (413). Approval of the presentation by a reviewing committee and submission of slides is necessary for the granting of the B.F.A. degree.

Art Major
Bachelor of Arts or Bachelor of Science 52 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 with courses in specific media for non-art majors and can satisfy the minor requirements of the liberal arts and sciences curricula. A minor slip is required. The 18 credit hours are distributed as follows:

- 15 hours in the basic program (101, 102, 103, 104, 105)
- 9 hours in Art History (220, 221, elective)
- 6 hours in Advanced Drawing (210, 310)
- 9 hours in any one area of concentration
- 15 hours in Art electives

Art Teaching Major
Bachelor of Science 61 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.

Areas of concentration for this program include: ceramics, graphic design, jewelry, and/or metalsmithing, painting/watercolor, photography, printmaking, sculpture, and textile design.

The requirements of the secondary curriculum of the College of Education must be satisfied. Sixty-one credit hours in art satisfy the major and minor requirements of this curriculum and are distributed as follows:

- 15 hours in the basic program (101, 102, 103, 104, 105)
- 9 hours in Advanced Drawing (210)
- 9 hours in Art History (220, 221, elective)
- 12 hours in Art Education (252, 352, 452, 552)
- 12 hours in one area of concentration
- 10 hours in elective art courses, determined in consultation with the art adviser.

Art Teaching majors must enroll in Art 252 in the first semester of the sophomore year and continue taking one art education course in each subsequent semester. This is necessary in order to complete the directed teaching in the senior year and complete the degree in a four-year span.

One semester of directed teaching in art, preferably in both elementary and secondary situations.

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 adviser to pre-plan a complete program before completing any art courses. A minor slip is required.

- 15 hours in the basic program (101, 102, 103, 104, 105)
- 9 hours in art electives, including ART 252, and 352 for education majors or minors.

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 adviser.

Art Courses for Non-Art Majors or Minors

Elementary education majors are advised to take ART 130, 140, or 150, except for those students in the integrated creative arts minor, who are required to take ART 200. Any course with no prerequisites may be taken by non-art students. Those seeking a broadly inclusive studio experience in art are advised to take ART 130 and/or 140. Further recommended courses in specific media for non-art majors include Drawing, Acrylic Painting, Printmaking, Sculpture, Ceramics, Jewelry, Water color, and Textile Art. The Art Survey 120, ART 130, 140, and Art History 220 and 221 are open with no prerequisites to non-art majors and can satisfy the humanities requirements of General Education.
Course Descriptions

(Course descriptions in italics are approved for General Education purposes.)

101 Foundation Drawing
3 hrs.
The visual elements and principles of organization in relationship to perceiving both flat and illusionary space.

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.

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 and minors only.

104 Foundation Drawing
3 hrs.
Continuation of ART 101 with emphasis on composition in dark and light. Exploration of the expressive possibilities of the various drawing media oriented towards future needs of art students. Prerequisite: ART 101.

105 Foundation 3D Studio
3 hrs.
The study and exploration of the major manifestations of three-dimensional form in space. Exploitation and manipulation of various materials that articulate form by means of line, plane, volume and light.

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, 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.

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 degree of education student who wishes to have some experience in 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.

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.

200 The Creative Process through Art
4 hrs.
A topical introduction to the visual arts: paint and drawing media oriented towards future needs of art students. Prerequisite: ART 101.

201 Non Art Major: Drawing
3 hrs.
This course is a non-professional enrichment experience in basic drawing. The course objectives are 1) to learn basic drawing techniques and their relationships to various media such as graphite, charcoal, and conte crayon, 2) to learn proper usage of papers and drawing tools, and 3) to develop personal expression through drawing. Not applicable to art majors or minors.

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.

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.

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.

206 Non Art Major: Ceramics
3 hrs.
This course is a non-professional enrichment experience in basic Ceramics. The course objectives are 1) to learn the fundamentals of Ceramic construction, including coil building, and limits of clay as a material. A class fee will be charged for clay and glaze supplies. Not applicable to art majors or minors.

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.

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.

209 Non Art Major: Textile Arts
3 hrs.
This course is a non-professional enrichment experience in basic Textiles. The course objectives are 1) to learn fundamental on and off loom textile construction techniques, and 2) to explore other related techniques such as macrame, hooking, quilting, felting, and dyeing. A class fee will be charged for materials and supplies. Not applicable to art majors or minors.

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: Basic Program.

220 History of Art
3 hrs.
An historical survey of art from prehistoric ages to the Renaissance.

221 History of Art
3 hrs.
An historical survey of art from the Renaissance through the contemporary period.

230 Ceramics
3 hrs.
A course devoted to a survey of pottery process, including handbuilding, technical information and a limited experience with the potter's wheel. Prerequisite: Basic Program.

231 Sculpture
3 hrs.
Introduction to a wide range of sculptural concepts and techniques. Media explored include: bronze casting, plaster, clay modeling, welding/metal fabrication, wood/mixed media. An overview of contemporary sculptural aesthetics. The development of individual expressive possibilities is essential to this course. Prerequisite: Basic Program.

234 Textile Design
3 hrs.
An introductory survey of textiles to include weaving, spinning, stitching, hooking, macrame, silk screen printing, tye dye and batik. Prerequisite: Basic Program.
330 Intermediate Drawing
3 hrs.
Drawing as the study of form and as a conclusive aesthetic statement. Model available during approximately 1/2 of the class meetings. Prerequisite: ART 210

330 Ceramics
3 hrs.
Continuation of ART 230 with opportunity for concentration in the medium. Some experiment in glazing. Prerequisite: ART 230.

339 Metalsmithing
3 hrs.
Continuation of ART 239, broadening the design and technical experience. Prerequisite: ART 239.

340 Painting II
3 hrs.
Continuation of ART 240. Prerequisites: ART 240, 242, 310 or 242, and 310 concurrently.

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.

342 Watercolor
3 hrs.
Advanced problems in watercolor techniques to include composition. Prerequisite: ART 242, 240 or 240 concurrently.

343 Lithography
3 hrs.
An intermediate investigation of Lithography based on basic skills with the introduction of color printing and other advanced techniques. The artist-student should begin to discover methods and techniques adaptable and appropriate to his aesthetic intent. Prerequisite: ART 243.

345 Graphic Design
3 hrs.
The study and practice of graphic design for twodimensional media. Emphasis is placed on the conceptual development of geometric, figurative, and decorative imagery for posters, covers, promotional, magazine and newspaper advertising. Includes thematic development, graphic planning, comprehensive and finished art production. Prerequisite: ART 245.

346 Screenprint II
3 hrs.
An intermediate course continuing the investigation of basic and advanced screenprint stenciling 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.

348 Photography
3 hrs.
Introduction to the view camera, color processing/printing, and various studio lighting techniques involved in product photography. Emphasis is placed upon exploring the potential of color photography and the development of individual imagery. Prerequisite: ART 248 and ownership of a 35mm slr or 2 1/4 X 2 1/4 camera.

400 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.

410 Advanced Drawing
3 hrs.
Continuation of ART 310. Prerequisite: ART 310.

413 Graduating Presentation
2 hrs.
Preparation and presentation of graduating exhibition, portfolio, slides and oral examination or written thesis, with the assistance of the student’s major adviser. Evaluation by a Departmental reviewing committee. Prerequisite: Senior standing. B.A. candidacy.

425 BFA Seminar in Art
2 hrs.
The seminar investigates and evaluates contemporary topics and trends in art. Students will be exposed to how artists express their ideas through current and ongoing visiting artist programs, exhibitions and workshops. Students will be encouraged to select and develop their own research topic. Graded credit/no credit only. Prerequisite: BFA candidacy.

430 Ceramics
3 hrs.
Continuation of ART 330 with some experience in stacking and firing procedures. Prerequisite: ART 330.

431 Sculpture
3 hrs.
The advanced student explores the expressive possibilities of his or her own individual sculptural direction. A high level of concept and technique is expected. Prerequisite: ART 331 or consent of instructor.

434 Textiles
3 hrs.
Continuation of ART 334. Prerequisite: ART 334.

435 Multi-Media Art
3 hrs.
Various forms of art that deviate from conventional media, such as light, kinetic, and performance art. Prerequisite: permission of instructor.
521 Topics in Art History: Variable Topics
3 hrs.
Investigation of changing topics in art history in class or seminar sessions by advanced students. Course title varies from term to term. Prerequisite: ART 220, 221 for majors. None for other students. Repeatable for credit under a different title.

530 Ceramics
1-6 hrs.
Advanced work in ceramics on an independent basis. Prerequisite: ART 430. Repeatable for credit.

531 Sculpture
3 hrs.
Continuation of ART 431. Emphasis on bronze and aluminum casting related techniques. Prerequisite: ART 431. Repeatable for credit.

534 Textiles
3 hrs.
Continuation of ART 434 with advanced work in textile design. Prerequisite: ART 434. Repeatable for credit.

535 Multi-Media Art
3 hrs.
Continuation of ART 435. Prerequisite: Permission of instructor. Repeatable for credit.

538 Jewelry
3 hrs.
Continuation of ART 438; advanced work in jewelry processes. Prerequisite: ART 438. Repeatable for credit.

540 Painting IV
3 hrs.
Continuation of ART 440. Prerequisites: ART 410, 440. Repeatable for credit.

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 400 level printmaking course. Repeatable for credit.

542 Watercolor
3 hrs.
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisite: ART 442. Repeatable for credit.

545 Graphic Design
3 hrs.
Continuation of ART 445. Prerequisite: ART 445. Repeatable for credit.

548 Photography
3-6 hrs.
Professional development through research in advanced projects. Prerequisite: ART 448. Repeatable for credit.

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.

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, 352, 452, 552 and permission of the art education chairman. This course is open to graduate and non-degree level students.

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.

581 History of Ancient Art
3 hrs.
Selected topics from the art and architecture of ancient Egypt, the ancient Near East, the Aegean proto-Greek, Classical and Hellenistic Greece, Etruria, and Rome to the Early Christian period.

583 History of Medieval Art
3 hrs.
Discussion of art and architecture from the decline of the Roman Empire through the Gothic Period (3rd-13th Centuries).

585 History of Renaissance Art
3 hrs.
The development of art through the early Renaissance to the Late Renaissance and Mannerism. Some of the major artists discussed are: Giotto, Donatello, Da Vinci, Michelangelo, Titian, Van Eyck, Brueghel and Durer.

586 History of 19th Century 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.

589 History of 20th Century Art 1900-1945
3 hrs.
Emphasis is placed upon the roots of contemporary trends and the contributions of individuals to new modes of presentation. Major developments including Fauvism, Cubism, Expressionism, and Surrealism are discussed.

590 History of 20th Century Art 1945 to Present
3 hrs.
Major trends in art since World War II are discussed. Included are Abstract Expressionism, Pop and Op Art, the New Realists, and Conceptual Art.

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 19th century (Delaclor, Daumier, Toulouse-Lautrec). 20th century printmaking.

593 History of American Art
3 hrs.
Art in the United States from the Colonial Period to the present. Topics discussed are: Colonial portraiture and Copley; the evolution of 19th and 20th century painting, sculpture with emphasis on the work of Stuart, Cole, Bingham, Homer, Eakins, Ryder, Saint-Gaudens, Zorach, Marin, Pollock, and recent developments.
594 History of Afro-American Art
3 hrs.
Painting and sculpture in the United States by Americans of African ancestry from the Colonial period to the present. Includes examination of the African art background and the continuation of African art traditions and skills in America. Junior standing required.

597 History of Modern Architecture
3 hrs.
Major developments in architecture since c.1750 with emphasis on late 19th and 20th century developments in domestic and commercial architecture and city planning in the West and in Asia. Special consideration given the works and influences of Wright, LeCorbusier, and Mies van der Rohe.

592 History of Afro-American Art
Colonial period to the present. Includes examination of the African art background and the continuation of African art traditions. Painting and sculpture in the United States by Americans of African ancestry from the c.1750 with emphasis on late 19th and 20th century developments in domestic and commercial architecture and city planning in the West and in Asia. Special consideration given the works and influences of Wright, LeCorbusier, and Mies van der Rohe.

Dance (DANC)
Wendy Cornish, Chair
Jane Baas
Clara Gamble
Eugene Mills
Lindsey Thomas

Programs
Degrees: Bachelor of Arts, Bachelor of Science with major in dance, and Bachelor of Fine Arts in Dance.

Two majors and five minors are offered in the Department of Dance. They are:
1. Bachelor of Fine Arts (80 credit hours)
   a. Ballet Major
   b. Modern Major
2. Bachelor of Science/Bachelor of Arts (42 credit hours)
   a. Ballet Major
   b. Modern Major
3. Minor in Dance (24 credit hours)
   a. Ballet Minor
   b. Dance Education Minor
   c. Jazz Minor
   d. Modern Minor
   e. Theatrical Dance Minor

Introductory dance courses are offered for general students. One of the following dance courses may be used for one of the hours in the physical education requirement: DANC 101, 102, 103, 105, 106, 111, 112, 113 and 181. A $10.00 fee is required for each student enrolled in DANC 101 and 111 in order to provide a musical accompanist.

Advising
Dorothy U. Dalton Center, Room 3117; (616) 383-8019

Upon admission to the University, major and minor students should complete a declaration form with the Department of Dance under the advisement of the major 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 complete a major/minor slip with the advisor during the junior year and secure a graduation audit statement before registration for the final semester.

Major Studio Course Progression: It is expected that the dance major/minor will spend at least two semesters in each technique studio course. This duration of time is consistent with comparable study in the professional field. Therefore, a passing grade in a studio class does not imply automatic progression to the next level.

Jury: Dance Performance Major: Before the end of the Winter Semester of the first year, the student's technical progress will be evaluated by the dance faculty. The student will also be required to complete an oral examination. During the junior year, a second technical progress evaluation will take place, plus oral and choreographic juries.

Minors: Dance Education Minors must pass oral and dance education juries prior to student teaching. Dance Performance Minors have no jury requirements.

Scholarships: A variety of scholarships, awards and assistantships are available for new and current students. Awarded are selected by the faculty on the basis of outstanding achievement in the field and overall academic excellence. Applicants for New Student Scholarships must audition and interview with the faculty. For specific information, contact the Dance Academic Adviser.

Extra-University Study: Students are encouraged to study with professional concert dancers whenever possible and to afford themselves the opportunity for study with artists-in-residence on Western's campus for which a limited number of scholarships are available.

Handbook: The Department of Dance provides a handbook, Connections, for dance majors and minors as a supplement to the Undergraduate Catalog. Each major/minor is required to pick up a copy from the department secretary during the first week on campus.

Major/Minor Meeting: A departmental meeting is held during the second week of each Fall Semester to prepare the student for the academic year. Attendance is mandatory for all dance majors and minors.

Majors in Dance

Bachelor of Fine Arts (BFA) in Dance
Ballet of Modern Major
80 credit hours

Enrollment in the B.F.A. is contingent upon admission to the University and approval of the Department of Dance through audition. Audition information is available from the Department of Dance upon request. Students are urged to complete admission to the University by March 1.

A student must complete all General Education requirements for either the Distributive or the Integrated Program as outlined in this bulletin. The Dance Academic Adviser is available to help students with their general education requirements.

Required Courses in Technique and Ensembles—31 total hours

The BFA Ballet Major must complete twelve to sixteen hours in Ballet Studio courses (DANC 110, 210, 310), including at least four hours from DANC 310; four to eight hours at appropriate levels in Modern Studio courses (DANC 130, 230, 330), four to eight hours at appropriate levels in Jazz Studio courses (DANC 120, 220), and six to eleven hours from dance ensembles (DANC 540, 550, 560, 570).

The BFA Modern Major must complete twelve to sixteen hours in Modern Studio courses (DANC 130, 230, 330), including at least four hours from DANC 330; four to eight hours at appropriate levels in Ballet Studio courses (DANC 110, 210, 310); four to eight hours at appropriate levels in Jazz Studio courses (DANC 120, 220); and six to eleven hours from dance ensembles (DANC 540, 550, 560, 570).

In addition, all BFA students must complete the following requirements:

1. Bachelor of Fine Arts (80 credit hours)
2. Bachelor of Science/Bachelor of Arts (42 credit hours)
3. Minor in Dance (24 credit hours)
4. Bachelor Minor
5. Dance Education Minor
6. Jazz Minor
7. Modern Minor
8. Theatrical Dance Minor

A student must complete all General Education requirements for either the Distributive or the Integrated Program as outlined in this bulletin. The Dance Academic Adviser is available to help students with their general education requirements.

Required Courses in Technique and Ensembles—31 total hours

The BFA Ballet Major must complete twelve to sixteen hours in Ballet Studio courses (DANC 110, 210, 310), including at least four hours from DANC 310; four to eight hours at appropriate levels in Modern Studio courses (DANC 130, 230, 330), four to eight hours at appropriate levels in Jazz Studio courses (DANC 120, 220), and six to eleven hours from dance ensembles (DANC 540, 550, 560, 570).

The BFA Modern Major must complete twelve to sixteen hours in Modern Studio courses (DANC 130, 230, 330), including at least four hours from DANC 330; four to eight hours at appropriate levels in Ballet Studio courses (DANC 110, 210, 310); four to eight hours at appropriate levels in Jazz Studio courses (DANC 120, 220); and six to eleven hours from dance ensembles (DANC 540, 550, 560, 570).

In addition, all BFA students must complete the following requirements:
Bachelor of Science or Bachelor of Arts with a Major in Dance

Ballet or Modern
42 credit hours

A student must complete all General Education requirements for either the Distributive or the Integrated Program as outlined in this bulletin. The Dance Academic Adviser is available to help students with their general education requirements.

Required Courses in Choreography—9 total hours
- **DANC 180** Choreography I (Prereq: consent of adviser) 2
- **DANC 181** Dance Improvisation 1
- **DANC 280** Choreography II (Prereq: 180, 181) 2
- **DANC 380** Choreography III (Prereq: 280) 3
- **DANC 480** Graduating Presentation (Prereq: 380) 2

Required Courses in History/Philosophy—9 total hours
- **DANC 100** Foundations of Dance 2
- **DANC 200** Dance History and Philosophy (Prereq: 100) 2
- **DANC 300** Dance and Related Arts (Prereq: 200) 3
- **DANC 500** Special Studies in Dance History (Prereq: 300) 2

Eighteen hours from:
- **ANTH** Cultural Anthropology 3
- **ART** Studio Experience—2D 3
- **ART** History of Art 3
- **BMED** Introduction to Biomedical Sciences 3
- **ENGL** Thought and Writing 3
- **ENGL** Literary Interpretation 4
- **ENGL** Literature and Other Arts 4
- **ENGL** Practical Writing: Variable Topics 4
- **FREN** Basic French 4
- **GHUM** Direct Encounter with the Arts 3
- **HIST** Popular Art and Architecture in America 3
- **MGMT** Small Business Management 3
- **MUS** Non-Western Music 4
- **MUS** Music Appreciation: The Symphony 3
- **PHIL** Introduction to Philosophy 4
- **PHIL** Philosophy of Art 4
- **REL** Myth and Ritual 4
- **THEA** Introduction to Theatre 3

Bachelor of Science or Bachelor of Arts with a Major in Dance

Jazz Minor

Required Courses in Technique Hours
- **DANC 110** Ballet Studio I (Prereq: consent of adviser) 2
- **DANC 210** Ballet Studio II (Prereq: consent of adviser) 2
- **DANC 310** Ballet Studio III (Prereq: consent of adviser) 2
- **DANC 410** Jazz Studios (120, 220) Each 2
- **DANC 495** Kinesiology for the Dancer 3
- **DANC 585** Dance Production 2

Two hours, with consent of adviser, from:
- **DANC** Ballet Studios (110, 210, 310) Each 2
- **DANC** Modern Studios (120, 220, 320) Each 2
- **DANC** Ensembles (540, 550, 560, 570) Each 1-2

Elective: Five hours from courses in the Department of Dance, with the consent of the Dance Academic Adviser.

Dance Education Minor

Required Courses in Technique—11 total hours
- **DANC 106** Recreational 1

Four hours from the following courses at the appropriate level:
- **DANC 130** Modern Studio I (prereq: consent of adviser) 2
- **DANC 230** Modern Studio II (prereq: consent of adviser) 2
- **DANC 330** Modern Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 110** Ballet Studio I (prereq: consent of adviser) 2
- **DANC 210** Ballet Studio II (prereq: consent of adviser) 2
- **DANC 310** Ballet Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 120** Jazz Studio I (Prereq: consent of adviser) 2
- **DANC 220** Jazz Studio II (Prereq: consent of adviser) 2

Elective Courses in History/Philosophy

- **DANC 100** Foundations of Dance 2
- **DANC 180** Choreography I 2
- **DANC 181** Dance Improvisation 2

Electives: Five hours from courses in the Department of Dance, with the consent of the Dance Academic Adviser.

Dance Education Minor

Required Courses in Technique—11 total hours
- **DANC 106** Recreational 1

Four hours from the following courses at the appropriate level:
- **DANC 130** Modern Studio I (prereq: consent of adviser) 2
- **DANC 230** Modern Studio II (prereq: consent of adviser) 2
- **DANC 330** Modern Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 110** Ballet Studio I (prereq: consent of adviser) 2
- **DANC 210** Ballet Studio II (prereq: consent of adviser) 2
- **DANC 310** Ballet Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 120** Jazz Studio I (Prereq: consent of adviser) 2
- **DANC 220** Jazz Studio II (Prereq: consent of adviser) 2

Elective Courses in History/Philosophy

- **DANC 100** Foundations of Dance 2
- **DANC 180** Choreography I 2
- **DANC 181** Dance Improvisation 2

Electives: Five hours from courses in the Department of Dance, with the consent of the Dance Academic Adviser.

Dance Education Minor

Required Courses in Technique—11 total hours
- **DANC 106** Recreational 1

Four hours from the following courses at the appropriate level:
- **DANC 130** Modern Studio I (prereq: consent of adviser) 2
- **DANC 230** Modern Studio II (prereq: consent of adviser) 2
- **DANC 330** Modern Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 110** Ballet Studio I (prereq: consent of adviser) 2
- **DANC 210** Ballet Studio II (prereq: consent of adviser) 2
- **DANC 310** Ballet Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 120** Jazz Studio I (Prereq: consent of adviser) 2
- **DANC 220** Jazz Studio II (Prereq: consent of adviser) 2

Elective Courses in History/Philosophy

- **DANC 100** Foundations of Dance 2
- **DANC 180** Choreography I 2
- **DANC 181** Dance Improvisation 2

Electives: Five hours from courses in the Department of Dance, with the consent of the Dance Academic Adviser.

