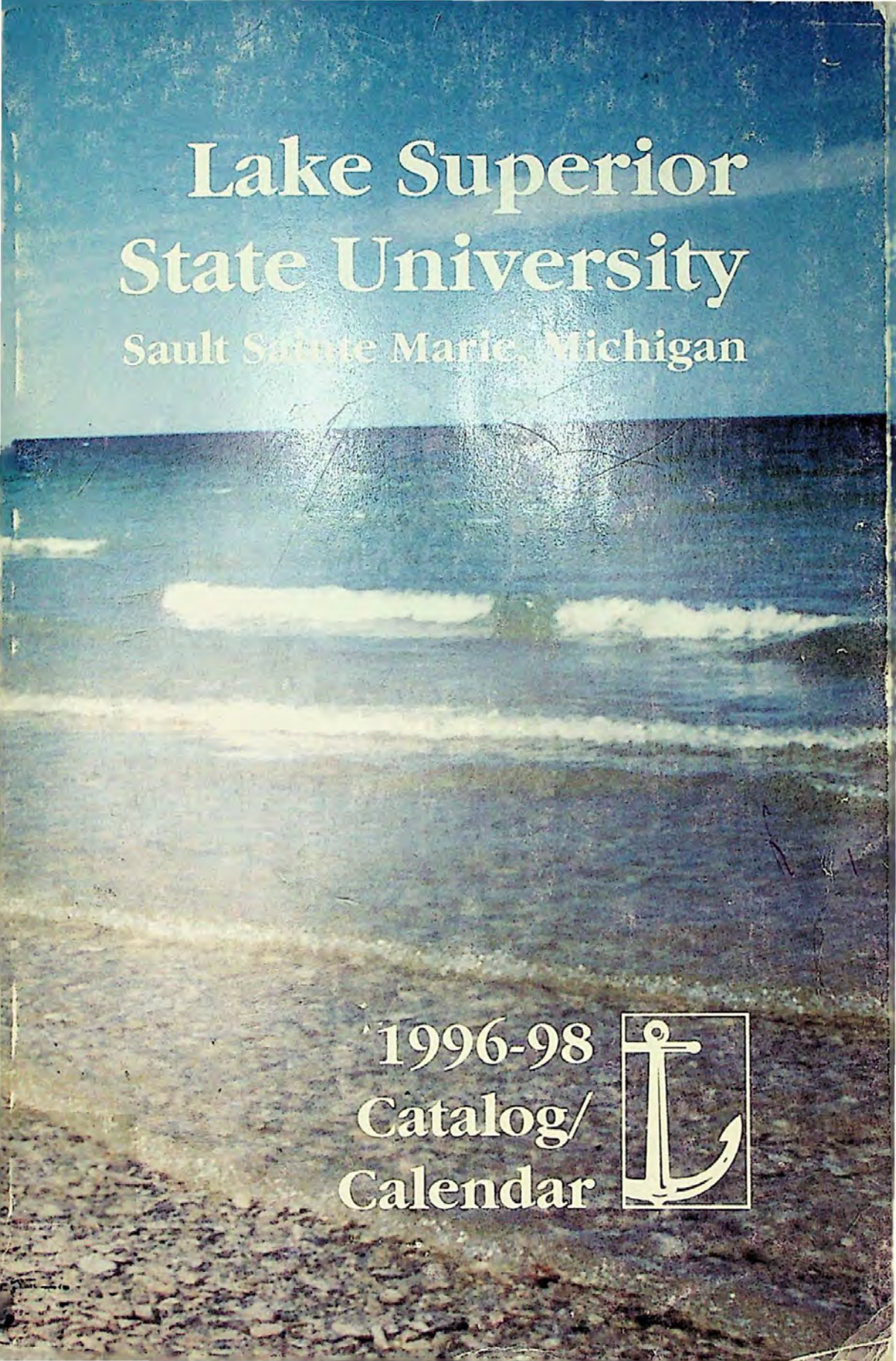
Lake Superior State University

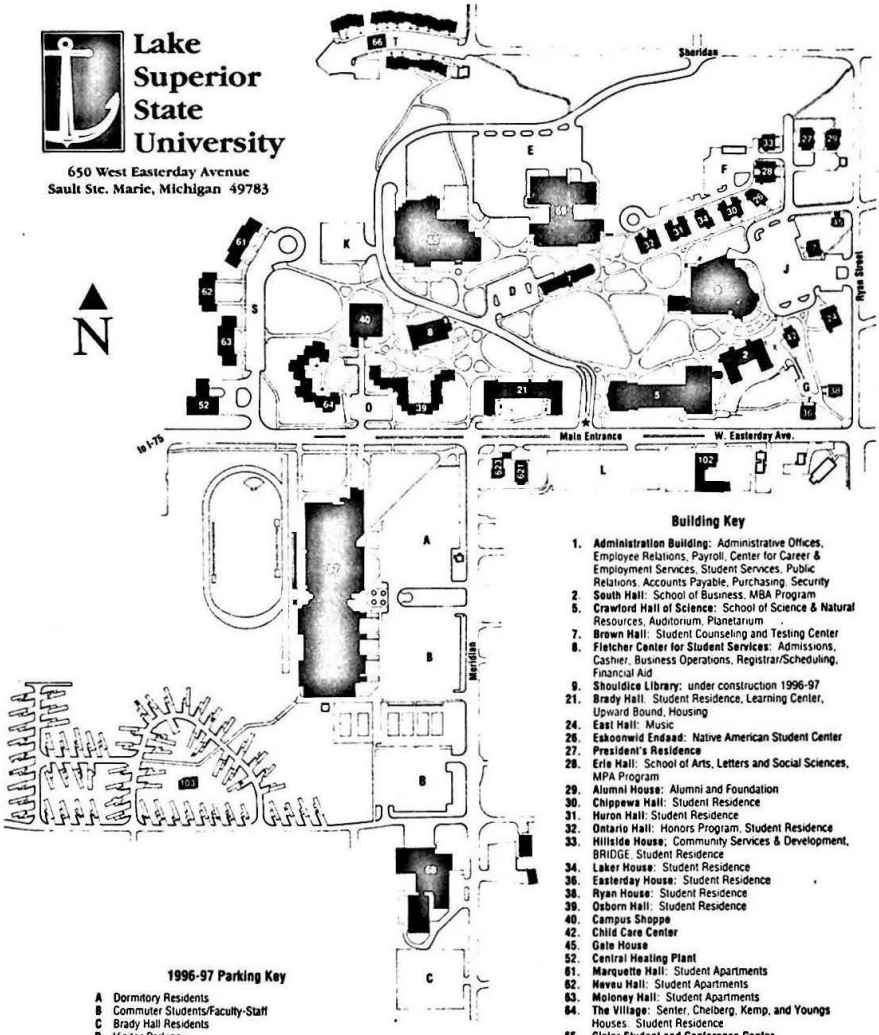
Sault Sainte Marie, Michigan



1996-98 Catalog/ Calendar

Lake Superior State University

650 West Easterday Avenue
Sault Ste. Marie, Michigan 49783



Building Key

1. **Administration Building:** Administrative Offices, Employee Relations, Payroll, Center for Career & Employment Services, Student Services, Public Relations, Accounts Payable, Purchasing, Security
2. **South Hall:** School of Business, MBA Program
5. **Crawford Hall of Science:** School of Science & Natural Resources, Auditorium, Planetarium
7. **Brown Hall:** Student Counseling and Testing Center
8. **Fletcher Center for Student Services:** Admissions, Cashier, Business Operations, Registrar/Scheduling, Financial Aid
9. **Shouldice Library:** under construction 1996-97
21. **Brady Hall:** Student Residence, Learning Center, Upward Bound, Housing
24. **East Hall:** Music
26. **Eskoonwid Endaad:** Native American Student Center
27. **President's Residence**
28. **Erie Hall:** School of Arts, Letters and Social Sciences, MPA Program
29. **Alumni House:** Alumni and Foundation
30. **Chippewa Hall:** Student Residence
31. **Huron Hall:** Student Residence
32. **Ontario Hall:** Honors Program, Student Residence
33. **Hillside House:** Community Services & Development, BRIDGE, Student Residence
34. **Laker House:** Student Residence
36. **Easterday House:** Student Residence