Dance Education Minor

Required Courses in Technique—11 total hours
- **DANC 106** Recreational 1

Four hours from the following courses at the appropriate level:
- **DANC 130** Modern Studio I (prereq: consent of adviser) 2
- **DANC 230** Modern Studio II (prereq: consent of adviser) 2
- **DANC 330** Modern Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 110** Ballet Studio I (prereq: consent of adviser) 2
- **DANC 210** Ballet Studio II (prereq: consent of adviser) 2
- **DANC 310** Ballet Studio III (prereq: consent of adviser) 2

Two to four hours from the following courses at the appropriate level:
- **DANC 120** Jazz Studio I (Prereq: consent of adviser) 2
- **DANC 220** Jazz Studio II (Prereq: consent of adviser) 2

Elective Courses in History/Philosophy

- **DANC 100** Foundations of Dance 2
- **DANC 180** Choreography I 2
- **DANC 181** Dance Improvisation 2

Electives: Five hours from courses in the Department of Dance, with the consent of the Dance Academic Adviser.
Required Courses in History/Philosophy Hours
DANC 100 Foundations of Dance 2
DANC 200 Dance History and Philosophy (Prereq: 100) 2

Electives: Five hours from courses in the Department of Dance, with the consent of the Dance Academic Adviser.

Modern Dance Minor

Required Courses in Technique Hours
Ten hours, including 2 hours minimum from 330, from:
DANC 130 Modern Studio I (Prereq: consent of adviser) 2
DANC 230 Modern Studio II (Prereq: consent of adviser) 2
DANC 330 Modern Studio III (Prereq: consent of adviser) 2

Two hours, with consent of adviser, from:
Ballet Studios (110, 210, 310) Each 2
Jazz Studios (120, 220) Each 2
Ensembles (540, 550, 560, 570) Each 1-2

Required Courses in Technique Hours
DANC 180 Choreography I (Prereq: consent of adviser) 2
DANC 181 Dance Improvisation 1

Required Courses in History/Philosophy Hours
DANC 100 Foundations of Dance 2
DANC 200 Dance History and Philosophy (Prereq: 100) 2

Electives: Five hours from courses in the Department of Dance with the consent of the Dance Academic Adviser.

Theatrical Dance Minor

Required Courses in Technique Hours
Four hours, with consent of adviser, from:
Ballet Studios (110, 210, 310) Each 2
Jazz Studios (120, 220) Each 2
Modern Studios (130, 230, 330) Each 2 and:
DANC 104 Beginning Tap I 1
DANC 106 Recreational Dance 1

Required Courses in Choreography Hours
DANC 180 Choreography I (Prereq: consent of adviser) 2
DANC 181 Dance Improvisation 1

Required Courses in Choreography Hours
DANC 180 Choreography I (Prereq: consent of adviser) 2
DANC 181 Dance Improvisation 1
DANC 280 Choreography II (Prereq: 160, 181) 2
DANC 380 Choreography III (Prereq: 280) 2

Required Courses in Theory Hours
Either:
DANC 588 Dance Production 2
MUS 185 Music Fundamentals for Dancers 1

Required Courses in Performance or Practicum Hours
Either:
DANC 400 Practicum (Prereq: consent of adviser) 1-2
DANC 560 Performance (Prereq: consent of adviser) 1-2

These must be in the area of musical theatre

Course Descriptions

100 Foundations of Dance 2 hrs.
An historical overview of dance history with emphasis on the role of WMU in the propagation of the art of the dance.

101 Beginning Ballet I ($10) 1 hr.
An introduction to ballet technique for the beginning general student.

102 Beginning Jazz I 1 hr.
An introduction to jazz technique for the beginning general student.

103 Beginning Modern I 1 hr.
An introduction to modern technique for the beginning general student.

104 Beginning Tap I 1 hr.
A introduction to tap technique for the beginning general student.

105 Social Dance Forms 1 hr.
A study of traditional and current ballroom dance styles.

106 Recreational Dance 1 hr.
Investigation of folk, square and social forms of dance, with a concentration on overlapping dance skills.

110 Ballet Studio I 2 hrs.
An introduction to the art of ballet, designed for dance majors and minors, primarily concerned with the development of technique. The emphasis is placed on alignment, basic vocabulary and integrated movement combinations. Repeatable for credit. Prerequisite: Adviser consent.

111 Beginning Ballet II ($10) 1 hr.
Continued development of ballet technique beyond the introductory level for the general student. Transfer of weight and coordination of total body movements are emphasized. Prerequisite: DANC 101.

112 Beginning Jazz II 1 hr.
Continued development of jazz technique beyond the introductory level for the general student. Expressive use of technique and combinations involving multiple turns, and skills in performance and quick study. Repeatable for credit. Prerequisite: Placement audition or approval of Studio I instructor.

113 Beginning Modern II 1 hr.
Continued development of modern technique beyond the introductory level for the general student. Normative use of technique in movement combinations, with increased dynamic awareness, is stressed. Prerequisite: DANC 103.

114 Beginning Tap II 1 hr.
Continued development of tap technique beyond the introductory level, with application to rhythmic combinations involving the use of stylized movements. Prerequisite: DANC 104.

120 Jazz Studio I 2 hrs.
An introduction to the art of jazz dance, designed for dance majors and minors, primarily concerned with development of technique. The emphasis is placed on alignment, movement isolation, rhythmic awareness, basic vocabulary and both percussive and free-flow combinations. Students will continue in Studio I until advanced to Studio II by the instructor. Repeatable for credit. Prerequisite: Adviser consent.

130 Modern Studio I 2 hrs.
An introduction to the art of modern dance, designed for dance majors and minors, primarily concerned with development of technique. The emphasis is placed on alignment, basic vocabulary and integrated movement combinations. Repeatable for credit. Prerequisite: Adviser consent.

180 Choreography I 2 hrs.
A practical experience in dealing with the basic elements of dance composition. DANC 181 Dance Improvisation must be taken concurrently with, or in advance of, this course. Prerequisite: Adviser consent.

181 Dance Improvisation 1 hr.
The extemporaneous exploration of motion through neuro-muscular logic. Dance majors must take Choreography I concurrently with this course.

200 Dance History and Philosophy 2 hrs.
A study of philosophic influences on dance history. Prerequisite: DANC 100.

210 Ballet Studio II 2 hrs.
A development of ballet technique at the intermediate level. Emphasis is on increased strength and flexibility, jumps, turns and an introduction for women to pointe technique. Students will continue in Studio II until advanced to Studio III by the instructor. Repeatable for credit. Prerequisite: Placement audition or approval of Studio I instructor.

220 Jazz Studio II 2 hrs.
A development of jazz technique at the intermediate level. Emphasis is on lyrical integration of isolated movements, sequential combinations involving multiple turns, and skills in performance and quick study. Repeatable for credit. Prerequisite: Placement audition or approval of Studio I instructor.

230 Modern Studio II 2 hrs.
A development of modern technique at the intermediate level. Emphasis is on normative theory, performance and ensemble awareness. Students will continue in Studio II until advanced to Studio III by the instructor. Repeatable for credit. Prerequisite: Placement audition or approval of Studio I instructor.

280 Choreography II 2 hrs.
Further exploration of the compositional elements as used in group choreography. Prerequisite: DANC 180 and 181.

290 Teaching of Dance in the Elementary School 3 hrs.
Concerned with methods and techniques of teaching dance to elementary age children. Laboratory experience provides an opportunity for practical application. Should not be elected by students taking DANC 341.

295 Kinesiology for the Dancer 3 hrs.
This course is designed for the dance student who does not have a major or minor in Physical Education. It is concerned with analysis of movement from an anatomical and mechanical point of view, with special attention given to the problems of dance technique.
300 Dance and Related Arts
3 hrs.
An historical examination of dance philosophies as related to concurrent trends in other arts. Prerequisite: DANC 200.

310 Ballet Studio III
2 hrs.
Ballet technique for the advanced/pre-professional student in the classical idiom. Emphasis is placed on specialized areas (pointe technique, ballet for the male dancer, and pas de deux). Pedagogy, advanced technique style and ensemble awareness. All undergraduate members and apprentices of University Ballet Theatre (UBT) must take this course as a required technique class. Repeatable for credit. Prerequisite: Placement audition, approval of Studio II instructor or member/apprentice of UBT.

330 Modern Studio III
2 hrs.
Technique for the advanced/pre-professional student in the modern idiom. Emphasis is placed on the ability to quickly analyze and skillfully reproduce complex movement combination within the technique. All undergraduate members of Western Michigan Repertory Dance Company (WMRDC) must take this course as a required technique class. Repeatable for credit. Prerequisite: Placement audition, approval of Studio II instructor or member of WMRDC.

341 Creative Movement in the Elementary School
4 hrs.
This course is open to students in the Integrated Creative Arts Minor and explores the principles, materials and techniques of creative movement for elementary school children. A concentrated study is made of how children discover movement through problem-solving within their own physical abilities. Lecture, participation, observation and laboratory experience are provided.

380 Choreography III
2 hrs.
Concert and musical theatre choreography in the student's area of concentration. Prerequisite: DANC 280.

385 Introduction to Dance Notation
2 hrs.
A study of Labanotation—a practical system of recording human movement for purposes of analysis and reading. The course includes reading (interpretation), theory and practice. Prerequisites: DANC 110, 130, and MUS 185.

390 Teaching Dance in the Secondary School
3 hrs.
An investigation into procedures for presentation of information related to the dance forms most commonly taught at the secondary school level. Prerequisites: DANC 106, 230.

400 Practicum
1-4 hrs.
An individual approach to a practical field experience in dance. Through reading and practice the student will have an opportunity to explore a topic or problem of interest in the dance areas. Prerequisite: Adviser consent.

480 Graduating Presentation
2 hrs.
The preparation and presentation of an advanced choreographic project accompanied by a portfolio and an oral examination. Prerequisite: DANC 300

500 Special Studies in Dance History
2 hrs.
A concentrated examination of available literature on selected topics within the student's major area. Group discussions and individual presentations will be an outgrowth of this study. Prerequisite: DANC 300.

525 Special Studies in Dance
1-6 hrs.
A study of dance styles not included within program. Examples of possible topics include: Afro-American dance; Ballet repertoire; Pre-classic dance forms 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: Adviser consent.

540 University Dancers (UD)
1 hr.
Open to all University students by application. Audition for this group will include performance in various dance styles. Studio Evenings and Annual Concert of Dance experiences will take place through further choreographic and rehearsal auditions. May be repeated for credit. Prerequisite: By audition.

550 Western Michigan Repertory Dance Company (WMRDC)
2 hrs.
WMRDC is a major performing ensemble which provides master classes, lecture-demonstrations and concerts in various dance styles on and off campus. Members must show proficiency in the areas of performance, improvisation, teaching, public speaking and composition. Members must attend DANC 330. Repeatable for credit. Prerequisite: Audition or consent of Company Director.

560 Performance Variable
An experience in student or faculty choreographed dance works, in projects not encompassed in specific dance courses. Application with approval of dance faculty committee must be filed with the dance adviser one month prior to performance. Registration occurs after performance has been completed. Prerequisite: Adviser Consent.

570 University Ballet Theatre (UBT)
2 hrs.
UBT is a major performing ensemble of the Department of Dance. Ballet dancers will have experience rehearsing and performing in a professional company environment. Members and apprentices must attend DANC 310. Repeatable for credit. Prerequisite: Audition or consent of Ballet Director.

588 Dance Production
2 hrs.
The study of the production aspects of dance including sound, lighting, costumes, make-up, and stage management. Practical applications will include first-hand experience in creating tape collages with special effects, designing lighting, costumes and make-up.
Music (MUS)

Donald Bullock, Director
William Allgood
William Appel
Joan Boucher
Russell W. Brown
Curts Curtis-Smith
Judith D’Arcangelis
Jack J. Frey
Thomas C. Hardie
Marilynn Y. Heim
Robert Humiston
Marshall L. Hutchinson
Milvern K. Ivey
Stephen Jones
Trent P. Kyneaston
Kathryn Low
James McCarthy
Maurita Murphy Mead
Leonard V. Meretta
Judy Moonert
Charles E. Osborne
Donald J. Para
Elizabeth E. Patch
Phyllis Rappeport
Robert J. Rico
David A. Sheldon
Richard Suddendorf
Robert L. Whitney
Brian Wilson
Joseph T. Work
James Wright
Joyce Zadow
Stephen Zigone
Ramon Zupko

In America today the responsibility to carry on a vital tradition of the musical profession falls increasingly upon the university. The music faculty of nearly every university seeks to fulfill this responsibility through creative performance, composition, scholarship, and community service. Above all, we strive in our teaching to produce musicians who appreciate and the courage to defend the dedication.

The School of Music offers courses of study that lead to the Bachelor of Music, the Bachelor of Arts with a major in music, and a minor in music. The Bachelor of Music is granted only by the Admissions Office for undergraduate students. Application forms may be obtained by writing to the Admissions Office. Enrollment in the music curriculum is contingent upon admission to the University and approval of the School of Music. Admission is obtained through the music audition and testing program. The student may proceed by making application to the University at which time notification will be sent about the audition and testing program in the School of Music, or a request may be made for an opportunity to audition and be tested prior to making application to the University by obtaining an Auditor Request 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 major in music is based upon the student’s background in music, as demonstrated on the major instrument or voice, the student’s musical aptitude, as measured by the Gaston Test of Musicality, and upon academic abilities reflected in grade point average and various scholastic test scores as they are available. Efforts are made to evaluate the student on the basis of musical potential and not upon desire to enter a specific professional area of music. All students commence a major in music with common “core” requirements and are, therefore, entitled to entry into the major with this common basis in mind.

Students who are considering becoming a music major should have a good background in applied music (instrumental or vocal study or performance). Preparation in piano, as a secondary instrument, is also helpful to the student, but not a requisite. Prior to entry into Basic Music 100, which is required to all music majors in their first year of study, the student must demonstrate knowledge of fundamentals. A fundamental exam will be administered at the time the student is initially advised about classes.

The School of Music has been gratified in its audition and testing program. The program has enabled many students to make a more intelligent choice regarding their educational career. Many have been helped toward avoiding entering a field in which they do not have the necessary foundation or talent to be successful, while others have been encouraged to pursue an interest in music in order to fully develop talents that they have discovered through the audition and tests which were administered. Further information regarding admission to the music curriculum may be obtained by writing the Music Adviser in the School of Music. The School welcomes the opportunity to confer with prospective students, parents and counselors regarding educational goals and plans.

Transfer Credit
Music credit from another institution is normally acceptable providing course work at Western is accepted for the student’s curriculum at the other institution. Music credit from another institution is normally acceptable providing course work at Western is accepted for the student’s curriculum at the other institution. Music credit from another institution is normally acceptable providing course work at Western is accepted for the student’s curriculum at the other institution. Music credit from another institution is normally acceptable providing course work at Western is accepted for the student’s curriculum at the other institution. Music credit from another institution is normally acceptable providing course work at Western is accepted for the student’s curriculum at the other institution.

For further information regarding the transfer of music credits, contact the Music Adviser in the School of Music.
Advising

Adviser: Donald Para
Appointments: 2146 Dalton Center
(615-383-0913)

The School of Music provides counseling for all music students through a full-time student advising service. The Music Student Advising Office provides one-stop advising for all students. Advice on general education and major/minor requirements can be provided by consulting with a single music student adviser. Only when a student pursues a minor outside of the School of Music is an appointment required with another adviser.

The office of the music student adviser is primarily maintained for the purpose of providing academic counseling. Personal guidance is often provided by the adviser, and matters which are beyond his/her qualifications will be referred to persons and offices on- and off-campus which are capable and qualified to assist.

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 curricular changes in course alterations that may occur while work on the degree is in progress if these changes enhance his/her education. Each student is responsible for knowing the requirements that must be completed for the degree and for taking the steps necessary for completion of requirements. All music students are urged to take advantage of the advising services in the School of Music for assistance in making educational choices and for interpretation of requirements as they are stated in the Undergraduate Catalog.

Miscellaneous

Special (non-academic) requirements for graduation fall in the area of recital performance and recital attendance. Since these are non-academic areas, completion of these requirements is not reflected on the student’s transcript and therefore, requires graduation clearance from the music adviser.

The requirement for recital attendance: All music majors are required to attend music convocations and recitals at the School of Music, except they are not a participant. 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 School of Music concerts and recitals in the semester in which the student is not a participant. Absences in the student’s record that have not been made up will prevent graduation. Music majors are required to enroll in MUS 101 Music Convocation as specified in the curriculum.

The requirement(s) for recital performance are as follows:

1. Bachelor of Music candidates with a major in applied music must present a Senior Recital which is approved by the student’s applied teacher. Prerequisite to performance on any student recital shall be a recommendation by the student’s applied teacher. Prerequisite to the presentation of Junior and/or Senior Recitals is an approved hearing of that recital by the student’s area faculty. Recitals should be scheduled in the Office for Concerts and Special Events as far in advance as possible.

2. Bachelor of Music candidates with a major in music therapy.

Competency Examinations are available to students who qualify for advanced placement or a waiver of requirements in music courses even if no formal exam at the college level may have been completed. Common areas of competency are applied music, secondary instruments, and music theory. Regular exams are 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, he/she 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 his/her choice (or 2) receive credit for the course(s) in which competency is demonstrated by passing an examination 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. Currently enrolled students apply and audition for awards and renewal of awards during the Winter Semester. For a listing of music grants and scholarships and application forms, contact the adviser in the School of Music. Early application for awards is advised.

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.

Programs

When a student is admitted to the music curriculum, a major area of concentration in music is usually not determined by the student. Students may declare a major area of concentration as “core”, which are courses required commonly of all music majors, regardless of professional or vocational interests in the field. Core requirements will normally be taken in the first two years. Students who are interested in an in-depth introduction to the two professions for which this university offers certification courses, an opportunity will be provided for them to register for Field Experience courses in music education and music therapy.

Core Requirements—Bachelor of Music Degree

<table>
<thead>
<tr>
<th>Hrs.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Convocation 101</td>
<td>7 semesters</td>
</tr>
</tbody>
</table>

*Applied Music 200, 300* (see Electives below) 14
Basic Music 160, 161, 260, 261 11
Aural Computation 1162, 163, 259 3
Music History and Literature 270, 271 2
Music Theory Elective (see Electives below) 2
Music History and Literature Elective (see Electives below) 10

*Performance Elective (see Electives below)* 8
Keyboard Fundamentals 120-121 2
Conducting 215 1
General Education Electives 13
Major Area of Concentration 35
Free Electives to make a minimum of 122 semester credit hours.

Music Clearance (verification of completion of recital performance and attendance requirements)

Note: *Music therapy majors are required to complete only 8 hours of Applied Music 200 (including successful completion of a Sophomore Hearing). 8 hours of Music History 270-271, and 4 hours of Performance Electives.*

Electives

Performance electives may be selected from the following list of courses:

1. All students are required to elect four semesters of a major ensemble. The major ensembles are: 107, 108, 110, 111, 112, 113 and 114.

Please note the following:

A. At least two of the required four semesters of major ensemble must be taken during the junior-senior years.

B. The four semesters MUST be taken in an ensemble in the student’s applied area. (Keyboard majors may elect any large ensemble, except that Keyboard/Music Education—Vocal majors must elect a vocal ensemble and Keyboard/Music Education—Instrumental majors must elect an instrumental ensemble.)

2. The remaining four semester hours of performance electives may be selected from the following: MUS 107, 108, 109, 110, 111, 112, 113, 114, 119, 190, 210, 211, 212, 218, 219, 317, 512, 517.

Please note: All keyboard majors are required to elect one semester of MUS 190 Accompanying (therapy majors excepted).

The student is expected to complete one performance elective during each term of enrollment.

Theory electives may be selected from the following: MUS 262, 360, 361, 466, 518, 555, 558, 560, 566, 567.

Music History/Literature electives may be selected from the following list of courses:

MUS 375, 570, 571, 572, 574, 575, 576, 577, 578, 579, 580, 581.

Applied Music Option

Six hours of applied music may be used in the junior and senior years to support the student’s professional major, providing he/she has passed a “Sophomore Hearing” and has the joint approval of his/her performance area and major area. Students are encouraged to invent independent study projects which may fulfill elective requirements in the above categories. The student must first secure approval of a faculty member to supervise the project and of the music adviser for application of the project toward curricular requirements.

Electioning a Major Area of Study—Bachelor of Music Degree

Music majors will elect a major area of concentration in their fourth semester of study. All areas of concentration are open to the music major and the student may freely elect the area of his/her choice by completing a form provided by the Music
adviser. The student will automatically be accepted in the area of his/her choice if he/she qualifies under the following guidelines:

1. Providing the student has a minimum grade point average of 3.25 in “Core” music courses—required in the first two years.

2. Providing the student has a minimum grade point average of 3.25 in “Core” courses which are in the same area as the elected major (i.e., applied music major must have at least a 3.25 average in applied music courses required in the first two years; music history majors must have at least a 3.25 average in music history and literature courses required in the first two years; music theory—3.25 in theory courses; composition—3.25 in composition courses.)

3. Since no courses “in the area of the elected major” are required in the first two years in music education and music therapy, a student may freely elect either of these curricula, but 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 directed teaching assignment (music education).

If the student does not automatically qualify according to the guidelines outlined above, the application will be submitted to the faculty committee in the area of the major for approval. In the event that approval is denied and the student does not qualify for any other major area of concentration, the music advisor will outline the course work in music which may be applied toward the Bachelor of Arts or Bachelor of Science degrees with a major in music.

**Music Education: Instrumental Major**

Grants certification to teach music at any grade level (K-12)

| Music Methods (elect from: 240, 344, 345, 346) | 4 |
| Instrumental Conducting and Literature 331 | 2 |
| Instrumental Clinic (elect from 129-139) | 6 |
| Education and Professional Development 250, 301 | 7 |
| Directed Teaching Block 410, 450, 470 | 14 |

Before the student will be recommended for directed teaching he/she must have completed courses in the major with a minimum grade point average of 3.0. The application for a directed teaching assignment must be made in the Office of Professional Field Experiences prior to one full semester before the assignment is to begin.

Wind/percussion students must complete two semesters of MUS 109 (Marching Band) in fulfilling physical education requirements.

**Music Education: Vocal Major**

Grants certification to teach music at any grade level (K-12)

| Music Methods 240, 340 | 4 |
| Choral Conducting and Literature 330 | 2 |
| *Professional Electives* | 6 |
| Vocalists elect from 220, 221, 230, 231, 232, 320, 321, 530, 590 | |
| Pianists elect from Voice 100, 190, 230, 231, 232, 530, 590 | |

**Music Therapy Major**

Grants certification to teach music at any grade level (K-12)

<table>
<thead>
<tr>
<th>Music Therapy Major</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core (minus Music History/Literature elective)</td>
<td></td>
</tr>
<tr>
<td>Courses in Music Therapy 281, 288, 290, 380, 383, 472, 473, 479, 480, 481, 543</td>
<td>22</td>
</tr>
<tr>
<td>Keyboard Musicianship 220, 221, 320, 332</td>
<td>4</td>
</tr>
<tr>
<td>Fundamentals of Guitar 126</td>
<td>1</td>
</tr>
<tr>
<td>Voice Class 122</td>
<td>1</td>
</tr>
<tr>
<td>Instruments of the Band and Orchestra 279 (or Percussion Class 130 plus one additional instrument class)</td>
<td>2</td>
</tr>
<tr>
<td>Professional Electives (elect from 123, 129-139, 240, 244, 246, 555, 558)</td>
<td></td>
</tr>
<tr>
<td>Applied Music 300, Applied Organ-Piano majors only, Performance Electives—selected from Electives listed under Core Requirements</td>
<td>5</td>
</tr>
<tr>
<td>Psychology 194 and 250</td>
<td>6</td>
</tr>
<tr>
<td>Special Education 530</td>
<td>3</td>
</tr>
</tbody>
</table>

The student must complete at least one course in dance which qualifies as a physical education “activity” course.

**Applied Music: Instrumental Major**

In order to be permitted to major in applied music the student must achieve a minimum grade point average of 3.25 in MUS 200 or be admitted by audition.

<table>
<thead>
<tr>
<th>Applied Music (in addition to Core requirements)</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyboard Musicianship 220-221, 320, 321</td>
<td>2</td>
</tr>
<tr>
<td>Counterpoint 560</td>
<td>2</td>
</tr>
<tr>
<td>Music Electives</td>
<td>5</td>
</tr>
<tr>
<td>Senior Recital (required for Music Clearance)</td>
<td>0</td>
</tr>
</tbody>
</table>

**Applied Music: Vocal Major**

In order to be permitted to major in applied music the student must achieve a minimum grade point average of 3.25 in Applied MUS 200 or be admitted by audition.

<table>
<thead>
<tr>
<th>Applied Music (in addition to Core requirements)</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyboard Musicianship 220-221, 320, 321</td>
<td>2</td>
</tr>
<tr>
<td>Counterpoint 560</td>
<td>2</td>
</tr>
<tr>
<td>Music Electives</td>
<td>5</td>
</tr>
<tr>
<td>Senior Recital (required for Music Clearance)</td>
<td>0</td>
</tr>
</tbody>
</table>

**Music Theatre Major**

In addition to the 8 hrs. of foreign languages above, the applied music-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.

<table>
<thead>
<tr>
<th>Music Theatre Major</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyboard Musicianship 220-221</td>
<td>2</td>
</tr>
<tr>
<td>Music Theatre Practicum 516</td>
<td>2</td>
</tr>
<tr>
<td>Dance Classes (elect from DAN1 101, 102, 103, 108, 380, 525)</td>
<td>5</td>
</tr>
<tr>
<td>Theatre Minor</td>
<td>24</td>
</tr>
</tbody>
</table>

To complete a minor in theatre the student must complete 24 semester hours of work in theatre courses.

**Teacher Certification**

Students wishing to receive certification to teach music in the public schools (K-12) must complete the following courses:

<table>
<thead>
<tr>
<th>Teacher Certification</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 250, 300, 310, 410, 450, 470, MUS 330, 340, 320, 321, 520</td>
<td></td>
</tr>
</tbody>
</table>

MUSIC 209
Note: State law requires that students who graduate with a degree which carries elementary or secondary teaching certification must take a Teaching of Reading course. ED 312 Teaching of Reading (Elementary) satisfies this requirement for elementary certification. ED 322 Teaching of Reading (Secondary) satisfies this requirement for secondary certification.

Music Theory

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition 262</td>
<td>2</td>
</tr>
<tr>
<td>Introduction to Musiology</td>
<td>6</td>
</tr>
<tr>
<td>Seminar in Music Theory</td>
<td>4</td>
</tr>
<tr>
<td>Music History/Literature</td>
<td></td>
</tr>
<tr>
<td>Elective (see Electives above)</td>
<td>4</td>
</tr>
<tr>
<td>Counterpoint 560-561</td>
<td>4</td>
</tr>
<tr>
<td>Orchestration 567-568</td>
<td>4</td>
</tr>
<tr>
<td>Professional Electives</td>
<td></td>
</tr>
<tr>
<td>(choose from Composition 263, Seminar in Electronic Music Composition 364, Seminar in Composition 362, Musical Acoustics 566, Style Analysis 360, Improvisation 518, Jazz Arranging 555, Jazz Improvisation 558)</td>
<td>8</td>
</tr>
</tbody>
</table>

All Bachelor of Music: Music Theory candidates must pass a piano proficiency examination as outlined below.

Composition

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition 262-263</td>
<td>4</td>
</tr>
<tr>
<td>Musical Acoustics 566</td>
<td>3</td>
</tr>
<tr>
<td>Seminar in Music Composition 362</td>
<td>8</td>
</tr>
<tr>
<td>Seminar in Electronic Music Composition 364</td>
<td>8</td>
</tr>
<tr>
<td>Counterpoint 560-561</td>
<td>4</td>
</tr>
<tr>
<td>Professional Electives</td>
<td></td>
</tr>
<tr>
<td>(choose from 100, 130, 567, 568)</td>
<td>4</td>
</tr>
<tr>
<td>Music History/Literature Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

The composition student must have previous composition experience before being admitted to a composition major. This experience may be acquired by transferring approved credit for a composition major 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.

In completing General Education requirements the Composition major must include ENGL 239. It is recommended that the student also consider ART 120, ENGL 150, and THEA 200.

Music History

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER 200-201</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Musiology</td>
<td>6</td>
</tr>
<tr>
<td>Musicology and Research</td>
<td>4</td>
</tr>
<tr>
<td>Music History/Literature</td>
<td></td>
</tr>
<tr>
<td>Electives (see Electives above)</td>
<td>10</td>
</tr>
<tr>
<td>Counterpoint 560-561</td>
<td>4</td>
</tr>
<tr>
<td>Professional Electives</td>
<td></td>
</tr>
<tr>
<td>(choose from Composition 262, Seminar in Music Theory 466, Orchestration 567/568, Improvisation 518, Music Before 1600 582)</td>
<td>4</td>
</tr>
</tbody>
</table>

All Bachelor of Music: Music History candidates must pass a piano proficiency examination as outlined below.

Jazz Studies

| Applied Music (in addition to Core Requirements) 300 | 2 |
| Jazz Ensembles 210, 212, 218 | 4 |
| Jazz Composition 264 | 2 |
| Jazz Improvisation 558 | 3 |
| Keyboard History/Literature 583 | 4 |
| All Bachelor of Music: Music History candidates must pass a piano proficiency examination as outlined below. |

Keyboard Requirements for Composition, Theory and Music History Majors

All composition, theory, and music history majors must demonstrate keyboard competency as a graduation requirement or for admission to candidacy for a graduate degree. Competency examinations will be given 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.
   - Level: Oxford Folk Song Singspelling Series—Book II.
2. Play harmonized ascending and descending major and minor scales—all keys.
3. Ability to demonstrate in context the following:
   - A. All diatonic triads and seventh chords, including all inversions.
   - B. Chromatic chords including the following: secondary dominants, borrowed chords, augmented sixth chords, augmented dominant seventh chords, the Neapolitan sixth chord, diminished seventh chords, and half-diminished seventh chords.

**Music History**

1. Two compositions of contrasting style at the level of Bach Two-Part Inventions or Bartok Mikrokosmos, Vol. III or IV. One composition must be selected from the Baroque or Classical repertoire, the other from the Romantic or Contemporary period.
2. Score reading. Emphasis shall be placed on reading from string quartet scores.
3. Sight-reading of piano music which is easier than the level of literature which the student is performing.

Bachelor of Science Degree or Bachelor of Arts Degree Music Curriculum

<table>
<thead>
<tr>
<th>Degree</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>35</td>
</tr>
<tr>
<td>Physical Education</td>
<td>109</td>
</tr>
<tr>
<td>Musical Composition</td>
<td>2</td>
</tr>
<tr>
<td>Music Composition 101 (6 semesters)</td>
<td>0</td>
</tr>
<tr>
<td>Applied Music 200</td>
<td>8</td>
</tr>
<tr>
<td>Basic Music 160-161, 260-261</td>
<td>11</td>
</tr>
<tr>
<td>Aural Comprehension 162, 163, 259</td>
<td>3</td>
</tr>
<tr>
<td>Keyboard Fundamentals 120-121</td>
<td>2</td>
</tr>
<tr>
<td>Music History/Literature 270-271</td>
<td>8</td>
</tr>
<tr>
<td>Performance Electives (major ensemble)</td>
<td>4</td>
</tr>
<tr>
<td>Music Electives</td>
<td>14</td>
</tr>
</tbody>
</table>

4. A minor in another department in University Electives (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
   124 Total

The award of the Bachelor of Arts or the Bachelor of Science degree is dependent upon coursework taken in foreign language and extra credits earned in General Education, language and literature, science, and social science. See adviser for specific details.

Music-Theatre Program

The School of Music and Department of Theatre offer a reciprocal program that provides students with the opportunity to combine these two areas of study. In addition to the above requirements for:

1. General Education
2. Physical Education, and
3. Music major, the student would complete the following:
5. Dance Courses 6 hrs.
6. Select from DANC 101, 102, 103, 180, 181, 525

University electives to make a total of 122 hours 11 hrs.

For the student who is enrolled in the General Curriculum of the College of Arts and Sciences, there will be an option to complete requirements for a Bachelor of Arts degree or a Bachelor of Science degree. To be awarded a Bachelor of Arts degree, the student, in completing requirements as outlined above, must have completed at least 70 hours of General Education, language and literature, science, and social science, including at least eight hours in one foreign language. If two or more years of high school preparation in one foreign language are presented for entrance, the requirements for foreign language may be reduced. The student completing requirements as requirements for Bachelor of Arts degree. To be awarded a Bachelor of Science degree, the student, in completing requirements as outlined above, must have completed at least 40 hours in General Education, language and literature, science, and social science, is eligible for the Bachelor of Science degree.
Bachelor of Science Degree

Elementary Education—Music

As described under the College of Education section of this Undergraduate Catalog.

Music Minor

Requirements for the elementary education student:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requirements for the elementary education student:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Music 160</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Aural Comprehension 162</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>*Keyboard Musicianship 120-121</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>*Keyboard Musicianship 220-221</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Voice Class 122</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>General Music Methods 240</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Elementary Music Practicum 244</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Instruments of Band &amp; Orchestra 279</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>American Music 350</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Creating Music in the Classroom 373</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Note: *The student may develop competency in piano classes by registering for a piano proficiency examination through the music adviser. A waiver of the piano requirements means that the student will fulfill the 24-hour minor program by taking two additional hours of music electives.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 24

Requirements for students who will not receive a teaching certificate:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minors may take the following basic courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundamentals of Music 159</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Basic Music 160</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Aural Comprehension 162</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Minor must choose one of the following two groups:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Applied Music 100</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>*Performance Electives 2 (Select from 107, 108, 110, 111, 112, 113)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music Appreciation: Live Music 150</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>American Music 350</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>*Personal auditions required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 24

THE SCHOOL OF MUSIC DOES NOT OFFER A MINOR FOR STUDENTS WHO WILL RECEIVE SECONDARY TEACHING CERTIFICATION.

Course Descriptions

(Courses described in italics are approved for General Education.)

Ensembles

105 Campus Choir

(Director: J. Frey)
1 hr.
A choral ensemble which emphasizes the recreational aspects of ensemble singing. A minimal schedule of informal performances is maintained.

107 Treble Choir
1 hr.
An ensemble for female vocalists which develops general musicianship and provides training in choral singing. Performances are presented on-campus and in the community. Membership by audition.

108 Collegiate Singers
(Director: M. Ivey)
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.

109 Marching Band
(Director: J. Wright)
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.

110 Symphonic Band
(Director: R. Suddendorf)
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 perspective. 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.

111 University Orchestra
1 hr.
The orchestra is open to all students who have had a reasonable amount of orchestra experience. Many fine compositions are studied and played during the year, and the orchestra joins with other campus organizations in joint programs. Instruments are available for the use of students. Membership by audition.

112 University Chorale
(Director: M. Ivey)
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 the surrounding states. Membership by audition.

113 Concert Band
(Director: R. Suddendorf)
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.

114 Wind Ensemble
(Director: R. Suddendorf)
1 hr.
An organization which performs a wide range of literature for the modern wind ensemble. This group performs both on- and off-campus. Membership by audition.

119 Gold Company
(Director: S. Zegree)
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.

210 Jazz Lab Band
(Director: T. Kynaston)
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.

211 Studio Accompanying
(Coach: P. Rappeport)
1 hr.
A laboratory experience in accompanying solo music. Students will be assigned three to four hours of varied studio accompanying per week. The course may be repeated for credit not to exceed a total of two semester hours.

212 Jazz Orchestra
(Director: T. Kynaston)
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.

216 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 quartets, percussion ensembles, piano trios, etc. Credit will be granted only if a sufficient rehearsal/performance schedule warrants.

219 Vocal Chamber Ensemble
1 hr.
Small vocal ensemble(s) which emphasize research and limited performance of specialized repertoire of one or various periods of music. Admission by permission of the instructor.
317 Opera Workshop
(Director: W. Appel)
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.

512 New Music Ensemble
(Director: R. Zupko)
1 hr.
A performing organization which is committed to the performance of music and mixed-media works in the avant garde style. The ensemble is open to vocalists and instrumentalists on an audition basis.

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.

516 Music Theatre Practicum
1 hr.
A production experience in music theatre. Each semester culminates in an opera or musical comedy production. Open to singers, actors, accompanists, instrumentalists, and persons interested in production techniques. Admission by audition or permission of the instructor. May be repeated for credit.

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.

519 Vocal Chamber Ensemble
1 hr.
Small vocal ensemble(s) which emphasize research and limited performance of specialized repertoire of one or various periods of music. Admission by permission of the instructor.

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 always register for applied music by reporting to the Music Office to be placed on the reserve list, after which the course must be requested by the students through the standard preregistration or final registration procedures. Only students enrolled in other classes at Western are eligible to receive applied music instruction.

Music Classes

101 Music Convocation
No Credit
($30 fee)
A series of special musical events required of music majors. Programs include lectures and recitals by faculty, selected students, and guest artists. (A $30 fee is assessed to all music majors in order to provide funds for travel and instruments used by students throughout the music program.)

102 Piano Class I
2 hrs.
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, sightreading, and harmonization.

103 Piano Class II
2 hrs.
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.

120 Keyboard Fundamentals
1 hr.
The course covers basic fundamentals of piano technique, sightreading, transposition and simple harmonization of melodies using primary harmonies. The course must be taken concurrent with or following MUS 160. Prerequisite: MUS 159 or music reading ability.

121 Keyboard Fundamentals
1 hr.
A continuation of 120. The course of study includes major scales and arpeggios using standard fingering, sightreading of easy pieces with two independent parts or melody with block chord accompaniment, transposition of a single melody line, and harmonization of melodies using secondary and secondary dominant harmonies. Prerequisite: MUS 120, or instructor consent.

122 Voice Class
1 hr.
A study of the fundamental processes of breath control and tone production, providing some individual instruction in preparing and singing standard song literature. The course is designed to benefit students interested in solo and choral singing.

123 Voice Class
1 hr.
A continuation of MUS 122. Repertoire will include early English songs and 17th and 18th century Italian songs as well as other standard literature, with a minimum of five songs to be memorized during the semester. Prerequisite: 122.

124 Guitar Class I
2 hrs.
This class will enable the student with no previous experience to use the guitar as an accompanying instrument. The course will provide basic instruction in the fundamentals of music reading as well as the fundamentals of guitar. The student will be required to own or have access to a Folk or Classical type guitar.
125 Guitar Class II
2 hrs.
This class is intended for the student who has completed Guitar Class I or the student with some guitar ability who wishes to further develop his/her skills. The course will enable the student to use the guitar as a solo or melody-playing instrument. Instructions will be provided on tablature and transposition as it applies to the guitar and on various techniques as used in both the Classical and Folk idioms for melody or single-note playing. The student will be required to own or have access to a Folk or Classical type guitar. Completion of MUS 124 or instructor consent.

126 Fundamentals of Guitar
1 hr.
This class is for the music major or minor who has an ability to read music and a basic knowledge of harmony but who cannot already play the guitar. The class will focus on the use of guitar in the music education and music therapy professions and will cover the different styles of beginning guitar playing, including an overview of basic chords, barre chords and the various strumming and picking patterns. The student must own or have access to Folk or Classical type guitar. Prerequisite: MUS 160.

129 String Class
2 hrs.
A thorough examination of all string instrument performance, pedagogy, materials, methods and maintenance. For wind and percussion majors in Public School Music.

130 Percussion Class
1 hr.
Fundamentals of percussion instrument pedagogy and performance. The student is required to perform on the snare drum in an acceptable manner and to demonstrate a working knowledge of percussion instruments, including methods and materials, care and maintenance, and the function of the percussion section in a band or orchestra. For music majors only.

131 Flute Class
1 hr.
Fundamentals of flute pedagogy and performance. For music majors only.

132 Oboe Class
1 hr.
Fundamentals of Oboe pedagogy, performance and reed-making. For music majors only.

133 Clarinet Class
1 hr.
Fundamentals of clarinet pedagogy and performance. For music majors only.

134 Bassoon Class
1 hr.
Fundamentals of bassoon pedagogy, performance, reed-making, and instrument maintenance. For music majors only.

135 Saxophone Class
1 hr.
Fundamentals of saxophone pedagogy and performance. For music majors only.

136 Trumpet Class
1 hr.
Fundamentals of trumpet pedagogy and performance. For music majors only.

137 French Horn Class
1 hr.
Fundamentals of French horn pedagogy and performance. For music majors only.

138 Trombone Class
1 hr.
Fundamentals of trombone pedagogy and performance. For music majors only.

139 Tuba Class
1 hr.
Fundamentals of tuba pedagogy and performance. For music majors only.

140 Music for the Classroom Teacher
4 hrs.
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.

150 Music Appreciation: Live Music
4 hrs.
An introduction to music and music literature in conjunction with attendance at music concerts and recitals on campus. Classroom discussion and readings will guide the student through a variety of listening experiences that will stimulate perception and enjoyment of music on a visual as well as aural level. This approach will also 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.

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 19th 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.

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.

160 Basic Music
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.

161 Basic Music
3 hrs.
A continuation of MUS 160. Includes the study of secondary dominants, augmented sixth chords, borrowed chords, and modulation to foreign keys. Prerequisite: MUS 160 with the grade of C or better.

162 Aural Comprehension
1 hr.
Training in the basic skills of music reading and ear-training. Prerequisite: Acceptance into MUS 160.

163 Aural Comprehension
1 hr.
A continuation of MUS 162. Prerequisite: MUS 162 with a grade of C or better.

185 Music Fundamentals for Dancers
1 hr.
After the basic concepts of staffs, clefs, pitch names, scales and meters have been learned, this course will emphasize rhythmic skills for score-reading. Concurrent with the development of these skills would be instruction in the basics of traditional musical forms: phrase, cadence, section, binary and ternary, and minuet forms. Prerequisite: Dance majors only.

190 Accompanying
1 hr.
Supervised experience in accompanying vocal and instrumental music, both solo and ensemble.

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: One year of music theory and ear-training (MUS 161, 163).

220 Keyboard Musicianship
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, sightreading and harmonization skills. Prerequisite: MUS 121 with a grade of C or better, or instructor consent.

221 Keyboard Musicianship
1 hr.
A continuation of MUS 220. Prerequisite: MUS 220, or instructor consent.

230 Italian and Latin 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 the respective fields of vocal literature.

231 French Diction
1 hr.
A phonetic approach to the pronunciation of French designed for singers. The performance of the language utilizes the song literature of major composers of the French chanson.

232 German Diction
1 hr.
A phonetic approach to the pronunciation of German designed for singers. The performance of the language utilizes the song literature of major composers of German lieder.
240 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 method and materials and various innovative approaches used in the general music class. 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: Instructor consent.

244 Elementary Music Practicum
3 hrs.
This course is designed to meet the needs of the elementary music teacher in the areas of theory and piano. Special emphasis given to keyboard facility in accompaniments in the elementary classroom. Prerequisites: Instructor consent.

260 Basic Music
3 hrs.
A continuation of MUS 161 designed to reinforce the melodic, harmonic and rhythmic concepts of traditional music by means of the composition and performance of several original works in specific forms, employing a variety of vocal and instrumental combinations. Prerequisite: MUS 161 with a grade of C or better.

261 Basic Music: 20th Century Techniques
2 hrs.
The study of the music of the Twentieth Century, particularly those melodic, harmonic, and rhythmic characteristics which define the music of that period. Important aspects of twentieth century music history will be discussed. Prerequisite: 161 with a grade of C or better.

262 Composition
2 hrs.
Beginning work in composition, with emphasis on the development of short works utilizing small instrumental combinations. Attention given to melodic, harmonic and harmonic devices. Prerequisite: MUS 161, or permission of instructor.

263 Composition
2 hrs.
A continuation of MUS 262. Prerequisite: 262.

264 Jazz Composition
2 hrs.
The fundamental aspects of composition in the jazz idiom, including harmonic progression, melodic design and rhythmic formulation. Intensive study will be made of well-known standard tunes as well as classic jazz compositions. All periods will be studied so that the student will have a well-grounded familiarity with basic compositional idioms, including the blues, standard AABA song forms, modal forms and more complicated sectional forms. All compositions created in class will be performed by the appropriate ensemble outside of class. Prerequisite: 161 with a grade of C or better.

270 Music History and Literature
4 hrs.
A brief study of non-Western music cultures, and a survey of Western music from earliest times to the 18th Century.

271 Music History and Literature
4 hrs.
A survey of Western music from 1700 to 1900.

279 Instruments of the Band and Orchestra
2 hrs.
Students survey the string, woodwind, brass and percussion instruments commonly used in the band and orchestra. The major aim of the course is to make the student aware of the unique sound which characterizes each instrument and how that sound is produced. In developing perception and discrimination in this regard, the student investigates such things as the acoustical properties of the instruments, the correct formation of the embouchure for the brasses and woodwinds, the techniques of bowing string instruments, and the physical attributes required to perform successfully on certain instruments. All will learn the proper techniques for playing various percussion instruments commonly used in the classroom and will be given the opportunity to explore one or more of the brasses and woodwinds. Prerequisite: Instructor consent.

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 meets for ten weeks. This course should be taken following or concurrent with PSY 194.

285 Musical Style and Form for Dancers
3 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: MUS 185.

289 Music Therapy Activities for Children
2 hrs.
This class will examine labels and categorizations involved in children populations, offer instruction in social-recreational skills, and allow for a more indepth study of appropriate music materials and activities, and allow for experience in designing and implementing music therapy procedures for specific populations and groups. Class times will be primarily used for in-class instruction with some selected help times to allow for more individualized instruction. Exams will be of a written, playing, and/or presentational format. Prerequisite: Instructor consent.

290 Music Therapy Activities for Adults
2 hrs.
This class will examine labels and categorizations involved in adult populations, offer instruction in social-recreational skills, and allow for a more indepth study of appropriate music materials and activities and allow for experience in designing and implementing music therapy procedures for individualized instruction. Exams will be of a written, playing and/or presentational format. Prerequisite: PSY 194.

300 Advanced Keyboard Musicianship
1 hr.
The course is especially designed to acquaint the student with various piano techniques and some functional piano skills. Prerequisite: "C" or better in 320 or instructor consent.

311 Instrumental 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. Each student will be sent into the local schools during the part of the course in order to work with younger students. Prerequisite: MUS 215.

331 Instrumental Conducting and Literature
2 hrs.
Beginning homogenous and heterogenous methods will be used to train students acting as conductor-teachers and playing secondary instruments. Literature appropriate to various levels of junior and senior high school bands and orchestras will be studied. Prerequisite: Instructor consent.