38. **Ryan House:** Student Residence
39. **Osborn Hall:** Student Residence
40. **Campus Shoppe**
42. **Child Care Center**
45. **Gate House**
52. **Central Heating Plant**
61. **Marquette Hall:** Student Apartments
62. **Neveu Hall:** Student Apartments
63. **Moloney Hall:** Student Apartments
64. **The Village:** Senter, Chelberg, Kemp, and Youngs Houses. Student Residence
65. **Cisler Student and Conference Center**
66. **Townhouses:** Student Residence
67. **James Norris Center:** Taffy Abel Arena, Athletics, Recreation, Criminal Justice, Student and Public Recreation
68. **Maintenance Building:** Physical Plant, Central Receiving, Motor Pool
69. **Center for Applied Sciences and Engineering Technology:** School of Engineering and Mathematics, School of Health & Human Services
102. **Newman Center**
103. **Blair Hastings Park:** Mobile Home Trailer Park
621. **Edna M. Youngs Student Health Center**
623. **Faculty Residence**

1996-97 Parking Key

- **A** Dormitory Residents
- **B** Commuter Students/Faculty-Staff
- **C** Brady Hall Residents
- **D** Visitor Parking
- **E** Upperclass Commuter/Faculty-Staff
- **F** University Row Students
- **G** Easterday/Ryan House Residents
- **J** Closed for 1996-97
- **K** Moloney, Neveu, Marquette and Townhouse Residents, visitor & Campus Shoppe
- **L** Upperclass Commuter/Faculty-Staff
- **O** Dormitory Residents
- **S** Moloney, Neveu and Marquette Hall Residents
- **T** Townhouse Residents