334 Jazz and Popular Solo Voice
1 hr.
The course will focus on the study of performance of songs in the popular and jazz idioms. Musical phrasing, emotional expression, vocal style, scat-singing, stage presence and use of microphones will be discussed. Prerequisites: MUS 160 or equivalent and consent of instructor. Voice majors must have sophomore standing.

340 Choral Methods
2 hrs.
Extensive involvement with actual teaching of vocal music in public schools is the central part of this course. In addition, the student will be exposed to various philosophies of vocal music. The student will be acquainted with such administrative duties as scheduling, budget, fund-raising, equipment purchase, and public relations. Technical problems such
as the changing voice and voice testing will be discussed. Material relating to job seeking and professional growth will also be covered.

344 Band Methods
2 hrs.
Extensive involvement with actual teaching of band in public schools is the central part of this course. In addition, the student will be exposed to various philosophies of instrumental music. The student will be acquainted with such administrative duties as budget, fund-raising, equipment purchase and inventory, instrument maintenance and repair (including actual experience with repair), and public relations. Job seeking and professional growth will also be discussed.

Prerequisite: MUS 159 or consent of instructor.

346 Marching Band Techniques
2 hrs.
The student will be required to learn the process of administering a complete marching band program. Course content will include philosophies of marching band programs, techniques of marching band organization and marching band show construction.

350 American Music
4 hrs.
A survey of the diverse styles of the music of the United States from the Pilgrims to the present. The development of popular music and jazz will be explored as well as that of church, band, and concert music. Folk song and regional styles will be observed as social-musical statements. Cultural change in this country's history will be viewed from the perspective of its musical heritage. Ability to read music is not required.

352 Non-Western Music
4 hrs.
A study of the traditional music of China, Japan, Southeast Asia, India and the Arabic countries, as well as 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 and a particular attempt will be made to understand the customs and attitudes of a people through their music.

360 Style Analysis
2 hrs.
An analytic study of the larger forms from the instrumental and vocal repertoire.
Prerequisite: MUS 260 with a grade of C or better.

362 Seminar in Music Composition
2 hrs.
Original work in composition accompanied by study and analysis of advanced 20th century compositions and creative concepts. May be repeated for credit. Prerequisite: MUS 263.

364 Seminar in Electronic Music Composition
2 hrs.
Original electronic music composition including a study of techniques since 1950, application of studio technique to sound production, and the operation of the synthesizer as a performance instrument. Advanced students will develop and submit an outline of a compositional project. The student will be assigned a number of hours weekly for independent work in the studio for realization of the project, which will receive periodic guidance and criticism from the instructor. May be repeated for credit. Prerequisite: MUS 263.

366 Instrumental Arranging
3 hrs.
A course designed to give the student experience in arranging music for instrumental groups with emphases placed on making effective use of the resources available in the average junior high and high school music situation. Prerequisite: MUS 161.

373 Creating Music in the Classroom
4 hrs.
Using the elements of music as a focus, students explore their creative potential by devising musical activities for use in the general music classroom. Because classroom experience in area schools is an integral part of the course, students must have functional piano skills. Prerequisite: MUS 244 or concurrently.

375 Twentieth Century Music Literature
2 hrs.
A chronological survey of 20th Century music literature through listening and analysis.

380 Psychology of Music
2 hrs.
Physical, psychological and physiological aspects of sound and systems of tonal relationships. The effects of music on the individual and the consideration of music as a form of communication; the nature and measurement of musicality; the nature of musical memory, the underlying bases for musical taste and for aesthetic experience in music with emphasis on cultural influences. Prerequisite: PSY 194.

383 Observation and Measurement in Music Therapy
1 hr.
Overview of techniques of behavior measurement and accountability paired with actual clinical observations. This course should be taken following or concurrent with MUS 281.

384 Music in Special Education
4 hrs.
Designed for teachers of exceptional children. Study of methods and materials for singing, rhythmic, and creative activities in classes for mentally and physically handicapped. The student learns functional use of piano and informal instruments. Values of musical activities for all exceptionalities are emphasized. For Special Education majors only. Substitutes for MUS 140.

450 Music Appreciation: The Symphony
3 hrs.
The course in THE SYMPHONY is a general music course which presents music for symphony orchestra from the listener's point of view. It deals with the materials, structure, texture, sonority, and style of orchestral music since the mid 18th century as well as the cultural milieu which gave rise to and brought about changes in musical style. Music reading ability not required. Not open to graduate music majors.

466 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.

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 and/or affiliated community agencies. Prerequisites: Music Therapy major.

473 Clinical Practicum in Music Therapy II
2 hrs.
A continuation of MUS 472. Prerequisite: Music Therapy major.

479 Influence of Music on Behavior
3 hrs.
A study of the relationship between music and personality of the function of music in personality adjustment and development. The study of research methods shall be pursued through analysis and evaluation of published studies, and skills essential to research shall be developed. Prerequisite: MUS 281 and 290.

480 Music Therapy Methods and Materials
3 hrs.
Survey of materials available for use in music therapy programs and methods of adapting such materials to institutional use. Study of publications and techniques developed specifically for use in music therapy programs. Prerequisite: MUS 382.

481 Music Therapy Internship
2 hrs.
A six-month internship at an approved state mental hospital.

490 Undergraduate Workshop in Special Problems
1-3 hrs.
Designed for students interested in some special field of music not formally listed for instruction. All special problems must be approved by the Director of the School of Music, but may be under the direct guidance of any member of the Music faculty. This course may be elected as many as three times.

Open to Upperclass and Graduate Students

518 Improvisation
2 hrs.
A course in the fundamentals of instrumental improvisation. Assignments will be made in such areas as improvisation in the early music tradition, improvisation on given melodic, harmonic, and/or rhythmic materials, as well as "free" improvisations. Prerequisite: MUS 161.
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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: MUS 330.

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: MUS 331.

540 Elementary School Music
2 hrs.
Emphasizes the place of music in the curriculum and the use of music in the day-to-day activities in the classroom. The fundamental musical skills are developed in order to assist the teacher to achieve these objectives.

542 Studies in Music Education: (topic)
2 hrs.
Topic to be announced. Selection will be made from the following or similar topics: Music in the Humanities, Evaluation of Music Education Materials, and Curriculum Planning for Innovation in Music Education. This course may be repeated to an accumulation of not more than 4 credits.

543 Research in the Psychology of Music
2 hrs.
Development and employment of research methods and techniques applied to the psychology of music. Experimental projects will be required in areas dealing with music and/or musical behavior. Prerequisite: MUS 380.

544 Music Education Materials: (topic)
2 hrs.
A study of the theoretical basis for and practice in analyzing and evaluating music for use in music education programs. This course may be repeated for a maximum of 4 credits.

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 161, C or better.

556 Advanced Jazz Arranging
2 hrs.
A study and application of the art of arranging for the jazz ensemble. This 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 264 (254 may be taken concurrently).

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: 161, C or better.

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: 558, C or better.

560 Counterpoint
2 hrs.
A study of the contrapuntal techniques of the 18th, 19th and 20th Centuries. Written assignments are closely correlated with the contrapuntal styles of significant composers. Prerequisite: MUS 161 with grade of C or better.

561 Counterpoint
2 hrs.
A continuation of MUS 560. Prerequisite: MUS 560.

562 Advanced Composition
2 hrs.
A study of twentieth century techniques in composition with original work in vocal and instrumental forms. Prerequisite: MUS 362.

563 Advanced Composition
2 hrs.
A continuation of MUS 562. Prerequisite: MUS 562.

566 Musical Acoustics
3 hrs.
A course designed for the music student. Discussion as well as laboratory demonstrations of such principles as: simple vibrating systems; waves and wave propagation; complex vibrations; resonance, intensity and loudness levels; tone quality; frequency and pitch; intervals and scales; tuning and temperament; auditorium and room acoustics; and psycho-acoustics. Prerequisite: MUS 161.

567 Orchestration
2 hrs.
A study of the characteristics of instruments, and of arranging for the various individual choirs, for combinations of choirs, and for full orchestra. Prerequisite: MUS 261.

568 Orchestration
2 hrs.
A continuation of MUS 567. Prerequisite: MUS 567.

570 Introduction to Musicology
3 hrs.
History, purposes, scope of musicology; leading historians, past and present, modern methods of research, with special emphasis on primary sources and bibliography of the field.

571 Introduction to Musicology
3 hrs.
A continuation of MUS 570. Prerequisite: MUS 570.

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 271.

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 271.

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 271.

575 Musicology and Research
2 hrs.
Presentation of musicological material in formal writing as well as informal classroom lecture; specific research projects with emphasis on selection and qualitative judgment of materials used.

576 Musicology and Research
2 hrs.
A continuation of MUS 575. Prerequisite: MUS 575.

577 Symphonic Literature
2 hrs.
A survey of music written for symphony orchestra during the Classic and Romantic periods.

578 Chamber Music Literature
2 hrs.
A survey of chamber music literature of the Classic and Romantic periods.

579 Operatic Literature
2 hrs.
A survey of opera from 1600 to the present.

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 271.

581 Choral Music Literature
3 hrs.
A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period.

582 Western Music Before 1600
4 hrs.
A survey of music to 1600. Major developments in style, notation and performance practices will be stressed using works of theorists and primary manuscript sources.

583 Jazz History and Literature
4 hrs.
A survey of the history of jazz including aspects of sociology and history as they relate to the art form of jazz. All periods in jazz history, from its earliest roots in Africa and the slave culture in the United States, up through the blues, dixieland, swing, bop, mainstream and the more eclectic period of jazz rock and free-form jazz will be explored. Important works will be examined from each period in order to grasp the essentials of a particular style.

590 Studies in Pedagogy
1-4 hrs.
Topics to be announced. Selection will be made from the following: Piano Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. May be repeated for credit. Prerequisite: 300 level applied voice or permission of instructor.
Theatre (THEA)

D. Terry Williams, Chair
Daniel Fleschhacker
Russell J. Grandstaff
David Kanstein
Benjamin Levenberg
Greg D. Roehrick
Lyda Stillwell
Vern Stillwell
Robin VerHage
Judith K. Masse, Secretary

The Department of Theatre offers programs leading to Bachelor of Arts and Bachelor of Science degrees. Students should refer to degree and General Education requirements within this catalog for specifics. The Department of Theatre concentrates on undergraduate programs that stress the interdependency of academic and production experiences, the importance of a broad theatre background, and the mastery of theatre fundamentals in preparation for the more advanced theatre training offered in graduate schools or professional theatre internship/apprentice programs.

Opportunities for participation in the production program begin with the freshman year. The department presents six faculty-directed productions on the mainstage season, and several productions in the Studio Series. Additional plays are presented in the laboratory theatre program and in the directing classes. All regularly enrolled students in good academic standing are eligible to participate in these productions.

Admission as a major
Enrollment in the theatre curriculum is contingent upon admission to the University and the approval of the Department of Theatre. Information regarding application is available on request through the department office. Information regarding admission and transfer credit may be obtained by contacting the theatre adviser at the Department of Theatre office at Shaw Theatre.

Advising
Adviser: Dr. Daniel Fleschhacker
Shaw Theatre: (616) 383-1760

The department adviser will assist any student enrolled in the University with course selections in theatre. Appointments are made through the departmental secretary. Theatre majors and minors must confer with the theatre student adviser, 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.

Programs
The Department of Theatre offers curricula including two majors and two minors.

Theatre Major

50 credit hours
This program is designed for 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 acting and directing, or design and technical theatre.

Required Courses: Hrs.
120 Theatre Production .................. 3
125 Stagecraft I ......................... 3
140 Elements of Stage Acting .......... 3
175 Script Analysis ...................... 3
230 Stage Makeup ....................... 3
235 Theatrical Costuming ............... 3
324 Stage Lighting and Sound .......... 3
327 Scenic Design ....................... 3
355 Directing I ........................ 3
370 History of Theatre I ................. 3
371 History of Theatre II ................ 3
470 Development of Theatre Art ....... 3
Electives arranged with departmental adviser .................. 14
Total 50

A grade of "C" or better is required in all courses.

Major Emphases

Acting/Directing Emphasis

First Year
Fall
120 Theatre Production (core) ........ 3
140 Elements of Stage Acting (core) 3
175 Script Analysis (core) ............. 3
Suggested: ENG 105 Thought and Writing
Winter
125 Stagecraft I (core) ................. 3
147 Body Dynamics for the Actor (required of acting/directing emphasis) ........ 3
Suggested: ENG 252 Shakespeare

Second Year
Fall
210 Improvisation (required of acting/directing emphasis. May be taken either fall or winter semester) 3
235 Theatrical Costuming (core) ...... 3
241 Voice Dynamics for the Actor (required of acting/directing emphasis) ........ 3
324 Stage Lighting and Sound (core) 3
Winter
230 Stage Makeup (core) ............... 3
246 Characterization (required of acting/directing emphasis) .................. 3
327 Scenic Design (core) ............... 3
All acting/directing emphasis majors are reviewed by the performance staff in Thea 246. A satisfactory review is needed before the student may elect upper level acting courses.

Third Year
Fall
341 Special Techniques of Physical Characterization (elective) .......... 3
355 Directing I (core) ................. 3
370 Theatre History I (core) .......... 3
Winter
346 Performing Period Styles (elective) .......... 3
356 Directing II (elective) ............ 3
371 History of Theatre II (core) ....... 3

Fourth Year
Fall
400 Special Topics: Topic in Acting or Directing (elective) .......... 3
440 Acting Studio (elective) .......... 3

Design Emphasis

First Year
Fall
130 Stagecraft I (core) ................. 3
134 Scenic Design (core) ............... 3
Winter
135 Theatrical Costuming (core) ...... 3
175 Script Analysis (core) ............. 3
230 Stage Makeup (core) ............... 3
237 Technical Lighting (core) ......... 3
Suggested: ENG 105 Thought and Writing

Second Year
Fall
210 Improvisation (required of acting/directing emphasis. May be taken either fall or winter semester) 3
235 Theatrical Costuming (core) ...... 3
241 Voice Dynamics for the Actor (required of acting/directing emphasis) ........ 3
324 Stage Lighting and Sound (core) 3
Winter
230 Stage Makeup (core) ............... 3
246 Characterization (required of acting/directing emphasis) .................. 3
327 Scenic Design (core) ............... 3
All acting/directing emphasis majors are reviewed by the performance staff in Thea 246. A satisfactory review is needed before the student may elect upper level acting courses.

Third Year
Fall
341 Special Techniques of Physical Characterization (elective) .......... 3
355 Directing I (core) ................. 3
370 Theatre History I (core) .......... 3
Winter
346 Performing Period Styles (elective) .......... 3
356 Directing II (elective) ............ 3
371 History of Theatre II (core) ....... 3

Fourth Year
Fall
400 Special Topics: Topic in Acting or Directing (elective) .......... 3
440 Acting Studio (elective) .......... 3

Technical Emphasis

Third Year
Fall
340 Lighting Design (core) .......... 3
346 Performance Period Styles (elective) .......... 3
Winter
356 Directing II (elective) ............ 3
371 History of Theatre II (core) ....... 3

Fourth Year
Fall
400 Special Topics: Topic in Acting or Directing (elective) .......... 3
440 Acting Studio (elective) .......... 3

Artistic Emphasis

First Year
Fall
120 Theatre Production (core) ........ 3
140 Elements of Stage Acting (core) 3
175 Script Analysis (core) ............. 3
Winter
125 Stagecraft I (core) ................. 3
147 Body Dynamics for the Actor (required of acting/directing emphasis) ........ 3
Suggested: ENG 252 Shakespeare

Second Year
Fall
210 Improvisation (required of acting/directing emphasis. May be taken either fall or winter semester) 3
235 Theatrical Costuming (core) ...... 3
241 Voice Dynamics for the Actor (required of acting/directing emphasis) ........ 3
324 Stage Lighting and Sound (core) 3
Winter
230 Stage Makeup (core) ............... 3
246 Characterization (required of acting/directing emphasis) .................. 3
327 Scenic Design (core) ............... 3
All acting/directing emphasis majors are reviewed by the performance staff in Thea 246. A satisfactory review is needed before the student may elect upper level acting courses.

Third Year
Fall
341 Special Techniques of Physical Characterization (elective) .......... 3
355 Directing I (core) ................. 3
370 Theatre History I (core) .......... 3
Winter
346 Performing Period Styles (elective) .......... 3
356 Directing II (elective) ............ 3
371 History of Theatre II (core) ....... 3

Fourth Year
Fall
400 Special Topics: Topic in Acting or Directing (elective) .......... 3
440 Acting Studio (elective) .......... 3
Winter
400 Special Topics: Topic in Acting or Directing (elective) 440 Acting Studio (core) 470 Development of Theatre Art (core)

Design/Technical Theatre Emphasis
First Year
Fall 140 Elements of Stage Acting (core) 175 Script Analysis (core) Suggested: ENG 105 Thought and Writing CHEM 107 Chemistry of Textiles and Design Materials
Winter 120 Theatre Production (core) 125 Stagecraft I (core) Suggested: ITE 190 Crafts and Adapted Techniques (scenery and lighting interest) CRT 124 Clothing Construction (costume interest)

Second Year
Fall 225 Stagecraft II (required of Design/Technical Theatre emphasis) 235 Theatrical Costuming (core) 370 Theatre History I (core) Suggested: ART 102 Foundations of Design (2D)
Winter 226 Drafting and Color Media (required of Design/Technical Theatre emphasis) 371 Theatre History II (core) Suggested: 175 Script Analysis 3

Third Year
Fall 324 Stage Lighting and Sound (core) 336 Costume Design (elective) Suggested: ART 220 History of Art
Winter 327 Scenic Design (core) 390 Professional Theatre Internship Suggested: ART 221 History of Art

Fourth Year
Fall 355 Directing I (core) 427 Advanced Design (elective) Winter 425 Advanced Technical Problems or 430 3-D Makeup (elective) 470 Development of Theatre Art (core)

Theatre Education Major
30 credit hours
A major for students planning to teach and direct theatre programs in secondary or elementary schools.
Required Courses: Hrs.
120 Theatre Production 3 125 Stagecraft I 3 140 Elements of Stage Acting 3

175 Script Analysis 3 230 Stage Makeup 3 235 Theatrical Costuming 3 324 Stage Lighting and Sound 3 327 Scenic Design 3 355 Directing I 3 370 or 371 History of Theatre I or II 3

A grade of “C” or better is required in all courses. A teaching methods course must be arranged with the departmental adviser. Students electing this major are strongly urged to minor either in English or Communication Arts and Science in order to increase the breadth of their general speech and/or English background and enhance their prospects for employment in the teaching profession.

Note: To teach theatre/speech/communication in a school accredited by the North Central Association, teachers are required to have either 24 semester hours in speech/communication or 20 semester hours in speech/communication and 4 semester hours in English. Courses in theatre and communication are counted as courses in speech for purposes of state certification. All teachers to be certified must meet requirements of the University, the College of Education, and the State Board of Education.

Theatre Minor
24 credit hours
This program is designed to offer the student a core of three required courses totalling 9 hours with the remaining 15 hours arranged in consultation with the departmental adviser. Students may plan their electives in acting/directing, design/technical theatre, or a combination of both. Students may elect THEA 290, Theatre Practicum, or THEA 490 Individualized Study in Theatre in this minor.

Required Courses: Hrs.
120 Theatre Production 3 140 Elements of Stage Acting 3 175 Script Analysis 3 Electives in Theatre 3

Total 24

Theatre Education Minor
24 credit hours
Required Courses: Hrs.
120 Theatre Production 3 125 Stagecraft I 3 140 Elements of Stage Acting 3 175 Script Analysis 3 230 Stage Makeup 3 235 Theatrical Costuming 3 324 Stage Lighting and Sound 3 355 Directing I 3

Total 24

Theatre as an Elective
The department offers courses for students who want to explore specific areas of theatre, broaden their background and appreciation of theatre, and/or acquire skills in a particular area.

Recommended Courses: Hrs.
100 Introduction to Theatre 3 110 Explorations in Performance 3 120 Theatre Production 3 175 Script Analysis 3 210 Improvisation 3 230 Stage Makeup 3 370 History of Theatre I 3 371 History of Theatre II 3

Theatre 100, Introduction to Theatre, may be used to satisfy a General Education requirement.

Course Descriptions
(Courses described in italics are approved for General Education.)

100 Introduction to Theatre 3 hrs.
Considered 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.)

110 Explorations in Performance 3 hrs.
Instruction and practice in the various forms of performance for non-theatre majors.

120 Theatre Production 3 hrs.
An introductory course in the principles and practices of theatre production. Available to secondary education majors in CAS and English.

125 Stagecraft I 3 hrs.
A beginning course in technical production including familiarization with theatrical equipment and materials, planning and construction of basic stage scenery, and laboratory work in University Theatre productions. Lab fee $10.00. Prerequisite: THEA 120.

140 Elements of Stage Acting 3 hrs.
Study and practice of the basic principles of acting.

147 Body Dynamics for the Actor 3 hrs.
An introductory course stressing the interrelationship of body and voice in stage performance. Prerequisite: 140.

175 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.

210 Improvisation 3 hrs.
Techniques of improvisational performing. This course includes spontaneous and planned exercises to evoke and inspire the actor’s capacity for imaginative inventiveness and sense of ensemble. Prerequisite: 147 or consent of instructor.

225 Stagecraft II 3 hrs.
A course in technical production including the planning, construction and painting of complex stage scenery, and laboratory work in University Theatre productions. Lab fee $10.00. Prerequisite: 125 or consent of instructor.

226 Drafting and Color Media 3 hrs.
A methods course for beginning students in scenic, costume, lighting design, and technical production. This course provides instruction and practice in the use of various color media for design renderings, the techniques which apply to scale models, and theatrical drafting. Prerequisite: 125 or consent of instructor.
230 Stage Makeup
3 hrs.
Study and practice of the basic principles and techniques of stage makeup. Lab fee $20.00.

235 Theatrical Costuming
3 hrs.
An introductory course in the creation of costumes for the stage, including study and practice in costume construction and basic principles of costume design and laboratory work in the University Theatre. Prerequisite: 120 or consent of instructor.

241 Voice Dynamics for the Actor
3 hrs.
Techniques for the training and use of the actor’s voice with continued emphasis on the interrelationship of the voice and body. Prerequisite: 147.

246 Characterization
3 hrs.
This course integrates theories of acting, body dynamics, voice dynamics, and improvisation in the process of role study and development. Satisfactory staff evaluation of this course is required to elect upper-level acting courses. Prerequisites: 175, 210, 241.

290 Theatre Practicum
1-2 hrs.
Supervised experience in one or more areas of theatre in the University Theatre program. Nature of involvement determined by student-teacher contract. May be repeated for credit up to a maximum of six semester hours. Prerequisite: consent of instructor.

324 Stage Lighting and Sound
3 hrs.
A course in the design of theatre lighting and sound and in the practical application of those designs to the stage. Includes laboratory practice in the staging of University Theatre productions. Prerequisite: 125; (226 recommended) or consent of instructor.

327 Scenic Design
3 hrs.
A course in scenography covering the design of stage settings and properties, including further development of skills in rendering, the scenic model, and theatrical drafting. Prerequisite: 324 or consent of instructor.

336 Costume Design
3 hrs.
A course in the design of stage costumes and accessories. Prerequisites: 235 (226 recommended) or consent of instructor.

341 Special Techniques of Physical Characterization
3 hrs.
Exercises in the use of character masks, pantomime, stage combat, and techniques to aid physical characterization. Prerequisite: 246.

346 Performing Period Styles
3 hrs.
Study and practice of acting in plays from selected major periods of theatre activity prior to the 20th century. Topics may include Greek, commedia dell’arte, Shakespeare, Moliere, Restoration, and examples from 18th and 19th century drama. Prerequisite: 246.

355 Directing I
3 hrs.
Functions of the play director as teacher, interpreter, coordinator, and collaborator. Focus is upon principles and problems of directing. Students prepare and direct scenes from realistic plays. Prerequisite: THEA 120, 140, 175, junior/senior standing or above.

356 Directing II
3 hrs.
A continuation of THEA 355. Students prepare and direct one short realistic play and one short nonrealistic play. Prerequisites: THEA 355, or consent of instructor.

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.

371 Theatre History II
3 hrs.
Survey of theatre history from 1642 to the 20th century. Playwrights, acting styles, theatre production, theatre architecture and audience taste are studied. Theatre 371 may be taken without first having taken Theatre 370.

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 applied to a major in theatre. Prerequisite: Consent of Internship Coordinator.

400 Special Topics in Theatre
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, technical direction, advanced lighting, sound design. Prerequisites: variable.

425 Advanced Technical Problems
3 hrs.
An investigation of the application of modern materials and techniques to the problems of technical theatre production. Prerequisite: 225 or 327 or consent of instructor.

427 Advanced Design
3 hrs.
A course for advanced students in the design of scenery, costumes, lighting, and properties, the professional drafting of those designs, for theatre production, and the presentation of the designer’s resume and portfolio. Prerequisites: 324 or 327 or 336 or consent of instructor.

430 3-D Makeup
3 hrs.
An advanced laboratory for the design and construction of three dimensional makeup. Prerequisite: 246 or consent of instructor.

440 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. Prerequisite: 246.

470 Development of Theatre 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: 370 or 371, or consent of instructor.

490 Individualized Study in Theatre
Variable
Designed to enable upper division theatre majors 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. Up to 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 departmental chair and supervising instructor.
Goals of the College

1. The goals of the College of General Studies will be compatible with the goals of the University.
2. The most comprehensive goal of the College of General Studies is to assist students in developing the ability to think critically and to engage successfully in intellectual pursuits. The General Studies program seeks to engender the disposition to seek knowledge and the habit of bringing knowledge of all kinds to bear on decision making.
3. The College of General Studies aims to assist students in developing confidence in their ability to make judgments while acquiring a willingness to reconsider their judgments in the light of new insights, information, and patterns of values.
4. The College of General Studies acknowledges positively more than one mode of inquiry and encourages exploration of cross- and transdisciplinary interests and programs of study.
5. The College of General Studies maintains a coherent program that assists students in developing a responsible awareness of themselves as human beings and of their social and physical environments.

Within the framework of these goals, the faculty of the College has developed individual courses for the Distribution Program and the Integrated Program. These provide alternate choices for students in meeting their general education requirements. Students who select the Distribution Program choose from among interdisciplinary courses offered by Humanities, Science, and Social Science, and from among General Purpose courses which apply toward general education area requirements. The Integrated Program option provides students with a unique and concise way of satisfying those same requirements.

Integrated Program

Nita H. Hardie, Director

The program consists of a series of interrelated courses, designed to assist students in seeing the interconnections among the various ways of knowing. Students examine the value each disciplinary perspective brings to the study and understanding of a given topic. Through the cooperative and coordinated efforts of faculty, students engage in learning experiences which are designed to foster their ability to think critically, to synthesize information, and to become more effective in problem solving and decision making. Attention is also given to the development of communication skills.

Students who successfully complete the three entry courses meet the college level writing requirement of the University Intellectual Skills Program. Students receive certification on their university records upon successful completion of the Integrated Program.

Requirements for the Integrated Program
(Students must contact the program advisor for formal admission.)

Beginning Level (Students must complete by the end of their sophomore year) Students who successfully complete the beginning courses meet the college level writing requirement of the University Intellectual Skills Program.
GHUM 102, GSCI 132, GSSC 121 ... 12 hrs.

Intermediate Level
GHUM 101, GHUM 200
or GHUM 302 ... 4 hrs.
GSCI 131, GSCI 133 or GSCI 433 ... 4 hrs.
GSSC 123, GSSC 256 or GSSC 325 ... 4 hrs.
GENL 304 or GENL 305 ... 4 hrs.
Elective from Program offerings ... 4 hrs.

Advanced Level
GINT 490 ... 4 hrs.

Admission and Advising

The Integrated Program is open to enrollment by all students. For questions regarding Integrated Program requirements, and Beginning Level course transfers to the Distribution Program, contact Ms. Pearl Baskerville-Robinson, Integrated Program Advisor, 2090 Friedmann Hall, Phone: 383-0941.

Course Descriptions

(Courses described in italics are approved General Education.)

Integrated Program (GINT)

490 Capstone Seminar
4 hrs.

Students will explore contemporary issues by applying the skills and insights acquired earlier in the Integrated Program. Each student will be required to compose and present for approval a Senior Thesis. (Open only to students who have completed Levels I and II of the Integrated Program.)
General Purposes (GENL)

151 Library Resources I
1 hr.
Students will be introduced through lectures, projects and exercises, to materials, methods and people that can help them find what they want in the library. They will become acquainted with (1) library organization, including the card catalog, (2) forms of publication—books, documents, periodicals, microforms, etc.; (3) indexes, bibliographies, on-line computer retrieval systems and other reference tools which aid in the pursuit of information; (4) strategies for using the library effectively. All of this is intended to help students with their course work and to pursue their personal and career interests in the future. Does not count for General Education. Cannot be repeated for credit.

195 Methods of Inquiry
4 hrs.
An introduction to independent study techniques, with emphasis on asking questions and locating sources of information. Students will design an independent study project and do some preliminary investigation in their field of interest.

222 The Status of Women
4 hrs.
This course is designed as a general exploration of the content and the effect (including affect) of the traditional definition of “woman.” Attention is given to such sources as law, religion, literature and art, mass media, psychology, biology, and social conventions, and to the social processes which transmit and reinforce sex role behavior.

304 Introduction to the Non-Western World
4 hrs.
A survey of the traditional cultures of certain major societies which have developed essentially apart from the stream of Western civilization. This is followed by an analysis of the Western impact on these societies and their reactions thereto, and by a study of contemporary social, economic, and political problems of Non-Western countries.

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.

333 American Studies
1-4 hrs.
A variable topics course reflecting the broad range of the American cultural experience. Although the topics may vary, the objective is to broaden our understanding of America through the wide range of themes that such a course affords. Topics might include: Film and American Life, Sports as American Metaphor, the American Way of Death; the World of American Mystery Fiction; America through Photography; Country Music and the American Scene, and American Humor, Wit and National Character. May be repeated for credit when topic changes. Does not count for General Education.

341 Library Resources II
2 hrs.
Students are asked to select a section of the course that emphasizes either the humanities, the social sciences or the sciences. Students will be introduced through lectures, exercises and a term project to some of the standard reference sources and the basic library research methods in the field emphasized in their section of the course. This course is intended to be of immediate use to students who have specific library needs related to courses in their fields. The course is also intended to provide a broad acquaintance with aids to research in the various disciplines, which are useful for general as well as specialized inquiry, resulting in insight as well as skill. Does not count for General Education credit. Cannot be repeated for credit.

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 General Studies Faculty and the office of the Dean of the College. May be repeated for credit. This course will not be accepted for General Education credit without the approval of the Coordinator of General Education Advising.

Humanities (GHUM)

Phillip D. Adams
Lynwood H. Bartley
Lewis H. Carlson
Joseph M. Condic
Beverly P. David
Audrey Davidson
Richard dePauw
Howard Dooley
James M. Ferrera
Reginald Gammon
Arnold Gersten
Gilda Greenberg
Richard Joyce
Harvey Overton
Dale H. Porter
Larry tenHarmsel

Humanities courses are concerned with expressions of human values in their cultural contexts. In every culture there are people who ask: what is the meaning of our lives? What is human life worth? Humanities courses examine, usually through a historical perspective, a variety of intellectual, emotional, spiritual, and imaginative responses to those questions. The values associated with such respones are explored in order to provide perspectives for the student’s own judgments. Humanities courses are interdisciplinary. Their emphasis is often on the arts, but always in relation to the ideas and conditions of particular cultures or historical periods. Questions of value also extend to the study of mass media and human communication. Science, technology, and social science may be used to illuminate the contexts in which ideas, values, and artistic images are expressed.

Course Descriptions

(Courses described in italics are approved for General Education.)

101 Introduction to Humanities
4 hrs.
A study of one or more of the following themes: love, death, heroism, morality, and freedom, as they have appeared in myth, philosophy, religion, and the arts.

102 Direct Encounter with the Arts
4 hrs.
A course that uses a direct approach to introduce students to their cultural world by guiding them through first-hand experiences in a number of arts: cinema, photography, theater, sculpture, music, poetry, dance, and architecture. Classroom discussions are held following the students' participation in the various art events scheduled each semester, with students expected to write journals or response papers about the major events of the course. There will be a course charge in lieu of textbooks.

200 Arts and Ideas
(variable subsections)
4 hrs.
A Classical to Renaissance
This course, by showing the key stages in the interplay of religion, science, philosophy, and the arts from the age of Socrates to the Renaissance, explores the background of the modern look. It will show that the values and perceptions of life that seem so natural to us today are the results of centuries of insight and controversy.

222 The Status of Women
4 hrs.
A variable topics course reflecting the broad range of the American cultural experience. Although the topics may vary, the objective is to broaden our understanding of America through the wide range of themes that such a course affords. Topics might include: Film and American Life, Sports as American Metaphor, the American Way of Death; the World of American Mystery Fiction; America through Photography; Country Music and the American Scene, and American Humor, Wit and National Character. May be repeated for credit when topic changes. Does not count for General Education.
222 COLLEGE OF GENERAL STUDIES

B Renaissance to Modern Times
A continuation of GHUM 200A, from the Renaissance to the Twentieth Century. May be taken separately; GHUM 200B is not a prerequisite.

C Twentieth Century
A continuation of 200A and 200B, with the emphasis on a comprehensive examination of selected arts of modern western culture (four from among the following: architecture, dance, film, literary arts, music, painting, and sculpture), demonstrating their relationship to the major intellectual and social currents of the twentieth century. May be taken separately from GHUM 200A and GHUM 200B, neither of which is a prerequisite.

302 American Culture
4 hrs.
A study of significant concepts in American life focusing on the relationship of the individual to society as seen from the perspectives of literature, the arts, and social and political theory.

315 Human Communication
4 hrs.
An investigation of the processes by which people use symbol systems, centrally concerned with both personal and cultural communication behavior. The course is intended to increase understanding of and sensitivity to communication processes and their limitations through increasing the student’s consciousness of their own communication behavior and through exposing them to the ideas of various communication specialists.

316 Mass Media: Messages and Manipulation
4 hrs.
An examination of mass communication in general and of particular mass media. Students will consider the processes, effects, and functions of mass media, and their personal responses to these, through considering relevant scholarship from such diverse fields as sociology, history, psychology, anthropology, art, and literature.

400 The Twenties
4 hrs.
A study of one of the creative and explosive decades in modern times. The growth of jazz and modern art, Prohibition, the New Woman, the Klan, the Red Scare, the movies—this and more serve as a basis for comparison with our own times.

401 Depression and War: The Thirties
4 hrs.
This course will be an interdisciplinary examination of the 1930’s, focusing on America during the Great Depression and the Second World War.

409 Women: Past, Present and Future
4 hrs.
This course will concern itself with the subject of “women” as a legitimate field for scholarly inquiry in order to establish the facts and explore the myths of woman’s role in Western Culture. The approach will be interdisciplinary: historical for background, biological to explore facts versus myths, art/culture models, literary tradition, changing social forces and the contemporary world of female consciousness.

Science
(GSCI)

Shirley Bach
Carly J. Engels
Franklin G. Fisk
Ronald Flaspholer
David Hargreave
Robert H. Poel
Michael D. Swords
Joanne Ursprung

An important part of the general education of a person is an understanding of the science and technology that have had such a tremendous impact on our daily lives and on the shaping of our culture. The main emphasis of some Science Area courses is comprehension of the development of scientific thought and the relationship of science to other aspects of our cultural development.

Other courses consider recent discoveries and technological advances. Also considered are the possible environmental or social consequences of applying these advances. The scientific knowledge necessary to understand the new technology is presented. This is followed by exploration of different points of view and the evolution of alternate solutions in terms of practical considerations and moral and ethical values.

Other courses are directed toward students in elementary education. Science concepts and processes are considered in the context of new elementary science programs that see science as a vital part of the general education of children.

Course Descriptions

107 Planetary Science in Elementary Education
4 hrs.
An interdisciplinary study of the earth, atmosphere, solar system and universe and the relationships and interactions among these. Taught by cooperating faculty from four departments, the course will provide a survey of geology, meteorology and climatology, and astronomy. Students will study each of these topics for five weeks with different instructors. Classes will be limited to 30 students in order that instructors may use techniques which emphasize the relevancy of their disciplines in elementary education and its significance in the present and future lives of children. (No prerequisite) Not recommended for science majors.

130 Social Issues in Physical Science
4 hrs.
A course designed to look at current science related problems of society having their factual core of knowledge in the physical sciences. Sufficient understanding of this knowledge is acquired to give non-scientists an understanding of the trade-offs resulting from alternative attempts to solve a problem. Emphasis will be placed on understanding the scientific enterprise, how it relates to modern technology, and how both relate to people and to societal issues.

131 Physical Science in Elementary Education
4 hrs.
This course is designed to introduce students to some of the broad concepts of physical science and to the methods of inquiry that have been useful in developing these concepts. Student experiences are designed to further understanding of the interrelationships between the physical sciences and society, as well as those between the physical sciences and the elementary general education, and will be taught in laboratory groups no larger than thirty. Because of its broad based nature, this course is especially valuable for elementary education minors and at the same time appropriate for majors and minors in all fields of endeavor.

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 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.

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, controlling population size, genetic engineering, controlling environmental factors affecting health and disease, and the ethical and moral concerns implicit in these.

134 Problem-Solving and Decision-Making
4 hrs.
This course helps students become more proficient in the essential skills of solving problems and making decisions, at a professional level, as well as personal and social levels. It accomplishes this through the study of many approaches and techniques, including those used with great success in science and technology. It also provides an understanding of simple number tools and relationships, necessary for interpreting information, as aids to problem-solving and decision-making.

231 Physical Science in Elementary Education II
4 hrs.
This course is a continuation of GSCI 131, Physical Science in Elementary Education for those students who desire or need further study in the concepts and methods of the physical sciences. Instruction will be in laboratory sections no larger than 30 and an inquiry learning-by-doing approach will be utilized. This course will further elaborate on some concepts introduced in GSCI 131 and will also introduce additional important concepts in the physical sciences. (Prerequisite GSCI 131 or consent of instructor.)
432 Science and Parascience
4 hrs.
The goal of this course is to examine open
mindedly several "alternate visions" of the
nature and origin of human life in the light of
science's attitudes and objectives. Topics
examined: astrology, future-prediction
"harmonies" between entities, ESP,
telepathy, the aura, PK, UFOs, extraterrestrial
life, ancient astronauts, and others.

433 Science, Technology, and Society
4 hrs.
This course consists primarily of seminars and
discussions centering on scientific and
technological impacts upon contemporary
society, viewed from a variety of
perspectives. One objective will be to assist
the student in acquiring knowledge about
current scientific and technological problems.

434 Biomedical Ethics and Society
4 hrs.
The course concentrates on contemporary
scientific and ethical issues in biomedicine.
Some issues involved are: new reproductive
technologies and their appropriate use;
experimentation on human subjects (the
meaning of informed consent, risks and
benefits); new technologies to extend life and
the quality of life extended; biological
engineering; death, transplantation, and
resource allocation; ethical aspects of
biomedical innovation.

436 The Search for an Ecological
Conscience
4 hrs.
This is a lecture/discussion course designed
to explore the means whereby humans can
develop a more responsible and compas-
sionate relationship with their non-human
fellow passengers on spaceship earth. The
essential elements of an ecological
awareness are developed, the relationship
between awareness and conscience
delineated, and the fusion of all into an
ecologically sane lifestyle explored.

Social Science
(GSSC)

Do Young Chang
Sush Datta-Sandhu
David DeShon
Gilda Greenberg
Norman Greenberg
Bruce Haight
Barbara Havira
Arthur Helweg
Charles Houston
Lawrence Israel
Patricia Klein
Hung Peng Lee
Lawrence Tyler

The primary focus of social science is the
realm of human experience. Within this field
of study, of special concern is the analysis of
the social processes that link all human
beings. The empirical, data-based approach
that characterizes social scientific inquiry
seeks to foster a better understanding of the
emergence and nature of the regularities of
human life.

The main objective in the teaching-learning
process is to facilitate the development of
social self-consciousness, an awareness that
individuals experience life and define and
express their humanity within a human group
that is part of a larger social network. To
achieve this, social science courses are
designed to provide the student an
opportunity to examine the cultural relative-
ty of behavior, ideas, and values as well as the
dynamic and continuing processes by which
these are diffused across cultures, the idea
that humanness has a socially determined
and historical, as well as individual, basis, the
view that there are reciprocal influences of
environmental settings, cultural processes,
social forces, and individual expression, the
view that the social processes of any group
tend to define the limits of individual activity;
the importance of an empirical analysis of
private and social perspectives as well as the
predictions that these permit, perspectives
which go beyond the specificities of the
regular social science disciplines; and
experience-based views of social reality that
are placed into juxtaposition with one or
more theoretical formulations of social
processes, the views of student peers, and
those of the instructor.

Course Descriptions

(Courses described in italics are approved for
General Education.)

121 Dimensions of Human Behavior
4 hrs.
A series of learning experiences designed to
explore the social, psychological, and cultural
dimensions of human behavior, using both
individual and group approaches to learning.
The emphasis is upon those social processes
which impose restraints upon human behavior.

123 Human Society
4 hrs.
A study of the biological and social aspects of
human diversity. Discussions of the
structure of society and its institutions will
give special attention to such contemporary
topics in the American scene as values,
political and economic systems, ethnic
relations, environmental quality.

256 Beyond Survival
4 hrs.
As Rene Dubos has suggested, the real issue
is not "Will humanity survive?" but rather
"What can be the quality of life available to the
survivors?" This question will form the
substance of the content of this course.

325 Self-Images and Social Images
4 hrs.
An inter-disciplinary inquiry into the self-
images of persons, their social origin and
change, and ways the perception of other
persons, groups, and social events and
issues are relative to perceptions of one's
self. The aim is an understanding of factors
that influence our own and other persons'
perceptions and the form and quality of the
self-images and images of the social world.

350 From the Twentieth to the
Twenty-First Century
4 hrs.
This course will study the period in human
history which is now being experienced by
living generations and which will arrive, in
differentiated patterns, during their lifetimes.
The course will demonstrate how three
factors—energy, natural resources and
technology—are interrelated and central to
the affluent way of life typifying modern
industrial civilization and how the changing
patterns of these interrelationships will lay the
base for what is to come.

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.

425 Theories of Human Behavior
4 hrs.
A critical inquiry into the development of
social science method and theory with a
focus on key individuals who have influenced
the directions of present day inquiry.

444 Female and Male:
Psychological Perspectives
4 hrs.
This course will examine traditional and
contemporary psychologial theories and
related research on women and men. The
course will investigate age-old assumptions
about sex roles and sex identity through an
analysis of the psychological literature of the
20th Century.
The College Faculty
Morton Wagenfeld
Richard Williams

The College of Health and Human Services provides programs in Alcohol and Drug Abuse and Holistic Health Care (both at the graduate level), Blind Rehabilitation and Mobility, Gerontology, Medical Technology, Occupational Therapy, Physicians’ Assistants, Social Work, and Speech Pathology and Audiology. Through these professional programs, education, research, and community assistance in health and human services are provided. The programs cover direct service roles in the health and human service professions, as well as functions of policy development, planning, and administration. Students may earn the degrees of Bachelor of Arts and Science; Master of Arts in Blind Rehabilitation, Occupational Therapy, and Speech Pathology and Audiology; and Master of Social Work through their studies.

Mission
The mission of the College of Health and Human Services at Western Michigan University is to contribute to improvement of the quality of health and human services in the Western 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 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 overall quality of life in general.

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 our 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, school 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.

College Course Descriptions (HHS)

511 The Health System and Its Environment
3 hrs.
This course provides a descriptive analysis of the organization of the health system. The student who participates can expect to gain an understanding of the structure of health services as well as the processes of operation of the service system and the ways in which consumers make use of the system. The analysis focuses on the interplay of the forces within the system as well as behind the system and its environment.

512 Health Resources Administration
3 hrs.
This course is an introduction to principles and problems of health resources administration. The course focuses on two major areas. First, in a general introduction concerning the structures of the financing of health services, the course explores public and private mechanisms, insurance, and other financing plans. Second, the course examines the principles of financial administration for health services in the institutional and private practice setting. In this context major current issues and problems such as cost containment in health financing are analyzed.

513 Special Studies in Health Care Organization and Delivery
Variable Credit
This course deals with intensive analysis of the organization, design, and delivery of health care services in specialized areas. The specialized areas cover long-term, mental health, and group medical practice.

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, evaluation, and 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.
Interdisciplinary Programs

Gerontology Minor

Advisers
Billey Chateau
Physical Education
Geraldine Richardson
Occupational Therapy
Ellen K. Page-Robin, Director
Gerontology

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 25,500,000 persons beyond age 65—and that population segment is growing. Universities have responded through research and teaching to increase the 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 supplement formal training in other fields such as sociology, social work, occupational therapy, physical education and recreation, blind rehabilitation speech pathology, and others. It cannot, however, be used for teacher certification. Knowledge and understanding gained from formal courses in the gerontology minor are supplemented by direct work with older persons through field experience. Study of gerontology not only can lead to vocational interests in services to older persons but can also prepare one for graduate and professional work, which should increase awareness of the society in which one lives, and can allow the thoughtful and intelligent personal planning of one's own middle and later years.