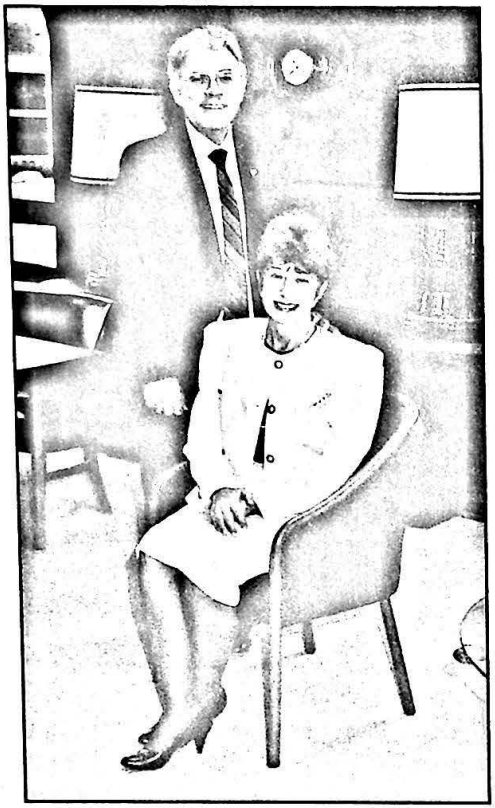
NO PARKING ON ANY UNIVERSITY DRIVE.

CONTENTS

About this Catalog...

The Lake Superior State University catalog does not constitute a contract between the University and its students on either a collective or individual basis. Changes sometimes occur after the catalog has been printed. Lake Superior State University does not assume a contractural obligation with its students for the contents of this catalog.

LSSU admits and hires men and women, veterans and disabled individuals of any race, color, national or ethnic origin, or marital status in compliance with all appropriate legislation, including the Age Discrimination Act. The compliance officer is Beverly White.



Welcome to a Better Tomorrow

Personal. Natural. Superior — these words characterize Lake Superior State University.

Here you will find the 19-1 student/faculty ratio that allows a personal education. Faculty and staff interact with students in and out of the classroom. You will know your professors on a personal basis and they will know you. It is one of the many benefits of a smaller campus.

Lake State is a place of natural beauty. Surrounded by lakes, rivers, forests and the Canadian landscape, the campus is a great place to live and learn. The air is clean, the snow white, the sun bright and the campus safe.

Superior describes our University as a whole. Outstanding academic programs and professionals who are here to teach provide the foundation for your career. A tremendous athletic program including national championship caliber hockey, student life programs and great people make the Lake State experience truly special.

Yes, Lake Superior State University is an exciting and vibrant place to be. You, too, will soon be Lake State Proud!

Robert D. Arbuckle

Robert D. Arbuckle
President

A LOOK AT LSSU

Established in 1946 to address the needs of returning World War II veterans and to provide educational opportunities to the people of the Eastern Upper Peninsula, Lake Superior State University still embodies the essence of the early days. A personal education in a safe and friendly environment remains a hallmark of today's LSSU.

Our beautiful 115-acre campus overlooks the Michigan and Ontario twin cities of Sault Ste. Marie, the St. Mary's River, and the world famous "Soo Locks". The school is literally the last stop on Interstate 75 which originates in the Florida Keys.

The campus served as Ft. Brady starting in 1822 after the fort was relocated from the banks of the St. Mary's. The fort was deactivated in 1944 and, thanks to the efforts of local volunteers and leadership at Michigan College of Mining & Technology in Houghton, opened in the fall of that year as the Sault Ste. Marie Residence Center of MCMT.

The Sault Branch was rechristened Lake Superior State College of Michigan Technical University in 1966. Autonomy as an institution arrived for LSSC in 1970. University status was granted in 1987 to the state's smallest public institution of higher learning. Enrollment has grown from the original class of around 227 to more than 3,400 students.

There are 14 buildings on the National Historic Register contributing to the University's sense of tradition. This unique architectural blend is a reminder of the "weapons to plowshares" history of the setting.

Community: Sault Ste. Marie (pop. 18,000) is one of the oldest cities in North America, having begun as a fur trading center in the early 17th century. A Jesuit mission was established here in 1641, and Father Marquette founded the first permanent settlement 27 years later, within the boundaries of what was to become Michigan. The Sault celebrated its 300th birthday in 1968.

Our sister city, Sault Ste. Marie, Ontario, is a cultural, recreational, social and entertainment center. The combined population of the Twin Saults (101,000) allows for an international flavor abounding with the opportunities of a city, and the safety and comfort of a small town.

Accreditation

Lake Superior State University is accredited by the following agencies:

- North Central Association of Colleges and Secondary Schools
- National League for Nursing
- Council on Medical Education and Hospitals of the American Medical Association.
- Technology Accreditation Commission of the Accreditation Board for Engineering and Technology in:
  - electrical/computer
  - mechanical engineering technology
  - electrical/ electronics
  - mechanical
  - automated manufacturing engineering technology.