The minor consists of twenty or more hours from the courses listed, of which four are required courses. Courses must be selected in consultation with one of the advisers. Exceptions to the program specified, such as the inclusion of independent studies through departmental readings courses, may be made with the approval of the adviser.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 352: Introduction to Social Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>SWRK 464: Social Work Practice in Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>OT 470: Functioning of the Older Adult</td>
<td>3</td>
</tr>
<tr>
<td>Field Education:</td>
<td></td>
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<tr>
<td>Either HHS 570</td>
<td>4</td>
</tr>
<tr>
<td>Or a practicum in a participating department</td>
<td>3 or 4</td>
</tr>
</tbody>
</table>

**Electives:**

- BMED 531: Biology of Aging                  | 3    |
- BIS 292: Consumer Principles and Practices | 3    |
- FCL 326: Investment Analysis                 | 3    |
- ECON 313: Poverty and Economic Security      | 3    |
- ECON 318: Economics of Medical Care          | 3    |
- ED 504: Adult Development and Learning       | 3    |
- GSCI 434: Biomedical Ethics                  | 4    |

CRT 260: Nutrition                           | 3    |

OR

CRT 266: Food for Man                        | 3    |
CRT 413: Marriage and Family                 | 3    |
HPER 572: Recreation for the Aging           | 2    |
SWRK 563: Concepts in Rehabilitation         | 3    |
SWRK 572: Community Agency Resources         | 2    |
SOC 112: Death, Dying and Bereavement        | 3    |
SOC 373: Sociology of Health and Illness     | 3    |
SOC 552: Sociology of Aging                  | 3    |
SPPA 552: Communication Problems of the Aged | 3    |

Integrated Language Arts Minor (ILAM)

Ruth Heining, Coordinator
322 Sprau Tower
(616) 383-4080

This 24-hour interdepartmental program for preservice elementary school teachers emphasizes the integrated nature of language learning. This program satisfies the guidelines of the Michigan Department of Education for competency based programs and provides opportunities for a wide variety of individual interests and alternative learning styles. The critical importance of fieldwork in the learning of preservice teachers is recognized in the program and is an integral part of each course. Students in the program are encouraged to develop and implement innovative instructional materials and practices based on sound theory.

Each course is taught by a faculty member with interdisciplinary expertise from one of the departments participating in the minor. Each course focuses on a particular aspect of language development which will be presented through a balance of lectures, discussions and workshops together with opportunities for student initiated learning.

Students can enter the program in their sophomore year. In general Ed 250, Human Development and Learning, (or its equivalent), is a prerequisite for admission to the program. Program bulletin and application form are available in the Advising Offices of the College of Arts and Sciences or the Educational and Professional Development Department and from the Integrated Language Arts (ILAM) Coordinator, Ruth Heining, 322 Sprau Tower, 383-4080.

A minor slip is required. Students must see an adviser before they have completed 8 hours in the minor.
Program
This 24-hour interdepartmental minor for elementary education students consists of the following:

Entry Courses—
Must be taken concurrently:
ILAM/ED 260 Cognitive Development of the Child 2 hrs.
ILAM/SPPA 260 Linguistic Development of the Child 2 hrs.

Intermediate Courses:
ILAM/CAS 365 Oral Communication and the Early Elementary Child 4 hrs.
ILAM/ENG 375 Acquisition of Literacy and the Early Elementary Child 4 hrs.
ILAM/ENG 376 Acquisition of Literacy and the Later Elementary Child 4 hrs.

Capstone—to be taken after at least 16 hours of the minor are completed:
ILAM/ED 460 Integrated Language Arts Seminar 4 hrs.

For individual course descriptions see catalog listings under the participating department.

Blind Rehabilitation
(BLRRH)

Ruth Kaarlela, Chair
Donald Blasch
Robert O. LaDuke
Steven J. LaGrow
Lynne Luxton
Paul Ponchilla
Stanley Suterko
Marvin Weessies

Adjunct Faculty
A.L. Schut, M.D.

The Department of Blind Rehabilitation offers clinical educational services to students and services to clients who have severe visual impairments and works cooperatively with the Michigan Commission for the Blind. Operating in part on grants, primarily from the Department of Education, Special Education and Rehabilitative Services, the department offers graduate programs in orientation and mobility and rehabilitation teaching of the adult blind. Part of the department’s function is to conduct workshops for professionals working in the field, provide consulting services, and initiate pertinent research.

Courses Open to Upperclass Students
588 The Dynamics of Blindness and Rehabilitation
2 hrs.
The development of the status of the blind and their integration into a sighted society. The relationship of the emotional and social correlates of blindness to the development of the blind individual as a contributing member of society.

589 Inter-Professional Seminar Regarding Blind Multihandicapped Persons
1 hr.
Interdisciplinary approach to the study of multihandicapped conditions in which blindness is a common denominator.

590 Physiology and Function of the Eye
2 hrs.
The anatomy, structure and function of the eye. Various eye diseases and malfunctions are stressed. The student is given an opportunity to observe all types of eye conditions and eye prostheses.

591 Braille and Other Communication Methods
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.

592 Education of the Visually Handicapped
2 hrs.
An overview of the education of visually handicapped children and adults. An introduction to the literature, history, principles, practices and problems in the field, including curricular and methodological adaptations of various educational programs.

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.

597 Introduction to Cectucility
2 hrs.
Exploration of ways to assess the functional use of residual vision. Methods and means of increasing the functional use of residual vision and defining its limitations.

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.
The medical technologist is an important member of the health care team. He/she is trained to perform laboratory tests that assist the physician in the diagnosis and treatment of various diseases. The medical technologist must, therefore, be precise and accurate in the performance of these tests and possess a keen awareness for the importance of quality control within the laboratory.

Pre-Medical Technology Program (Pre-Professional Phase)

I. Admission Requirements: those of the University

II. Pre-Medical Technology (pre-professional) courses:

A. Biomedical Science courses
   1. BMED 112-Introduction to Biomedical Sciences
   2. BMED 113-Cell Biology
   3. BMED 200-General Biomedical Sciences Laboratory
   4. BMED 250-General Genetics

B. Chemistry courses
   1. CHEM 101 or 102-General Chemistry
   2. CHEM 120-Qualitative Analysis
   3. CHEM 365-Organic Chemistry
   4. CHEM 360 and 361-Organic Chemistry

C. Mathematics courses
   1. MATH 118-Precalculus
   2. MATH 122-Calculus I
   3. MATH 200-Analysis and Application

D. Physics courses
   1. PHYS 106-Elementary Physics
   2. PHYS 110 and 111-General Physics

E. Medical Technology courses
   1. MOTC 100-Orientation to Medical Technology
   2. MDTC 227-Introduction to Medical Technology

F. General Education courses
   1. Minimum of 2 semester hours of activity-related courses should be completed by end of sophomore year.

G. Physical Education Requirements
   1. Physical Education Requirements
   2. Physical Education Requirements

Professional Program—Medical Technology

I. Admission Requirements

A. Completion of all pre-medical technology (pre-professional) courses listed above or equivalent substitutes

B. Minimum grade point average of 3.0 in all pre-professional coursework

C. Satisfactory laboratory evaluations in designated Biomedical Science and Chemistry courses

D. A score of 65% or better on the English Skills test or completion of ENGL 305 (or an equivalent substitute) with a grade of C or better

E. Approval of the Program Director
a. Biomedical Science courses
   1. BMED 312—Microbiology
   2. BMED 330—Clinical and Pathogenic Microbiology
   3. BMED 350—Human Physiology for Majors
   4. BMED 430—Histology/Serology
   5. BMED 534—Virology
   6. BMED 536—Immunology
   7. BMED 559—Radiation Biology

b. Chemistry courses
   1. CHEM 222—Quantitative Analysis
   2. CHEM 450—Introductory Biochemistry
   3. CHEM 456—Introductory Biochemistry Lab

c. Physics courses
   1. PHYS 340—Biomedical Instrumentation

d. Cognate requirements
   1. Education elective
   2. Management elective
   3. Computer elective
   4. Statistics elective

2. Management elective

The Clinical practicum is served in an approved, accredited hospital School of Medical Technology. It is taken for twelve months independent of the University. Registration with Western during this period is not required under this option.

Course Descriptions

100 Orientation to Medical Technology
2 hrs. Fall
An introduction to the field of Medical Technology and all aspects relating to it. The course will include lecture and discussion, laboratory demonstrations, tours of various hospitals and research firms, as well as guest lectures presented by individuals working in the field of Medical Technology. Prerequisite: Admission to Pre-Medical Technology Curriculum or consent of instructor.

399 Independent Study—Medical Technology
Variable Credit (1-4 hours)
Students with good scholastic records may elect to pursue independently the study of some topic of special interest relative to Medical Technology. Topics are chosen and arrangements made to suit the needs of each particular student. Prerequisite: approved application required.

435 Clinical Chemistry
3 hrs. Summer
Basic theories and principles of clinical chemistry are presented through lecture and demonstration. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

440 Clinical Microbiology Laboratory
4 hrs. Winter
Laboratory techniques in clinical microbiology are presented. Familiarity with these techniques is acquired through demonstration and active participation at the respective benches. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

441 Clinical Microbiology
3 hrs. Spring
Basic theories and principles of clinical microbiology including bacteriology, mycology, and parasitology, are presented through lecture and demonstration. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

442 Clinical Microbiology Laboratory
4 hrs. Winter
Laboratory techniques in clinical microbiology are presented. Familiarity with these techniques is acquired through demonstration and active participation at the respective benches. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

443 Clinical Laboratory Techniques I
1 hr. Fall
Basic theories and principles of microscopy, urinalysis, radiostatopes, and miscellaneous disciplines are presented through lecture and demonstration. Laboratory education and management are also covered under this heading. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).

444 Clinical Laboratory Techniques II
2 hrs. Winter
Laboratory techniques in microscopy (phase and fluorescent), urinalysis, radiostatopes and miscellaneous disciplines are presented. Familiarity with these techniques is acquired through active participation at the respective benches. This course is taken in an approved hospital School of Medical Technology. Prerequisite: Acceptance in Medical Technology Curriculum (3 + 1 Option).
The primary enrollment period is the Fall Semester; however, enrollment opportunities may be expanded as needed. (Contact the Department Office for information.)

Students interested in applying for Departmental Admission are encouraged to contact a Department Adviser well in advance of expected admission. Imposed deadlines are strictly enforced.

The Pre-Occupational Therapy Curriculum is designed for those students considering Occupational Therapy as a professional choice. The courses recommended for Pre-Occupational Therapy students are those designed to meet Department admission criteria and University requirements including General Education and Physical Education (See Occupational Therapy-Program for complete list).

**Field Work**

All graduate, undergraduate and transfer students, regardless of their admission date to the professional program, shall make application for the field work experience two semesters prior to the anticipated initiation of field work. To be eligible for enrollment in field work, the student must have a cumulative point hour ratio of 2.00 or above with no grades less than “C” in required and prerequisite courses. In addition, the student shall receive satisfactory recommendations from departmental faculty as to general competency in assuming professional responsibilities appropriate for field work experience. Each student is required to successfully complete two-three month field work experiences. Students will receive a “C” for credit upon successful completion of the field work experience based on a passing grade on the FWPR (the Field Work Performance Report). Students who withdraw or fail field work will receive “NC,” no credit. Based on an interview with the student, a different field work experience may be rescheduled. Students who fail two field work experiences will not be allowed to continue in this program without an appeal process and demonstration of appropriate competencies through a remedial procedure. An optional variable length field work experience may be scheduled pending available opening.

**Continuation Requirements**

Any student who fails to meet the following criteria is in jeopardy of being dropped from the Occupational Therapy curriculum.

1. A student will complete all required departmental courses and required pre-requisites with a grade of “C” or better.

2. A student can repeat only one department course or required prerequisite, and that course only once, to obtain a grade of “C” or better. Within two weeks of receipt of the second grade lower than “C” for a departmental course or required prerequisite, the student must request a hearing before a departmental committee to decide about continuance in the program. If a hearing is not requested, the student will be dropped from the curriculum. The department may refuse to permit a student to continue in the curriculum if at any time it is deemed that the student will not be able to perform at a professional level.

**Miscellaneous**

The following courses are offered on a credit/no credit basis only: OT 236, 490, 491. Materials fees are required for some courses.

**Program**

**Bachelor of Science Degree**

1. Minimum hours required for this curriculum: 128

2. Course Requirements: All courses listed under 2. A. through D. are the recommended courses for all Pre-Occupational Therapy students. (See Department Adviser for further information.)

   A. General Education Requirements . . . . 35
   B. Physical Education Requirements . . . . 2
   C. Courses Required for Admission
      Consideration:
      1. Behavior Sciences (Psychology, and Sociology or Anthropology) . . . . 9
      2. Basic course in Biology or Biomedical Sciences (BMED 112 or equivalent) . . . . 3-4
      3. Normal Growth and Development (covering areas of the Life Span) (OT 225 or equivalent) . . . . 3
      4. English Composition . . . . 3
      5. Satisfactory completion of all Basic Education Requirements.
   D. Pre-Professional Courses:
      (Prerequisite to related courses in Occupational Therapy theory and techniques)
      1. Basic Anatomy (BMED 210 or equivalent) . . . . 3-4
      2. Human Physiology (BMED 240 or equivalent) . . . . 3-4
      3. Abnormal Psychology (PSY 250 or equivalent) . . . . 3
   E. Professional Curriculum . . . . 53
      OT 202 Orientation to Occupational Therapy . . . . 2
      OT 203 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 350 Life Skills Assessment and Treatment . . . . 2
      OT 351 Introduction to Theory and Treatment Processes . . . . 3
      OT 352 Approaches to Client Intervention . . . . 2
      OT 353 Occupational Therapy Practicum I . . . . 3
      OT 354 Personal and Environmental Adaptations . . . . 2
      OT 451 Applied Theory and Treatment Process . . . . 2
      OT 452 Occupational Therapy Applications . . . . 2
      OT 453 Occupational Therapy Practicum II . . . . 3
      OT 460 Research Methodology . . . . 3
      OT 480 Administration-Supervision-Coordination . . . . 3
      OT 490 OT Fieldwork I . . . . 3
      OT 491 OT Fieldwork II . . . . 3

**Course Descriptions**

202 Orientation to Occupational Therapy

2 hrs.
Orientations to the profession of occupational therapy. Will include the history of the profession, current professional roles, issues and trends in the field.

203 Professional Language and Interactions

3 hrs.
A basic course which includes medical terminology, techniques of information gathering, and professional interpersonal communications. Prerequisite: Basic writing course.

236 Independent Practicum

2 hrs.
Participation in a health service agency to provide experience with hospital procedure and an orientation to patient groups. A daily log is required. Student shall submit a proposal for the course for departmental approval prior to registration. Prerequisite: Occupational therapy major.

312 Adapted Activities

4 hrs.
Includes basic tool use, instruction in core craft and group activities including leather, ceramics, cooper tooling, 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: Pre-OT or OT enrollment or consent.

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 musculoskeletal, neurological, and neuromuscular systems. Prerequisite: Anatomy and Physiology.

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

344 Disabling Conditions

4 hrs.
This course will introduce pathogenic processes and their impact upon the total individual. Prerequisites: OT 321 or concurrent. Abnormal Psychology.

350 Life Skills Assessment and Treatment

2 hrs.
Examination of the role of occupational therapists in the education, evaluation, and training of life skills.

351 Introduction to Theory and Treatment Processes

3 hrs.
Application of occupational therapy theory to treatment programs for clients with sensory motor integration and psycho-social problems. Emphasis is on the integrative approach to neurodevelopmental and psycho-social theories and treatment. Prerequisite: OT 335 or concurrent.

352 Approaches to Client Intervention

2 hrs.
This course will introduce the student to selected theories and concepts used in occupational therapy. The student will develop treatment plans appropriate to assigned cases to demonstrate the treatment process and the influence on this process. Prerequisite: OT 351 or concurrent.
353 Occupational Therapy Practicum I
3 hrs.
This course is designed to provide clinical experience in client assessment, the implementation of treatment plans, 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 351 and 352.

354 Personal and Environmental Adaptations
2 hrs.
The designing or restructuring of the physical environment to assist self-care, work, and play/leisure performance. This includes selecting, obtaining, fitting, and fabricating equipment. Categories of adaptations include orthotics, prosthetics, and assistive/adaptive devices. Prerequisite: OT 321; OT 344; OT 351; or concurrent.

436 Independent Study in Occupational Therapy
2-4 hrs.
Designed to allow outstanding students to work independently under faculty supervision. Consent of department chair.

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 354.

452 Occupational Therapy Applications
2 hrs.
This course is designed to provide the student with the occupational therapy theories and principles that relate to the course content of OT 451, and will, through a problem-solving approach, apply these theories to treatment. Prerequisite: OT 351 or concurrent.

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, and the evaluation of the patient's growth related to the treatment plan. Emphasis is directly related to the content of OT 451 and OT 452. Prerequisites: OT 451; OT 452.

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 write a research proposal. Senior Status. Prerequisite: OT 203.

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.

490 Field Work Level II
3 hrs.
A three-month affiliation in hospitals or 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.

491 Field Work Level II
3 hrs.
A three-month affiliation in hospitals or 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.

597 Studies in Occupational Therapy
2-4 hrs.
Examines selected topics within the field of Occupational Therapy. Topics considered will vary from semester to semester. May be repeated for credit. Prerequisites: Advanced OT major or departmental permission.
PHYSICIANS’ ASSISTANTS PROGRAM

The appropriate use of a physician’s assistant, required in a medical practice and free the physician to spend more time on the difficult and complex matters of medicine. Through the physician to spend more time on the difficult and complex matters of medicine. Through the physician to spend more time on the difficult and complex matters of medicine. Through the

Physicians’ Assistants

Advice Information

The following is an advisory curriculum guide designed to assist lower division undergraduate students as they prepare to meet the requirements for admission into the professional aspects of the Physicians’ Assistants (PA) Program at WMU.

Curriculum Suggestions and Requirements

This suggested curriculum meets two distinct purposes:

1. It provides students with acceptable course selections which will prepare them to meet minimum academic requirements for entry into the professional portion of the PA Program, and,
2. It provides flexibility in coursework to allow students to make appropriate curriculum changes if they are not admitted to the PA Program.

Requirements

The PA Program has the following requirements for application to the professional curriculum. No application will be considered for admission:

1. A minimum of 2,000 hours (one year) of health care experiences (not including health care experiences. The health care experience requirement is waived the responsibility of every applicant to complete prior to application for entry into the professional portion of the Program. A minimum of 60 semester hours of college credits.
2. A minimum of 60 semester hours of college credits.
3. Minimum life science credits in the range of 15-20 semester hours, including the Chemistry requirements.
4. Humanities, social and behavioral sciences and the arts are positive selection factors.

Course Suggestions

In addition to the University General Education requirements for baccalaureate degrees, the program recommends further the following as a guide to students interested in Physicians’ Assistant career development:

Required

CHEM 101, 120

Recommended

BIOL 101 and 102, or, BMED 112 and 113; MATH 118, or 122; and Psychology, anatomy, physiology, physics, life sciences courses.

The PA Program provides advisers for any interested students. Due to the number and quality of persons in the applicant pool each year, the PA Program cannot guarantee admission to students who complete the above suggested curriculum. The Program gives serious consideration to every applicant who has completed the required and suggested academic and health care prerequisites. The PA Program is interested in well qualified applicants and is willing to work closely with interested students as they prepare themselves to make application to the Program.

Application and Admission

Admission to the professional curriculum of the PA Program requires separate application. Application forms may be obtained from the PA Office in Bigelow Annex. A rolling admissions process, implemented in 1983, allows candidates to determine their suitability for entry at an early point in time. Applications will be available at any time after July, and will be reviewed and evaluated every eight weeks. Format for the evaluation process is available from the Program Office.

Selection Process

A selection committee has established the following policies for selection to the junior academic 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 and the candidates are identified for interviews.
2. Interviews: candidates are scheduled for separate required interviews with individuals representing medicine, counseling and academics.
3. Final selections: 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) year of the 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-related achievements, 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 part is devoted to the basic 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 students begin instruction in the clinical areas such as interviewing, history taking and physical diagnosis.

During the senior or clinical year, each senior PA student enrolls in six required clinical rotations including: community and mental health, family medicine, internal medicine, surgery, obstetrics, and child health. In addition, each senior student is permitted one elective clerkship in any of the medical specialties.
Clinical Affiliates

Practicing physicians primarily in the western Michigan area serve as preceptors in this phase of the program. The Physicians' Assistants program at Western has affiliation with the following:

- Albion Community Hospital
- Allegan General Hospital
- Allen Park V.A. Medical Center
- Alpena General Hospital
- Battle Creek Adventist Hospital
- Battle Creek V.A. Medical Center
- Berrien General Hospital
- Borgess Medical Center—Kalamazoo
- Catherine McAuley Health Center—Ann Arbor
- Cedarwood Medical Clinic—St. Joseph
- Chelsea Community Hospital
- Chippewa War Memorial Hospital—Sault Ste. Marie
- Columbus Occupational Health Association (Indiana)
- Community Health Center of Branch County
- Community Hospital Association—Battle Creek
- Community Memorial Hospital—Cheboygan
- Crystal Falls Community Hospital
- Danville V.A. Medical Center (Illinois)
- Dowagiac Health Systems Inc.
- Dwight Hospital and Rehabilitation Center (Pennsylvania)
- Emma L. Bixby Hospital—Adrian
- Eau Claire Migrant Clinic
- Franklin Community Hospital—Vicksburg
- Grand View Hospital—Iron Wood
- Grant Community Hospital
- Harold and Grace Upjohn Community Nursing Home—Kalamazoo
- Henry Ford Hospital—Detroit
- Hillsdale Community Health Center
- Howard Young Medical Center, Inc. (Wisconsin)
- Huron Valley Men's Correctional Facility—Ypsilanti
- Iron County General Hospital
- Kalamazoo Regional Psychiatric Hospital
- Kalkaska Memorial Hospital
- Kelsey Memorial Hospital—Lakeview
- Kalamazoo Center (Indiana)
- Lee Memorial Hospital—Dowagiac
- Leila Y. Post Montgomery Hospital—Battle Creek
- Livingston Memorial Hospital—Ann Arbor
- Mercy Hospital—Benton Harbor
- Muskegon General Hospital
- Myers Community Hospital Foundation Inc. (New York)
- Oaklawn Community Hospital—Plainwell
- Oaklawn Community Hospital—Grand Haven
- Oaklawn Community Health Center (Indiana)
- Pawling Hospital—Niles
- Pleasant Ridge Center—Kalamazoo
- Pipp Community Hospital—Plainwell
- Provincial Hospital of Portage
- Riverside Medical Center—Illinois
- Sault Ste. Marie Community Hospital—Sault Ste. Marie
- St. Joseph Hospital—Flint
- Saline Community Hospital
- Sheridan Osteopathic Community Hospital
- Southwestern Michigan Area Health Education Center—Kalamazoo
- State Prison of Southern Michigan—Jackson
- State Technical Institute & Rehabilitation Center—Plainwell
- Sturgis Hospital
- Tomah V.A. Medical Center (Wisconsin)
- Traverse City Osteopathic Hospital
- Union Hospital (Indiana)
- United Memorial Hospital—Greenville
- University Health Center
- University of Michigan Hospitals—Ann Arbor
- Zeeland Community Hospitals

For current information on the curriculum, the admission requirements, and procedures, write to: Physicians' Assistants Program, Western Michigan University Kalamazoo, Michigan 49006.