Programs

Master's Degrees

Business Administration
Public Administration

Baccalaureate Degrees

(4 years)

Accounting, BS
Biology, BA
  Elementary and Secondary Teaching
Biology, BS
Business Administration, BS
  Specialty in: Accounting, Management, and Marketing
Clinical Laboratory Science, BS
Computer and Mathematical Sciences, BS
Criminal Justice, BS
  Emphasis in: Corrections, Criminalistics, Generalist, Law Enforcement, Loss Control, Public Safety
Electrical Engineering, BS
Elementary Teaching, BA, BS
Engineering Management, BS
English Language and Literature, BA
  Elementary and Secondary Teaching
Environmental Chemistry BS
Environmental Engineering Technology BS
Environmental Science, BS
Exercise Science, BS
Finance and Economics, BS
Fine Arts Studies, BA
Fire Science, BS
  Emphasis in: Engineering Technology, Generalist, Hazardous Materials
Fisheries and Wildlife Management, BS
Geology, BS
  Concentration in: Environmental Geology, BS
  Elementary and Secondary Teaching
History, BA, BS
  Elementary and Secondary Teaching
Human Services, BS
Individualized Studies, BA, BS
Legal Assistant Studies, BS
  Specialties in: Criminal Law, Labor Law, Personal Injury, Legal Administration, Legislative/Constitutional Law
Manufacturing Engineering Technology, BS
Mathematics, BS
  Elementary and Secondary Teaching
Mechanical Engineering, BS
Nursing, BS
Political Science, BA, BS
  Concentrations in: General, Pre-Law, Public Administration
Psychology, BA, BS
Recreation Management, BA, BS
  Concentration in: Parks and Recreation Management
Social Science, BA, BS
Sociology, BA, BS
Teacher Education in cooperation with Michigan State University
Therapeutic Recreation, BS

Associate Degrees

(2 years)

Business Administration
Chemistry
Criminal Justice/Corrections
Criminal Justice/Law Enforcement
Early Childhood Education
Fire Science
General Engineering
General Engineering Technology
Health/Fitness Specialist
Legal Assistant Studies
Liberal Arts
Manufacturing Engineering Technology
Natural Resources Technology
Office Administration
Personal Computer Specialist
Substance Abuse Prevention and Treatment
Technical Accounting
Telecommunications Engineering Technology

Certificate Program

(1 year)

Information Processing
Personal Computer Specialist

Pre-Professional Transfer Programs

(1-4 Years)

Dentistry, forestry, journalism, law, medicine, optometry, pharmacy, veterinary medicine, special education.

Minors

Accounting-Finance, Art, Biology, Business French, Chemistry, Child Development, Communication, Computer Science, Corrections, Counseling, Economics, Economics/Finance, English Language and Literature, English Language and Literature Teaching, Environmental Science, Fire Science, French Language and Literature, General Business, Geography, Geography Teaching, Geology, Geology Earth Science, Gerontology, Health Care Administration, History, History Teaching, Human Resource Management, Human Services Administration, Humanities, Institutional Loss Control, Japanese Study, Journalism, Journalism/Writing, Law Enforcement, Legal Assistant Studies, Loss Control, Marketing, Mathematics, Mathematics Elementary Teaching, Mathematics Secondary Teaching, Native American Studies, Office Administration, Personal Computer Specialist, Political Science, Political Science Teaching, Psychology, Psychology Teaching, Public Administration, Public Relations, Recreation Studies, Recreation Studies Skill, Sociology, Sociology/Social Work, Sociology Teaching, Speech/Drama, Substance Abuse Counseling, Teaching, Writing

University Talk

Terms & phrases you should know.

Academic Credit: (or **credit hours** or **credit**): One academic credit is generally earned for every 15 hours in lecture during a semester.

Academic Probation: The result of a grade point average falling below an acceptable level.

Academic Year: Two 15-week semesters plus a summer semester.

Accredited: Quality of academic programs has been approved by an outside rating agency.

Admission: Your acceptance for enrollment.

Advisor: Faculty member who offers you academic advice, explains requirements and assists in scheduling. Ask your department head for an advisor.

Associate's Degree: Awarded for two-year programs.

Bachelor's Degree: or Baccalaureate — awarded for a "four-year" program.

Calendar: Important dates of the academic year.

Certificate: Requires one year of study.

Corequisite: Course you must take during the same semester as another course.

Cognate: A specified course, generally in field other than your major, which you must take for your program.

Competency Requirements: You must pass standard competency tests in writing and mathematics befor receiving your degree.

Courses: Descriptions in this catalog generally show a course number, followed by the course name, and the number of academic credits shown at the right of the column.

EN 110 Freshmen Composition (3)

Credit: See academic credit.

Curriculum: (major, program) Courses required for specific degree or certificate.

Departments: Sixteen academic departments, each administered by a "chair" and offering courses in one or more disciplines.

Discipline: Group of related courses, such as mathematics.