Junior (Pre-Clinical) Year

<table>
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BMED 203</td>
<td>Cellular Biology for PA's</td>
<td>3</td>
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<tr>
<td>BMED 319</td>
<td>Clinical Physiology for PA's</td>
<td>5</td>
</tr>
<tr>
<td>BMED 401</td>
<td>Principles and Techniques of Lab. Anal.</td>
<td>3</td>
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<tr>
<td>CHEM 206</td>
<td>Integrated Chemistry for PA's</td>
<td>5</td>
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<tr>
<td>MDSC 301</td>
<td>Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>MDSC 302</td>
<td>Medical &amp; Surgical Emergencies I</td>
<td>3</td>
</tr>
<tr>
<td>MDSC 303</td>
<td>PA History and Legislation</td>
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<td>MDSC 304</td>
<td>Patient Evaluation I</td>
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<td>MDSC 306</td>
<td>Pathophysiology I</td>
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<td>MDSC 307</td>
<td>Clinical Medicine I</td>
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<td>MDSC 308</td>
<td>Patient Counseling</td>
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<td>MDSC 311</td>
<td>Gross Human Anatomy</td>
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<tr>
<td>MDSC 312</td>
<td>Medical &amp; Surgical Emergencies II</td>
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<td>MDSC 314</td>
<td>Patient Evaluation II</td>
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<td>MDSC 316</td>
<td>Pathophysiology II</td>
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<td>MDSC 317</td>
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<td>MDSC 324</td>
<td>Patient Evaluation III</td>
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<td>MDSC 326</td>
<td>Pathophysiology III</td>
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<td>MDSC 334</td>
<td>Clinical Medicine IV</td>
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<td>MDSC 337</td>
<td>Clinical Medicine III</td>
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<td>MDSC 347</td>
<td>Clinical Medicine IV</td>
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<td>MDSC 409</td>
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<td>MDSC 410</td>
<td>Pharmacology I</td>
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<tr>
<td>MDSC 412</td>
<td>Pharmacology II</td>
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<td>MDSC 413</td>
<td>Dermatology</td>
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Senior (Clinical) Year

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<tr>
<td>MDSC 420</td>
<td>Pediatrics Rotation</td>
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<tr>
<td>MDSC 422</td>
<td>Pediatrics Seminar</td>
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</tr>
<tr>
<td>MDSC 423</td>
<td>Obstetrics and Gynecology Rotation</td>
<td>4</td>
</tr>
<tr>
<td>MDSC 433</td>
<td>Obstetrics and Gynecology Seminar</td>
<td>2</td>
</tr>
<tr>
<td>MDSC 424</td>
<td>Internal Medicine Rotation</td>
<td>4</td>
</tr>
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<td>MDSC 434</td>
<td>Internal Medicine Seminar</td>
<td>2</td>
</tr>
<tr>
<td>MDSC 425</td>
<td>Surgery Rotation</td>
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</tr>
<tr>
<td>MDSC 435</td>
<td>Surgery Seminar</td>
<td>2</td>
</tr>
<tr>
<td>MDSC 426</td>
<td>Community and Mental Health Rotation</td>
<td>4</td>
</tr>
<tr>
<td>MDSC 436</td>
<td>Community and Mental Health Seminar</td>
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<tr>
<td>MDSC 428</td>
<td>Elective Rotation</td>
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<tr>
<td>MDSC 437</td>
<td>Family Medicine Seminar</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>
Clinical and Diagnostic Skills
1 hr.
This course gives PA students experience in various clinical skills such as suturing, administration of injections, surgical gowning procedures and aseptic techniques. Also included is a series of lectures on common diagnostic laboratory procedures, the indication for, interpretation, and clinical significance of results. Students are given a basic knowledge of clinical radiology.

Gross Human Anatomy
5 hrs.
This course is designed to help the Physician’s Assistant student achieve a sound understanding of the structure of the human body through lectures, discussions, and laboratory cadaver dissection. Topographical and regional anatomy as applied to clinical medicine are stressed.

Medical and Surgical Emergencies II
3 hrs.
Continuation of 301.

Patient Evaluation II
3 hrs.
Second in a series of courses beginning with 304.

Pathophysiology II
2 hrs.
Continuation of 306.

Clinical Medicine I
3 hrs.
This first in a series of four courses presents the etiology, clinical presentation of signs and symptoms, diagnosis and treatment of common medical disorders. There is emphasis on systematic clinical problem solving, and recognition of the medical problems most commonly seen in primary care settings.

Patient Evaluation III
1 hr.
Third in a series of courses beginning with 304.

Clinical Medicine II
3 hrs.
Second in a series of courses beginning with 317.

Patient Evaluation IV
1 hr.
Fourth in a series of courses beginning with 304.

Clinical Medicine III
3 hrs.
Third in a series of courses beginning with 317.

Clinical Medicine IV
3 hrs.
Fourth in a series of courses beginning with 317.

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 corrections by proper therapy.

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 trend is to acquaint the student with drugs commonly used in therapy, their side effects and toxic manifestations.

Pharmacology II for PAs
3 hrs.
This course deals with the practical aspects of pharmacology as they relate to primary care Physicians’ Assistants. This is a continuation of Pharmacology I.

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.

Clinical Year

Pediatrics Clerkship
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.

Obstetrics and Gynecology Clerkship
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 postnatal complications are taught. The gynecology emphasis is placed on exposing the students to methods and programs relating to cancer detection, venereal disease and birth control. Emphasis is on those obstetric and gynecologic disorders most commonly encountered by the primary care physicians’ assistant.

Internal Medicine Clerkship
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 are experienced in the out-patient 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.

General Surgery Clerkship
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 out-patient and in-patient surgical services. Students perform admission histories and physicals and participate in discussions regarding diagnostic tests necessary for proper patient care. The student then follows through preoperative 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 various complications.

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 the community’s legal rights and common treatment modalities. Experience is gained with both pediatric and adult patients and with both out-patient and in-patient situations. The student becomes acquainted with the community and the mental health framework including major types of problems encountered by patients in the community and the services provided by agencies which care for client’s needs.

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 problem lists, 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.

Elective Rotation: Variable Title
2-6 hrs.
This six-week rotation is intended to cover the many sub-specialties of medicine to 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 clerkships such as community and mental health, surgery, internal medicine, ob/gyn, pediatrics or family practice.
Social Work (SWRK)

Philip Kramer, Director
Thomas Blakely
William Burns
Donald Cooney
G. G. Dadlani
Betty Deshler
John Flynn
Doris Greene
Judy Halseth
Lethoneee Jones
David Joslyn
Leslie Lehnigirn
Raymond Lish
Gary Mathews
Nathaniel McCaslin
Ann Overbeek
Edward Pawlak
Deloris Philips
Linda Reeder
Kenneth E. Reid
Danny H. Thompson
Robert Wertkin
Marion Winberg

The School of Social Work offers both an undergraduate and graduate professional program 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 offer social work as part of the student's Liberal Arts Education, to prepare students for beginning level social work practice, and to provide preparation for graduate training in social work. The graduate-professional program is designed to educate students for direct service and leadership 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. 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 an University gerontology minor. Social work students should consult their curriculum adviser for program planning for the gerontology minor. Also available to social work majors is a concentration in gerontology.

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 introduction to social research.

Students planning to major in social work are admitted into a pre-social work curriculum at the time of admission to the University. On completion of 45 semester hours (midway through their sophomore year) students must submit an application to the Director of Admissions of the School of Social Work for processing into the major. SWRK 210, "Social Work Services and Professional Roles," should be taken in the first semester of the sophomore year. Deadlines for submitting applications are January 15 and May 15 of each year.

A guided interdisciplinary minor of 22-20 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 curriculum leading to a master's degree in social work. Further information about this program can be found in the Graduate Bulletin.

Program

1. Minimum hours required for graduation ................................ 122 hrs.

2. Course Requirements

A. General Education .............................................. 35 hrs.

B. Requirements for the undergraduate Social Work Major .............................................. 32 hrs.

*C. Required applications are due at least 15 weeks prior to the semester in which field work is to be taken.

210 Social Work Services and Professional Roles .................................................. 3

300 Social Welfare as a Social Institution .................................................. 3

350 Individual and Family Behavior .................................................. 3

351 Group, Community and Organization Behavior .................................................. 3

400 Social Work Practice: The Problem Solving Process .................................................. 3

401 Social Work Practice: Values and Problem Analysis .................................................. 3

402 Social Work Practice: Policy Analysis and Organizational Context .................................................. 3

410 Field Experience and Seminar I .................................................. 4

411 Field Experience and Seminar II .................................................. 4

433 Dynamics of Race and Culture for Social Work Practice .................................................. 3

Note: Following completion of SWRK 210 students must be accepted into the social work curriculum to complete the major.

C. Required Research Component

SOC 382 Methods of Sociological Inquiry .................................................. 5 hrs.

D. Guided Interdisciplinary Minor .................................................. 22-24 hrs.

Includes:

CAS 170 Interpersonal Communications .................................................. 3 hrs.

ENGL 305 Practical Writing .................................................. 4 hrs.

Any one of the following:

BIOL 101 Animal Biology .................................................. 4 hrs.

BMED 112 Introduction to Biomedical Science .................................................. 3 hrs.

Any one of the following:

ECON 100 Contemporary Economic Problems .................................................. 3 hrs.

ECON 313 Poverty and Economic Security .................................................. 3 hrs.

Any one of the following:

PSY 202 State & Local Government .................................................. 4 hrs.

PSY 300 Urban Politics .................................................. 3 hrs.

Any one of the following:

PSY 150 Introduction to Human Behavior .................................................. 3 hrs.

PSY 160 Child Psychology .................................................. 3 hrs.

PSY 250 Abnormal Psychology .................................................. 3 hrs.

Any one of the following:

SOC 210 Modern Social Problems .................................................. 3 hrs.

SOC 300 Sociological Theory .................................................. 3 hrs.

SOC 350 Introduction to Social Gerontology .................................................. 3 hrs.

E. Physical Education .................................................. 2 hrs.

F. 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, communication arts and sciences, economics, history, philosophy, political science, psychology, sociology. The following Social Work courses are also available as electives for undergraduate students.

100 Introduction to Social Services 3 hrs.
412 Projects in Social Work 3 hrs.
464 Problem Solving in Gerontology 3 hrs.
465 Correctional Process and Techniques 3 hrs.
512 Social Policy and Service Delivery in Selected Problem Areas 3 hrs.
561 Community Development in Selected Countries 3 hrs.
562 Community Organization in Urban Areas 3 hrs.
563 Social Work Concepts in Rehabilitation 3 hrs.
564 Special Studies in Social Work Practice 1-4 hrs.
566 Social Service in the Schools 3 hrs.
567 Institutional Corrections 3 hrs.
568 Non-institutional Corrections 3 hrs.
569 Juvenile Justice 3 hrs.
572 Community Agency Resources 2 hrs.
597 Teaching Apprenticeship in Selected Social Work Curriculum Areas 1-4 hrs.
599 Readings in Social Work 1-4 hrs.

3. The student must satisfy the requirements for the B.A. or B.S. degree.

4. Any student who fails to meet the following criteria will be notified in writing by the School of Social Work undergraduate adviser that he/she will be in jeopardy of being dropped from the social work major.

A. The student will complete all required social work major courses with a grade of "C" or better.

B. The student cannot repeat only one required social work major course only to obtain a grade of "C" or better.

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 adviser.

Social Work Minor
15 credit hours
SOCIAL WORK 235
100 Introduction to Social Services 3 hrs.
412 Projects in Social Work 3 hrs.
464 Problem Solving in Gerontology 3 hrs.
465 Correctional Process and Techniques 3 hrs.
512 Social Policy and Service Delivery in Selected Problem Areas 3 hrs.
561 Community Development in Selected Countries 3 hrs.
562 Community Organization in Urban Areas 3 hrs.
563 Social Work Concepts in Rehabilitation 3 hrs.
564 Special Studies in Social Work Practice 1-4 hrs.
566 Social Service in the Schools 3 hrs.
567 Institutional Corrections 3 hrs.
568 Non-institutional Corrections 3 hrs.
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Course Descriptions
(Courses described in italics are approved for General Education.)

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.

210 Social Work Services and Professional Roles 3 hrs.
This course introduces students to the social work profession, its value base and code of ethics. The course provides an examination of professional social work roles and the professional responsibilities in the delivery of social work services to minority and majority groups at various levels of government and within a variety of settings. Required for social work majors and minors. Prerequisite: Sophomore status or consent of instructor.

300 Social Welfare as a Social Institution 3 hrs.
Course objective is to enable the student to develop a perspective on the growth of welfare services and their relationship to welfare needs. It is a critical examination of the forces (e.g., social, economic, historical, political, and philosophical) that have led to the institutionalization of social welfare. Prerequisites: SWRK 210 and junior status.

Provides the student with a basic understanding of human behavior, related to human developmental processes, e.g., psychology, learning theory, and family social and cultural dynamics. Examines socialization and its influence on human behavior. Identifies significant physical, mental, emotional, social and cultural factors which affect the development of the personality, biological and family systems. Prerequisite: SWRK 210 and junior status.

351 Social Work Concepts in Group, Community and Organizational Behavior 3 hrs.
Provides the student with an understanding of human behavior related to small group process, role theory, communications theory, social conflict constructs, systems concepts, formal organization and community dynamics. Examines 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. Prerequisite: SWRK 210, and 350 and junior status.

This course provides the problem solving process as the conceptual framework for social work practice. The student achieves 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 assessment and goal formulation within the context of social work values. Prerequisites: Senior status, submission of field experience application to the Director of Field Education. A continuation of SWRK 410. Two hundred and twenty-five (225) clock hours in the field and fifteen (15) hours in a campus-based seminar. Students engage in social work interventions and practice preventive behaviors in solving problems with individuals, groups, organizations, and/or a community. Prerequisites: Senior status, completion of SWRK 401 and concurrent enrollment in SWRK 402. Field experience application not required if student submitted one for 410, arrangement of class schedule so that the student is in a field agency on Tuesday and Thursday of each week, majors only.

401 Social Work Practice: Intervention and Evaluation 3 hrs.
A study of social work interventions, their differential use at various system levels (i.e., person, group, organization and community), and evaluation of their effectiveness. Students learn to identify and appraise interventions in reported and simulated social work situations to select and use preventive behaviors in simulations, and to evaluate the effectiveness of their own preventive behaviors in simulated and real situations. Prerequisites: Senior status, completion of SWRK 400, enroll in SWRK 410, concurrently majors only.

This course combines conceptual analysis and training in practice skills. It focuses on the effects of social policy and organizational context on social work practice. It explores the basic process of policy development and the relationship between policy, ideology, and values. It pays particular attention to the impact of social policy on human service organizations, analyzing the effects of specific policies on workers, clients, and organizational structure and goals. It helps students develop skills for effective functioning in the organizational environment, including organizational change and utilization of organizational resources for effective service delivery. Prerequisites: Senior status, completion of SWRK 401, enroll in SWRK 411 concurrently.

*410 Field Experience and Seminar I 4 hrs.
Two hundred and twenty-five (225) clock hours in the field and fifteen (15) 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 assessment and goal formulation within the context of social work values. Prerequisites: Senior status, submission of field experience application to the Director of Field Education at least fifteen (15) weeks prior to the semester field work is to be taken, arrangement of class schedule so that the student is in a field agency on Tuesdays and Thursdays of each week; concurrent enrollment in SWRK 401 and enrollment in SWRK 411 the following term, majors only.

*411 Field Experience and Seminar II 4 hrs.
A continuation of SWRK 410. Two hundred and twenty-five (225) clock hours in the field and fifteen (15) hours in a campus-based seminar. Students engage in social work interventions and practice preventive behaviors in solving problems with individuals, groups, organizations, and/or a community. Prerequisites: Senior status, completion of SWRK 401 and 410 and concurrent enrollment in SWRK 402. Field experience application not required if student submitted one for 410, arrangement of class schedule so that the student is in a field agency on Tuesday and Thursday of each week, majors only.
412 Special Projects in Social Work 4 hrs.
An individually designed community or agency level field study focusing on social problems in the community and the various programs, policies and individual problem solving techniques designed to have impact upon those problems. Studies are generally exploratory or survey by design. Content may reflect a particular field of service such as mental health, gerontology, corrections, family service, etc. Term paper or equivalent is required. Students are also required to complete 180 clock hours on project. Precise contract to be worked out with the instructor.

NOTE: *Completed applications for 410 and 411 and 412 are due at least 15 weeks prior to the semester field work is to be taken.

433 Dynamics of Race and Culture for Social Work Practice 3 hrs.
Focus is upon ethnic/racial groups who are among social welfare consumer groups and social work clientele. Racial/cultural characteristics, group strengths and weaknesses, group priorities and experiences in the context of social welfare and social work will be examined. Implications of ethnic factors for social work practice, social planning, and social work education will be explored. Prerequisite: consent of instructor.

464 Problem Solving in Gerontology 3 hrs.
This course provides the student with information about social welfare programs, both institutional and non-institutional, which are available to our aged population. The student is introduced to different approaches to service delivery and interventive problem solving techniques utilized by professional social workers in working with minority and majority aged population. Open to social work students and students from related professional disciplines with consent of instructor.

465 Correctional Process and Techniques 3 hrs.
An overview of the correctional process as it can operate in probation, prison and parole to alter the criminal behavior patterns of legally defined offenders. A broad perspective is employed based on existing criminological theory and accumulated knowledge of the phenomenon of crime and delinquency. Selected techniques for correctional behavior modifications are studied in relation to a typology of normative deviance in terms of both ecology and rehabilitation. Prerequisite: consent of instructor.

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: consent of instructor.

The legal bases of organized social welfare and social work practice are examined through the study of selected examples of social legislation and judicial decisions, the legislative process, development of administrative regulations and court organization. Illustrative case studies are used to demonstrate how social workers can manage within the restrictions and opportunities presented by legal institutions and practices in social and individual case situations. Prerequisite: consent of instructor.

561 Community Development in Selected Countries 3 hrs.
This course is intended to provide basic information needed in understanding community life in developing countries. It places emphasis on the history and philosophy of community development in the context of differential socio-economic systems. Includes evaluation and analysis of organizational and interventive problems involved in implementing programs. Prerequisite: consent of instructor.

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 in medium and larger size urban communities. Emphasis is placed on the organizing of neighborhood and consumer groups for social interaction and improvement of community condition. Prerequisite: consent of instructor.

563 Work Concepts in Rehabilitation 3 hrs.
Application of social work problem solving concepts to social-psychological problems in the broad field of physical and mental rehabilitation. Both individualized services and programmatic implications are given consideration. Open to M.S.W. students and students from related professional department with consent of instructor.

564 Special Studies in Social Welfare Practice 1-4 hrs.
Study of selected topics related to the theory and practice of social welfare activities and endeavors. Focus will be on roles of human service workers and methodologies utilized in these roles in a range of social welfare areas. Specific topics will be announced. Prerequisite: permission of instructor.

566 Social Service in the Schools 3 hrs.
The role of the Social Worker in elementary and secondary schools and the necessary adaptations in the changes taking place in the educational scene are examined and evaluated. Problem solving approaches are given special attention within the structure and organization of the schools and their relationships with the surrounding community. The specific contributions of a school Social Worker as a helper among the pupils, the school staff and the homes by various interventive means are explored. Prerequisite: consent of instructor.

577 Juvenile Justice 3 hrs.
The course deals with the processing of offenders through the juvenile justice system with concentration on the philosophy and functioning of juvenile courts. Personal and organizational factors that are associated with or that determine offenders’ passage through the juvenile court are examined. Prerequisite: Consent of Instructor.

572 Community Agency Resources 2 hrs.
A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, speech therapists, guidance counselors, teachers, etc. Not recommended for Social Work Students.

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 (14 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.

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.
Specialty Program in Alcohol and Drug Abuse

Adviser:
Dennis Simpson
Room B-308, Ewellworth Hall

Western Michigan University offers a program for the training of substance abuse specialists through the Graduate Specialty Program in Alcohol and Drug Abuse (SPADA). The departments of Biology, Counseling and Personnel, Psychology, Sociology, and the School of Social Work provide a multidisciplinary and interdisciplinary basis to the specialty. Courses are planned and taught by faculty from the contributing disciplines.

Students receive training 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 master's degree in their respective disciplines and, upon completion of the eighteen-hour SPADA program requirements, receive a Certificate of Specialty in Alcohol and Drug Abuse.

Further details regarding the specialty are available in The Graduate College Catalog.

Speech Pathology and Audiology (SPPA)

Robert L. Erickson, Chair
Harold L. Bate
Michael J. Clark
Paul Czuchna
John M. Hamley
Gary D. Lawson
Frances E. Lohr
Nickola W. Nelson
Donna B. Oas
Karen S. Seeleig
Shirley N. Sparks
Courtney P. Stromsta
Susan K. Wear

Adjunct Faculty
Alvin J. Davis
William L. Dawson
Donald G. Hallas
Christian Helmus
Ronald W. Kelley
William L. Locke

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 mission of the Department of Speech Pathology and Audiology is to prepare professional personnel who will be maximally effective in the delivery of diagnostic, rehabilitative, and rehabilitative 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 receipt of 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. Information about this department's master's degree program can be found in the WMU Graduate Bulletin.

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 their 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 admission requirements and procedures 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 semester of study will be required to complete the undergraduate curriculum.

Teacher Certification Track

Students who seek careers as clinicians 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 Orientation and Advisement Office, 2305 Sangren Hall. Students must obtain an approved minor slip signed by an approved elementary education adviser. In addition, students who desire Elementary Provisional Certification will be required to complete the following College of Education undergraduate requirements: ED 300 Teaching and Learning (3 semester hours); ED 410 Seminar in Education (2 semester hours); ED 450 School and Society (3 semester hours); and ED 470 Directed Teaching (9 semester hours). The latter three registrations usually are taken concurrently in one semester during the senior year.

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 graduate level directed teaching experience in speech/language/hearing therapy), 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 will have completed the academic and practicum experiences required for employment in other clinical settings as well. 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, integrated language arts, psychology, gerontology or related discipline. Assistance in selecting an appropriate minor is available through the departmental undergraduate adviser.

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 34 to 36 hours in speech pathology and audiology plus additional course work specified by the department. These additional requirements include coursework in general education, physical education, supporting courses outside the department and an academic minor. All the coursework can be completed within the minimum 122 credit hours required by the University for a bachelor's degree. 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 adviser. Because the sequencing of courses included in this major is critically important, students should seek academic advising from the department as soon as possible.

Integrated Language Arts Minor (ILAM)

The Department of Speech Pathology and Audiology is one of five participating departments in the integrated language arts minor—a program designed particularly for preservice elementary school teachers. The program provides opportunities for a wide variety of individual interests and alternative learning styles. For a full description of the program consult its listing under the "Interdisciplinary Programs" section of the College of Arts and Sciences or its listing in the College of Education or the College of Health and Human Services.

Course Descriptions

(Courses described in italics are approved for General Education.)

200 Introduction to Communication Disorders
3 hrs.
This course provides a broad view of the nature of language as the primary means of human communication, its normal acquisition, the common disorders of speech, language and hearing, the social and emotional consequences of these disorders, and individual and societal ways of dealing with communication disorders.

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 considerations of mechanisms of language acquisition. Prerequisite: Consent of instructor or LING 100 and PSY 194. Majors must take concurrently with SPPA 204.

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 LING 100 and BIOL 101. Majors must take concurrently with SPPA 203.

205 Voice and Respiration
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, MATH 110 or 116. Majors must take concurrently with SPPA 206.

206 The Auditory System
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, PSY 194; MATH 110 or 116, or by consent of instructor. Majors must take concurrently with SPPA 205.