Elective: Course distinguished from required course. You pick it from a number of specified courses.

Field Placement: See practicum.

Financial Aid: Includes grants, loans, scholarships or work-study.

Full-Time Student: If you enroll for 12 or more credits in a semester.

General Education Requirements: Courses you must take to earn a bachelor's or an associate's degree in liberal arts; provides you with broadly based education.

GED Examinations: (General Education Development examination): If you didn't finish high school, but believe you learned enough in other ways to qualify for university, this is the test for you.

Grade Point Average (GPA): Number of points divided by the hours of credit attempted. It figures your grade for a class. Cumulative grade point average is the average for all your classes.

Internship: (practicum, field placement or clinical): working in a 'real life' setting for academic credit.

Major (curriculum): A concentration of courses in your specific area of study.

Minor: A lesser concentration (20 credits or more).

Part-Time Student: You, if you take less than 12 credits in a semester.

Practicum: Another word for internship.

Prerequisite: Certain courses you must successfully complete before enrolling in a specific course. You must satisfy prerequisites, and other stated conditions, before enrolling in a course, or have permission from an instructor to waive the prerequisites. It is your responsibility to be certain you have the approved prerequisites.

Program (also curriculum): A group of courses you must take in order to earn a degree or certificate.

Registration: Each semester you must request specific classes for the next semester, pay tuition, etc.

Required Courses: You must take these to earn your degree.

Schools: Five academic schools comprised of 16 departments, each administed by a "dean".

Semester: Sometimes called term: See academic year.

Term: Sometimes called semester: See academic year.

Transcript: Official record of your coursework maintained by LSSU registrar.

Transcript, Official: Mailed directly from principal's or registrar's office of issuing institution to LSSU Admissions Office. It must bear the seal of the institution and signature or stamp of school official.

Withdrawal: Procedure when you drop a course or from school.

Academic Policies

The academic policies and regulations of Lake Superior State University are guides to your responsibilities as a student. Advisors, department heads and campus personnel will help you understand these policies and regulations. However, it is up to you to comply.

The Academic Year

Lake Superior State University operates on a semester system. The academic year consists of a fall semester (September through December) and spring semester (January through April or early May). Fall and spring semesters consist of 15 weeks of instruction followed by a final examination week. Summer session courses, for the most part, are eight weeks including two days for final examinations. Specific dates for each semester can be found in this catalog.

Academic Credit

One credit is awarded for 15 hours of classroom instruction in lecture/recitation courses. For example, a three-credit course might be scheduled 9:00-9:50a.m. Monday, Wednesday and Friday. A class period is usually 50 minutes, with 10 minutes between classes.

Courses including laboratory, field work or other non-lecture formats meet for more than one hour a week per credit. In general, one credit requires an average of three hours of preparation/study time a week for the semester. In lecture/recitation courses this normally means one hour of classroom attendance and two hours of preparation or study.

An average credit load per semester is 16. A minimum of 124 credits is required for a baccalaureate degree.

Student Classifications

There are four class levels: 0 to 25 credits = freshman; 26 to 55 credits = sophomore; 56 to 87 = junior; 88+ = senior.

Student Curriculum Choice and Advising

You are encouraged to select a major program upon admission to the University. The academic department offering the chosen program is called the major department. You will be assigned an academic advisor — a faculty member who teaches in your chosen field. Your advisor will help in with course selection, understanding program and University requirements and regulations, evaluation of academic progress, and matters related to successful academic achievement. Lake Superior State University is firmly committed to providing personalized advising and support. You are encouraged to actively seek help from your instructors, advisors, department chair, Learning Center, Counseling Center, and any other faculty or staff member. The Learning Center provides academic tutoring as does the Native American Center and academic departments. These services are usually provided without charge. Additional information concerning advising services is listed under testing and counseling service in this catalog.

If you are undecided about a major program, you are considered majoring in liberal arts, an associate degree program. A provisional academic advisor is assigned until a major is chosen.

You may change your major curriculum by processing a Curriculum Change Card through the Registrar's Office. The Registrar's Office, Counseling Center and departmental offices have the card and instructions. Curriculum Change Cards must be filed with the Registrar's Office for each curriculum change. This is important so that advisor materials, grade reports and graduation information are sent to the right school and advisor. You are assigned a new advisor when you change curricula. You may request a change of advisor by asking the dean of your school.

If you are provisionally admitted to Lake Superior State University, an academic advisor from the Learning Center is assigned. This assignment is active until the exiting criteria enables unconditional entrance to a chosen major.

Semester Course Selection

A course schedule listing all courses and relevant information is published each semester. The booklet includes classes offered, days and hours of offerings, instructor and final examination time. You are responsible for reading the course schedule and adhering to its instructions. Course schedules and scheduling materials are available from all departmental offices and the Registrar/Scheduling Office.

You may schedule your courses, after consulting with your academic advisor, by submitting required materials to the Registrar/Scheduling Office according to the time schedule described in the course schedule. There is a limited period to pay tuition and related fees. If you fail to make payment or arrangements, your enrollment will be canceled.

Several factors assist or limit course selections. Placement examinations for mathematics, English, and reading are administered by the Counseling and Testing Center. These examinations are required before you can schedule your first courses in mathematics or English.

Maximum student credit load is 20 credits a semester. An exception is possible if you carry a 3.00 cumulative grade point average and written approval from the dean of the school. Students on academic probation should not take more than 15 credits a semester.

Prerequisites: Before you enroll in a course, you must satisfy prerequisites and other stated conditions before enrolling in a course **or** have the instructor's permission to waive the prerequisites. Enrollment in a course may be revoked (with an N grade) during the regular drop period if the prerequisites have not been met. Responsibility rests with you to be certain that you have the approved prerequisites.

We rarely allow courses to be taken out of sequence. Such courses impose an additional burden not reflected in the number of credits carried. Students must earn passing grades in a prerequisite course before taking the next course in sequence. For some courses, a C (2.00) grade or better is required. Exceptions may be made only by school dean or the course instructor. Students who receive a D grade in a prerequisite course or a course in the major are advised (and may be required) to repeat the course to raise the D before continuing.

Repeats: You may not repeat a course by enrollment or examination if you have passed a course for which the repeated course is a prerequisite. Exceptions may be granted by the school dean with the concurrence of the registrar.

Changes in course schedule: Classes can be added or dropped during a defined period at the beginning of each semester. Courses deleted during this period will not appear on a student's permanent record. The add/delete period for a full semester course begins on the first day of the semester, and ends on the

sixth University business day. For courses that span less than a full semester, a shorter add/delete period may be in place. Schedule changes are initiated at the Registrar/Scheduling Office where records of class availability are maintained. In some cases faculty permission is required for course changes. Detailed information on adding or deleting classes is in the course schedule booklet. **A student's add or withdrawal from a course is not officially complete until the appropriate form is completed with the Registrar/Scheduling Office.** You are advised to retain the official receipt upon completion of any add or drop.

Late Adds: Should you wish to add courses after the end of the add/delete period, you need permission and a special form from the Registrar's Office, obtain written approval of the instructor, and return the form to the Registrar's Office. There is a service charge for this process. **You are responsible for all class work missed prior to adding the class.**

Non-attendance at first class: You may be dropped from a class during the delete period if you fail to attend the first class meeting. The instructor must, if taking this action, submit a delete form and notify the student.

Dropping courses after the add/delete period: You may drop a course during the first 40 days of a full semester course. For courses running less than a full semester, the current course schedule booklet lists official dates for each semester. (The period for dropping equals 54 percent of the course instructional period.) Your record shall indicate an N grade for each course officially dropped during this period. Forms for the procedure are available in the schools or Registrar/Scheduling Offices.

After the eight-week drop period, drops are allowed only for extenuating circumstances. In these cases, records shall indicate a W grade for courses officially dropped. The student must receive the instructor's recommendation and the approval of the registrar. Forms are at the Registrar's Office.

Class Attendance

You must decide for yourself when it is necessary to be absent from class. Instructors may lower grades if they believe excessive absences require this action. The policy on attendance reads as follows:

1. Absences are handled according to the instructor's discretion, consistent with school policy.
2. Instructors are encouraged to report consecutive or excessive absences to the vice president for student programs and services.
3. Participation in an official University function is an excused absence when approved by the provost. You will not be penalized for such participation. You are responsible for work missed and must confer with your instructor on this matter.

Complete Withdrawal from the University

If you are a full-time student and withdraw from the University during the first eight weeks of the semester, you should report in person to the Counseling Center and complete a Withdrawal Form for the registrar. The registrar will authorize the appropriate refund. Refunds are mailed after the end of the refund period. After the eight-week drop period, students must report to the Registrar's Office for the Withdrawal Form.

Proper clearance of University obligations assures that you can later receive transfer of credits. Make sure any holds on your transcript are cleared, or you will not receive a transcript of credits until clearance is complete.

The Grading System

Grade point average (GPA): To compute the grade point average for a semester, divide the total points earned by the total credits carried. Credits carried include those failed or earned but not credit for credit/no credit courses. You can figure cumulative grade point average by dividing the total points earned by the credits carried in all semesters. When a course is repeated, count only the credits carried and the points of the last grade earned. Thus, successfully repeating courses is an effective way to improve cumulative GPA. A cumulative grade point average of 2.00 for all credits is required for graduation. Further, a 2.00 grade point average for all in major and minor(s) departmental courses is required. Some programs require a higher grade point average in the major curriculum.

Incomplete grades (I): An incomplete grade is given only if you are unable to complete a course due to circumstances beyond control.

Course work must be made up by the date specified by the instructor and must be within a maximum of two semesters in residence or the incomplete grade becomes a failure. Summer semesters count if you are enrolled for summer classes.

No grade (N) and withdrawal (W) grades: An N grade will be given for each course officially dropped during the first eight weeks and a W grade will be given for each course officially dropped after the eight-week drop period.