207 Clinical Laboratory
1 hr.
During this registration the student is required to participate in structured observations of clinical activities including out-patient evaluations, on-going therapy and multidisciplinary diagnostics. Must be taken concurrently with ILAM/ED 260. Required for the Integrated Language Arts Minor.

351 Phonemic Disorders
2 hrs.
A detailed study of the nature of phonemic disorders; orientation to clinical management. Prerequisite: 204.

353 Fluency Disorders
2 hrs.
A detailed study of the nature of fluency disorders; orientation to clinical management. Prerequisite: 204 and 400.

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: 203.

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 205.

359 Special Studies in Communication Disorders
2 hrs.
A study of the nature of communication disorders associated with congenital or acquired impairment of language function in children; orientation to clinical management. Prerequisite: 203.

401 Practicum in Speech Pathology and Audiology I
2 hrs.
Clinical experience in the management of speech, language, and/or hearing disorders. Prerequisite: 400.

403 Vocal Tract Kinetics
3 hrs.
A study of vocal tract kinematics and the neurological basis of speech. The course includes a detailed consideration of speech as the time-varying shaping of the vocal tract. Prerequisite: Consent of instructor or SPPA 205 and SPPA 206.

500 Advanced Speech and Hearing Science
2 hrs.
Theories of speech production, reception and perception are considered in this course from the point of view of experimental phonetics and experimental audiology.

551 Neuropathologies of Speech
2 hrs.
This course is concerned primarily with surveying selected communication disorders associated with neuropathologies.

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 will be on the clinical management of characteristic communication disorders and impaired auditory functions associated with aging.

554 Speech and Hearing Therapy in the Schools
2 hrs.
Study of clinical work with speech or hearing disordered children in the school setting.

555 Hearing Measurement
2 hrs.
This course is designed to acquaint the student with principles, theories, and methods of hearing measurement which provide the basis for clinical and audiometric procedures.

556 Rehabilitative Audiology
3 hrs.
Orientation to the clinical management of communication problems associated with auditory impairment.

557 Educational Audiology
3 hrs.
This course deals with the educational, psychological and vocational needs of the hearing impaired child and the parameters that affect educational programming.

595 Oral Language Development and Dysfunction
3 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 or audiology.

597 Topics in Speech Pathology and Audiology
1-4 hrs.
Selected topics in speech pathology and audiology are systematically explored through lectures, laboratory experiences, and student projects. Possible areas of study include: instrumentation in audiology, manual communication, 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 degrees.

The University has fifty-eight master’s degree programs. Master of Arts degrees are awarded in eighteen programs in the following general categories within the College of Education: Counseling and Personnel, Curricula in Teaching, Early Childhood Education, Educational Leadership, Physical Education, Reading, Special Education, Teaching in the Community College, Teaching the Economically and Educationally Disadvantaged, Teaching in the Elementary School, and Teaching in the Middle or Junior High School.

Eighteen other educational programs at Western also lead to the Master of Arts degree: Anthropology, Art, Biology, Blind Rehabilitation, Chemistry, Communication Arts and Sciences, Economics, English, Geography, History, Home Economics, Mathematics, Medieval Studies, Physics, Political Science, Psychology, Sociology, and Speech Pathology and Audiology.


In 1960 programs leading to the Specialist in Education degree were introduced. This degree is offered in Educational Leadership and School Psychology.

Doctoral programs were initiated in 1966 and were fully accredited by the North Central Association in 1971. Four of these programs, those in Mathematics, Science Education, Sociology, and Psychology, lead to the Doctor of Philosophy degree. The Doctor of Education degree is offered in Counseling and Personnel, 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 Division of Research and Sponsored Programs.
The Division of Continuing Education offers off-campus educational opportunities to qualified persons who wish to pursue their education on a part-time basis. Increasing numbers of men and women are becoming 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 this adult student body, Western's continuing education activities have been expanded to include extension courses for both undergraduate and graduate credit; self-instructional courses; conferences, seminars, and workshops; and other types of short courses for business, community, educational, and industrial leaders and other interested adults. Course and program offerings in the twenty southwestern 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. Self-instructional courses may be taken for credit and applied toward an undergraduate degree, subject to limitations defined by the University, college, or department in which the student is studying. In-service educational programs are planned with business, civic, educational, and professional groups. Advisory services are offered as well as actual training programs. Special programs offered by the Division include noncredit enrichment courses administered by the Center for Adult Education for adults from the community; and training programs in school bus safety and driving offered by the Center for Adult Education.

General University Studies
The Division has developed a baccalaureate program for adult students who are unable to take courses on the Kalamazoo campus. It 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 adviser for the area of concentration. Arrangements for consultation with an adviser will be provided at the student's convenience. Inquiries about the General University Studies programs should 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.

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 exclusive of work included in the area of concentration.
Areas of Concentration

I. American Studies
Adviser: Lewis H. Carlson, College of General Studies

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 this program to their liking. Although the program is primarily nonvocational, it provides a useful background for a number of professional degree programs, such as business administration, public administration, social work, and the law.

The requirements for this 45-hour concentration are as follows:
A. A minimum of 25 credit hours, with at least two courses in each of the following:
   1. Anthropology, Philosophy, Religion
   2. Art, Music, Theatre
   3. English
   4. History
   5. Economics, Social Work, Sociology
   6. Political Science
B. An additional 9 hours in one of the four fields chosen above, thus bringing the total hours in that field to 15 hours.
C. A 3-hour introduction to interdisciplinary studies: either AS 501, Studies in American Culture, or adviser-approved substitutes.
D. An independent study project (3-6 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 and/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.

II. Applied Liberal Studies
Adviser: William S. Fox, College of Arts and Sciences

This program, which leads to the Bachelor of Science degree, is available to those who have completed vocational training programs at a business school, community college, technical institute, or other specialized educational institution. 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:
A. A minimum of 18 credit hours, with at least 6 hours selected from three of the following topical areas:
   1. Community concerns
   2. Communication skills
   3. Environmental concerns
   4. Human relations
   5. International concerns
   6. Technical skills mastery
B. An additional 12 hours in the three areas chosen above.
C. Up to 15 hours of work taken previously may be applied toward this concentration. Acceptance of this credit does not imply transferability to other degree programs at Western.

III. Criminal Justice
Adviser: William S. Fox, College of Arts and Sciences

The General University Studies bachelor’s degree in criminal justice is designed for persons who have completed an associates 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:
1. Prerequisite Courses
   Three social science core courses:
   A. An introductory course in political science
   B. An introductory course in psychology
   C. An introductory course in sociology
   These 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.

2. Area of Concentration (45 hours)
   A. Maximum of 12 hours from a two-year college criminal justice degree program.
   B. Criminal Justice Core Courses (18 hours)
      SOC 362 Criminology
      SOC 482 Criminal Justice Process
   C. Minimum of 15 hours to be selected from:
      ANTH 555 Forensic Anthropology
      BAS 200 Black Presence
      BAS 300 Black Experience
      HIST 301 Law and Justice in Western History
      PHIL 313 Philosophy of Law
      PSCI 320 American Judicial Process
      PSCI 525 Politics of Criminal Justice
      PSCI 526 Politics of Criminal Justice
      PSCI 590 Research Methodology
      SOC 564 Advanced Criminology
      SWRK 465 Correctional Process
      SWRK 567 Institutional Treatment of Offenders
      SWRK 568 Non-Institutional Treatment of Offenders
      SWRK 572 Community Agency Resources

IV. Health Studies
Advisers: Sterling Breed, Charles Spaniol, Moyses Ebling, Counseling Center

This program is intended for registered nurses (R.N.), dental hygienists, radiologic technologists, respiratory therapists, 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:
A. 15 semester hours from the credit transferred for registry or licensure.
B. 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
C. 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 considerable room to accommodate individual interests and objectives.

V. Social Science Studies
Adviser: William S. Fox, College of Arts and Sciences

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), state and local government. The program will appeal to those with an interest in the social sciences and who are considering a related occupational field, as well as to 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:
A. A minimum of 12 semester hours of credit selected from the following: ANN 490, Introduction to Anthropology; ANTH 220, Cultural Anthropology; ANTH 240, Principles of Cultural Anthropology; ECON 201, Principles of Economics; GEOG 205, Our 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.
B. At least 33 semester hours of additional social science credit in anthropology, economics, geography, 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.
VI. Technical-Scientific Studies
Adviser: Don W. Nantz, College of Engineering and Applied Sciences

This program was designed for those interested in technical studies, including the study of aviation, automotive technology, electronics, manufacturing, supervision, and industrial vocational education. A student who has completed a two-year vocational-technical study program at a community college, or one who has achieved a comparable level of preparation through a combination of study and work experience, will find this program of interest. A career oriented program, particularly for those in manufacturing and industrial education, it leads to the Bachelor of Science degree.

The requirements for his 45-hour concentration are as follows:
A. A minimum of 45 semester hours of credit from such areas as graphics, materials and processing, technical analysis, electrical engineering, transportation technology, manufacturing management and mechanical engineering. Students interested in industrial education, such as teachers in skills centers, may substitute such areas as industrial arts, drawing, graphic arts, metal working, woodworking, and auto mechanics.
B. 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.
C. 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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Computer Center, Director
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Registration, Director
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Assistant Director
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Lowell P. Rinker
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Jerry Fuss
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Michael Weber
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Edwin A. Leak
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Dean Honsberger
Employee Relations and Personnel, Director
Stanley W. Kelley
Personnel Services, Manager
Barbara Liggett
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Dawn Dupont
Investments and Risk Management, Director
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Lanny H. Wilde
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Office of The Vice President For Governmental Relations
VICE PRESIDENT FOR GOVERNMENTAL RELATIONS
Robert W. Hannah
Assistant Vice President for Governmental Relations
Chauncey Brinn
Student Financial Aid and Scholarships, Director
Edward W. Harkenrider
Associate Director
Herbert W. Kenz
### Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution and Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams, David W.</td>
<td>Professor of Education and Professional Development</td>
<td>B.A., Ohio Wesleyan, M.A. Ed.D., New York</td>
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<td>Adams, Philip D.</td>
<td>Professor of Humanities</td>
<td>B.A., Western Michigan, M.S., Ph.D., Ohio</td>
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<td>Ahmed, Zarinah</td>
<td>Adjunct Clinical Instructor in Occupational Therapy</td>
<td>B.S., Osmania University (India)</td>
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<tr>
<td>Aker, Ugar</td>
<td>Assistant Professor of Economics</td>
<td>B.A. Robert College (Istanbul), M.A., Ph.D., Wayne State</td>
</tr>
<tr>
<td>Aker, James E.</td>
<td>Adjunct Assistant Professor of Geology</td>
<td>B.S., Missouri (School of Mines and Metallurgy)</td>
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<td>Alag, Gurbux Singh</td>
<td>Associate Professor of Electrical Engineering</td>
<td>B.E. (EE) Saugor University, M.E. (EE) Calcutta University, D.E. Rensselaer Polytechnic Institute</td>
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<td>Professor of Mathematics</td>
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<td>Aust, Charles H.</td>
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<td>Beal, Patrick G.</td>
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<td>B.S.E., Princeton, M.S.E., M.B.A., Ph.D., Michigan</td>
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<td>Beech, Beatrice</td>
<td>Associate Professor Library</td>
<td>B.A., Michigan State, M.S., Western Michigan</td>
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<td>Beech, George T.</td>
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<td>Behn, Harley D.</td>
<td>Professor and Chairman, Department of Transportation Technology</td>
<td>B.S., M.S., M.Ed., Western Michigan</td>
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<td>Belomax, Joseph J.</td>
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<td>Benson, Beverly A.</td>
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</tr>
</tbody>
</table>

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**Economics. 1947-1976**

Professor of Distributive Education, 1947-1972

**Communication Arts and Sciences, 1965-1978**

School, 1923-1960

Leadership, 1961-1983

Science, 1937-1966

Industrial Engineering, 1951-1979

Physical Education, Men, 1942-1970

Chairman of Theatre. 1940-1978

Development, 1963-1978

Professor of Education and Professional Development, 1950-1975

University Professor, 1965-1983

Professor of Transportation Technology, 1955-1975

University Professor, 1936-1976

Assistant Professor of Political Science, 1963-1973

Associate Professor of University Libraries, 1952-1978

Assistant Professor of Psychology, 1961-1983

Professor of Engineering, 1952-1981

Professor of Liberal Arts, 1961-1983

Advisory Professor of Electrical Engineering, 1955-1973

Associate Professor of Physical Education, Men, 1942-1970

Professor of Communications, 1963-1978

Professor of Engineering, 1952-1981

Assistant Professor of Mechanical Engineering, 1952-1981

Professor of Communication Arts and Sciences, 1960-1971

Professor of Philosophy, 1952-1981

Assistant Professor of Education and Professional Development, 1963-1978

Professor of Latin, 1940-1978

Assistant Professor of Mechanical Engineering, 1965-1978

Associate Professor of English, 1922-1964

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Zabik, Roger M., 1967, Professor and Chairman, Department of Health, Physical Education and Recreation
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Zapitny, Roman B., 1976, Adjunct Clinical Associate Professor, Physicians' Assistants Program
M.D., Ludwig-Maximilian University Medical School (Poland)

Zaslow, Joyce R., 1962, Associate Professor of Music
B.A., Valparaiso; M.M., Indiana; D.M.A., Illinois

Zegree, Stephen, 1978, Assistant Professor of Music
B.M., Miami; M.M., Indiana

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B.S., Pittsburgh; M.D., McGill

Zienowicz, James P., 1965, Professor of Physics
B.S., DePaul; M.S., Ph.D., Illinois Institute of Technology

Zimmerman, Laura A., 1965, Assistant Professor of Economics
B.A., Calvin; M.A., Western Michigan

Ziring, Lawrence, 1967, Professor of Political Science
B.A., M.A., Ph.D., Columbia

Zoerhof, William R., 1978, Adjunct Clinical Assistant Professor of Medical Technology
B.A., Calvin College

Zook, Ruth, 1971, Professor of Music
B.S., M.S., Juilliard School of Music
BUILDINGS AND GROUNDS

East Campus

Brink Printing Services—University print shop and mimeographing service.

East Hall—Classrooms and offices for the Departments of Accountancy, Management, and Art. Locker facilities, offices, and a gymnasium for the Department of Health, Physical Education and Recreation.

H.O.I. Building—Building is unassigned.

Montague House—Building is unassigned.

North Hall—Offices and classrooms for General Business, Law, and Marketing. Business library and offices of the dean, College of Business.

Oakland Recital Hall—Office and classroom space, and a 300-seat auditorium. Building is unassigned.

Physical Plant—Trades maintenance shops, grounds crews and University garage, physical plant department.

Richards Building—Building is unassigned.

Speech and Hearing Center—The Department of Speech Pathology and Audiology.

Walwood Hall—Snack bar and meeting rooms. Classrooms and offices for College of Business.

West Campus

Brown Hall—Classrooms for the Communication Arts and Sciences, English, and Languages and Linguistics Departments.

Dalton Center—Dean, College of Fine Arts. Departments of Music and Dance. Music library and classrooms.

Dunbar Hall—Classrooms for the Departments of History, Economics, Philosophy, Religion, and Political Science. College of General Studies and Division of Instructional Communications.

Eliot House—Offices for Continuing Education, Faculty Senate, Foreign Student Affairs, Minority Student Services, Pupil Transportation, Purchasing, Research Services, Information Services, News Services, Sports Information, University Publications, and Women’s Services.

Everett Tower—Faculties offices for Departments of Physics, Geology, and Mathematics.

Faunce Student Services Building—Counseling, financial aid, scholarships, housing, student activities, orientation. Offices for major student organizations. WIDR, and Western Herald.

Fetzer Business Development Center—A professional environment for management-oriented conferences, seminars, workshops, and development programs.

Fridemann Hall—Offices for dean of College of Arts and Sciences, dean of College of General Studies. Faculty offices for Departments of Computer Science, Economics, History, Philosophy, and Political Science. WMUK-FM studios.


Hillside East—Alumni center, aural press, public administration program, and custodial services.

Hillside West—Honors College, testing services, Cistercian studies and library, and medieval studies.

Kanley Memorial Chapel—The campus religious center, made possible through a gift from the estate of the late William Kanley, an alumnus, opened in 1951.

Knauss Hall—Instructional facility with four lecture halls and exhibit space.

Knohlwood Building—Art Department, ceramics, studio arts.

Knohlwood Metal Building—Art Department foundry and kiln.

Kohrman Hall—Departments of Electrical Engineering, Engineering and Technology, Consumer Resources and Technology, Industrial Education, Industrial Engineering, Mechanical Engineering, Transportation Technology, Dean, College of Engineering and Applied Sciences.

Maybee Hall—Building is unassigned.

McCracken Hall—Chemistry Department, Department of Paper Science and Engineering, and Biomedical Sciences.

Miller Auditorium—Cultural center for the performing arts of music, opera, drama, and the dance. The auditorium has a capacity of 3,550 with seating arranged on three levels in continental style.

Moore Hall—Offices and classrooms for the School of Social Work and offices for General Studies, Anthropology, and the Intellectual Skills Development Program.

Oaklands—Home for two former University presidents. Currently used for receptions and official gatherings.


Sangren Hall—College of Education. The departments of Art and Sociology. Educational Resources Center, and the Reading Center and Clinic.

Seibert Administration Building—University administration offices.

Shaw Theatre—The University Theatre presents productions in this 600-seat theatre.

Sprau Tower—Offices of the Communication Arts and Sciences, English, and Languages and Linguistics Departments. Black Americana Studies Program.

Trimpe Distributive Education Building—Classroom and office space for vocational and distributive education.

University Health Center—75-bed student health service building, opened in 1969.

University Student Center—Social and recreational facilities are provided for students and are available for other educational ventures as schedules permit. The building includes a snack bar, cafeteria, bowling alley, game room, Western’s Campus Bookstore, U.S. Postal Substation, lounges, ballroom, music room, faculty lounge and dining room, and the Board of Trustees office and meeting room.

Waldo Library—The library’s total collection numbers more than 1.7 million bibliographic items, including books, bound periodicals, recordings, maps, documents, and materials in microform. Also located in the building are the School of Library and Information Science, the University Archives, the Audiosvisual Film Library, and Visually Handicapped Reading Services.

Wood Hall—Biology. Psychology, Occupational Therapy, and Geology Departments. University greenhouse.
Off-Campus
Aviation Building—Shops, laboratories, and classroom for aircraft technology and pilot training
Kleinstuch Nature Preserve—Given in 1922 by Mrs. Caroline Hubbard Kleinstuch, this fifty-acre tract provides instructional space for biological sciences, near the campus and inside the city of Kalamazoo.

Athletic Facilities
Bowling Alley—Twenty bowling lanes are available in the University Student Center for physical education classes and recreation
Gary Physical Education Center
Physical Education Building—Includes a regulation swimming pool with barrier free access, nine handball courts, gymnasium floor 90 feet by 120 feet, wrestling room, special purpose rooms, classrooms, locker facilities, and offices for the physical education department, Read Fieldhouse and the intramural building connect to this building.

Intramural building—Includes a multipurpose gymnasium 120 feet by 235 feet, which accommodates four basketball courts, six volleyball courts, ten badminton courts, four tennis courts, and a gymnastics area. An artificial surface area 140 feet by 200 feet is also in this building. These two areas are used for intramural and recreational sports activities, physical education classes, and various inter-collegiate athletic programs.

Read Fieldhouse—Provides indoor facilities for intercollegiate athletic programs in basketball, volleyball, and gymnastics. It has a seating capacity of 7,400, a hard surface, main area floor 160 feet by 212 feet, and a 200-meter resilient indoor track.

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

Hyames Field—A collegiate baseball field with seating for 2,500. Immediately adjacent to Hyames Field is a women's softball field.

Intramural Fields—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 intramural-recreational sports program.

Kanley Field—A running track with all-weather surface, including a regular field hockey and field events course on the infield.

Oakland Gymnasium—Located on the East Campus, this building houses the Departments of Health, Physical Education and Recreation, and Military Science (ROTC).

Tennis Courts—Twenty asphalt courts in the Ellsworth Hall-Goldsworth Valley area accommodate physical education classes, intramural and recreational sports, and the intercollegiate tennis program. Davis courts are located on Davis Street below East Hall.

University Recreation Building
Lawson Ice Arena—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.

Gabel Natatorium—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.

Waldo Stadium—An intercollegiate football stadium with artificial turf and 25,000 seats. It is used for recreation, intramural activities, and instruction, in addition to competitive athletics.

Western Michigan University

Key to Building Numbers
*An asterisk in front of a building name denotes that the building has been made physically accessible to the handicapped.

32 * Administration Building
12 * Brink Printing Services
42 * Brown Hall
82 * Dalton Center
68 * Dunbar Hall
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72a * Eichner Field—Goldsworth Valley Unit #2
58 * Ellsworth Hall
57 * Everett Tower
77 * Faunce Student Services Building
84 * Fetzer Business Development Center
67 * Friedmann Hall
72d * Gerneau Hall—Goldsworth Valley Unit #2
49 * Gary Physical Education Center
72b * Harvey Hall—Goldsworth Valley Unit #2
55 * Health Center
60 * Henry Hall
26 * Hillside Offices
18 * H.O.I. Building
16 * Hyames Field
31 * Kanley Chapel
50 * Kanley Running Track
69 * Knauss Hall
39 * Knollwood Building
44 * Kohrman Hall
53 * Lawson Ice Arena & Gabel Natatorium
72c * LeFevre Hall—Goldsworth Valley Unit #2
29 * Maybee Hall
27 * McCracken Hall
40 * Miller Auditorium
19 * Montague House
47 * Moore Hall
3 * North Hall
6 * Oakland Gymnasium
9 * Oakland Recital Hall
33 * Oakland's
80 * Parking Ramp #1
21 * Physical Plant Building
25 * Public Safety
70 * Public Safety Annex
62 * Read Fieldhouse
53 * Recreation Building
72e * Residence Halls
73a * Britton Hall—Goldsworth Valley Unit #1
75 * Bellow Hall and Annex
73c * Britton Hall—Goldsworth Valley Unit #1
28 * Burnham Halls
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46 * Davis Food Commons
30 * Draper Hall
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37 * Elmwood Apartments A-Q
71d * Fox Hall—Goldsworth Valley Unit #3
74 * French Hall
66 * Goldsworth Valley Apartments
73a * Hadley Hall—Goldsworth Valley Unit #1
71a * Harrison Hall—Goldsworth Valley Unit #3
60 * Henry Hall
65 * Hokeje Hall
73d * Shilling Hall—Goldsworth Valley Unit #1
30 * Siedschlag Hall
52 * Stadium Drive Apartments
71c * Stinson Hall—Goldsworth Valley Unit #3
48 * Zimmerman Hall
17 * Richards Building
56 * Rood Hall
38 * Sangren Hall
97 * Sara Swickard Preschool
32 * Seibert Administration Building
41 * Shaw Theatre
98 * Soccer Field
5 * Speech and Hearing Center
43 * Sprau Tower
90 * Stores Building
77 * Student Services Building
35 * Trimmer Distributive Education Building
59 * University Student Center
11 * Upholstery Shop
7 * Vandercook Hall
61 * Waldo Library
15 * Waldo Stadium
10 * Walwood Hall
4 * West Hall
36 * Wood Hall

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