Deferred grades (Z): Deferred grades are given in those courses where work is planned to extend beyond a single semester.

Grade reports: Grades and credit reports are mailed to your home address after each semester.

Change of grade: You may request an instructor to review and change a grade within two semesters. Summer semesters do not count unless you are enrolled during the summer.

Dean's List: Those who complete 12 or more semester credits with a grade point average of 3.50 or higher earn Dean's List honors for that semester, acknowledging their outstanding achievement.

Grades and Grade Points

Grade	Grade Points per Credit	Grade	Grade Points per Credit
A+	4	D Inferior	1
A Excellent	4	D-	.7
A-	3.7	F Failure	0
B+	3.3	I Incomplete	0
B Good	3	N No Grade	0
B-	2.7	W Withdrawal	0
C+	2.3	Z Deferred	0
C Average	2	CR Credit	0
C-	1.7	NCR No Credit	0
D+	1.3		

Academic Probation

You have a considerable degree of self-determination at LSSU; you decide when and how long to work on each assignment. The best way to succeed in this task is to work out a weekly schedule with two hours of study time earmarked as preparation for each one-hour class. In a few cases, the instructor may suggest some other division of time.

Most students maintain good work in all their courses. A few fall short of satisfactory performance. In these cases, a system of academic probation is used.

Academic probation is a warning that scholastic performance is below the University's minimum requirements. During this period, students should determine whether to continue their programs as planned.

No student, while on probation, shall carry more than 15 credits a semester — exclusive of band and recreational activities.

The vice president for student programs and services, in consultation with the student's advisor, may impose restrictions on the student's extracurricular activities.

It is your responsibility to be familiar with academic regulations and to keep informed as to your academic standing. The rules governing academic probation, dismissal and reinstatement follow.

Academic Standing Table

Full-and Part-Time Students
Academic Probation and Dismissal Policy

Cumulative Semester Credits Carried at LSSU	Minimum for Good Standing	Cumulative Grade Point Average on Probation	Dismissal
1-18.99	1.81*	less than 1.81	Not subject to dismissal
19-25.99	1.81	1.41-1.80	1.40 or less
26-40.99	1.86	1.51-1.85	1.50 or less
41-55.99	1.91	1.61-1.90	1.60 or less
56-72.99	1.93	1.71-1.92	1.70 or less
73-87.99	1.95	1.81-1.94	1.80 or less
88+	1.97**	1.91-1.96	1.90 or less

**Students will not be dismissed for adacemic deficiencies until they have enrolled in at least 19 semester credits at Lake Superior State University.*
***A cumulative grade point average of 2.00 for all credits carried at LSSU, and a cumulative grade point averate of 2.00 for all courses required in the student's major and minor is necessary for graduation.*

1. Academic probation is in effect if the cumulative grade point average is in the "on probation" category.
2. Students whose cumulative grade point average at the conclusion of a semester falls into the dismissal range of the academic standing table will be dismissed.
3. After a first or second dismissal there are these options:
   a. Allow two semesters (summer may be counted for one semester) to elapse before re-enrolling or
   b. Petition the Scholastic Standards Committee for immediate readmittance. This action is initiated with the registrar. The committee can either permit early readmittance with specific conditions required of the student or deny the student's request. Subsequent to the committee's denial, appeal can be made to the provost, whose decision is final.
4. Students who are reinstated are subject to dismissal after any semester should their cumulative grade point average fall below the prescribed

level. A student may continue, with permission of the registrar, on the record as being on probation instead of dismissed, if his/her record has improved during the semester and a 2.00 grade point average is achieved for that semester's courses.

5. Students dismissed a third time will not be reinstated without the permission of the provost. Three semesters must elapse from the time of dismissal before a petition for readmittance is considered. Summer may count for one semester.
6. The Scholastic Standards Committee may, on the recommendation of a school dean, require withdrawal from any course or courses in which preparation, progress, effort or conduct is unsatisfactory and may on the recommendation of the provost or vice president for student programs and services, dismiss students from the University if their background, overall academic accomplishment, conduct or attitude toward their work is deemed unsatisfactory.

Credit/No Credit Courses

You can enroll in some courses on a credit/no credit basis for which either a grade of CR or NCR is given. To be eligible for this option, you must be in good academic standing. Only one course per semester is permitted and no more than 12 semester credits in such courses may be presented toward degree requirements. The credit/no credit option is not available in courses which satisfy major, minor or general education requirements. Make sure you apply at the Registrar's Office if you want to enroll in a graded course under the credit/no credit policy. This option is available during the drop/add time frame and your decision may not be changed after that period. Academic performance at the level of 2.00 or higher is required for the credit (CR) grade. Instructors are not advised of the option to be graded credit/no credit.

Certain courses are always offered with a credit/no credit format. The courses have this information in the official course descriptions and course syllabi. The policy and limitations outlined above do not apply to these courses.

Credit by Examination

There are three examination processes to earn credit for individual courses or general education requirements: Advanced placement, CLEP and departmental examinations. Check out the Admissions section in this catalog for advanced placement and CLEP examination programs. You must be admitted to a degree program to receive credit by examination. A maximum of 30 credits may be earned by examination. CLEP examinations, if available, determine whether credit shall be granted. Departments may provide their own examinations for certain courses. Inquire with the academic department offering the course to find out if a departmental examination is available. If an examination is available, the school dean's written approval to take the examination is required.

Check with the school dean for an Application for Credit by Examination and the procedures. The fee is equivalent to the CLEP exams and tuition will not be charged for credits earned. A minimum examination grade of 2.00 is required to earn credit. Course and credit earned by examination is recorded on your transcript with the grade marked as CR. Some universities may not accept this type of credit for transfer.

Transcripts

If you would like a transcripts of your Lake Superior State University records, simply present a written request to the Registrar's Office. Information such as name (at enrollment), ID number and dates of attendance is necessary. A fee may be assessed for each copy of the record.

Your official transcript will be forwarded only to those places or persons you request in writing. Student copy transcripts are issued directly to a student. Any financial or other obligations to the University must be cleared before a transcript is released.

The Privacy Act

Section 438 of the General Education Provisions Act, as amended, sets forth the requirements to be met by an educational institution to protect the privacy of students. This act is called the Family Educational Rights and Privacy Act and shall be referred to hereafter as the Act. The Act generally governs access to student educational records and the release of such records. The Act also requires that institutions of higher education must provide students access to official records directly related to the student and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or inappropriate. Educational institutions must also obtain written consent before releasing personally identifiable data about students from records to other than a specified list of exceptions. In addition, students must be notified of these rights.

In accordance with provisions of the Act and the regulations enacted by the Department of Health, Education and Welfare, Lake Superior State University has adopted the following policies and procedures:

Section 1. General Policy on Access and Disclosure

Lake Superior State University shall not as a matter of policy or practice:

1. Deny or prevent students at the University the right to inspect or review the educational records of such students, or
2. Permit the release of educational records contrary to the provisions of the Family Educational Rights and Privacy Act and the policies and procedures set forth in the following sections.

Section 2. Notification to Students

Under the provisions of the Act, the University must annually notify students of their rights and the institution policies pertaining to the Act. In addition, notice must be given to the location where the policy can be obtained as well as to inform the students of the right to file complaints with the Department of Health, Education and Welfare concerning alleged failures by the University to comply with the Act. In accordance with these requirements the annual notice regarding students' rights, the location of copies of the University's policies setting forth these rights, as well as the right to file complaints with the Family Educational Rights and Privacy Act Office, shall be published in the University Catalog. the annual letter to students will notify students of directory information.

The Registrar is the Hearing Officer for the Act and is responsible for implementing the notification requirements and distribution of copies of the policies and procedures.

Section 3. Education Records Defined

"Education records" means those records which:

1. directly relate to a student or
2. are maintained by the University or its agent.

The term does not include:

1. records of institutional, supervisory, and administrative personnel which:
   a. are in the sole possession of the maker thereof, and
   b. are not accessible or revealed to any other individual except a substitute.

A *substitute* is defined as one who performs, on a temporary basis, the duties of the individual who made the record. It does not refer to an individual who permanently succeeds the maker of the record in his or her position.

2. records of the law enforcement unit of the University (Security Department) which are:
   a. maintained apart from the University's educational records;
   b. maintained solely for law enforcement purposes; and
   c. not disclosed to individuals other than law enforcement officials of the same jurisdiction, provided that educational records maintained by the University are not disclosed to the personnel of the law enforcement unit.
3. records relating to an individual who is employed by the University which:
   a. are made and maintained in the normal course of business;
   b. relate exclusively to the individual in that individual's capacity as an employee; and
   c. are not available for use for any other purpose.
   d. This paragraph (3) does not apply to records relating to an individual in attendance at the University who is employed as a result of his or her status as a student.
4. records relating to an eligible student which are:
   a. created or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in a professional or paraprofessional capacity, or assisting in that capacity;
   b. created, maintained, or used only in connection with the provision of treatment to the student; and
   c. not disclosed to anyone other than individuals providing the treatment; provided, that the records can be personally reviewed by a physician or other appropriate paraprofessional of the student's choice. For the purpose of this definition, "treatment" does not include remedial educational activities or activities which are part of programs of instruction at the university.
5. records of the university which contain only information relating to a person after that person is no longer a student at the University. An example of these records would be information collected by the University pertaining to the accomplishments of its alumni.

Section 4. Rights to Inspect and Review Education Records

A student who is enrolled at or has attended Lake Superior State University has the right to inspect and review his/her educational records subject to the limitations set forth in Section 3 and 13.

The educational record recorded by the student will be provided within a reasonable period of time defined by availability of staff time and the records. Records will be provided no more than 45 days after the request is made.

The right to review educational records includes the right to a response from Lake Superior State University to reasonable requests for explanation and interpretations of the subject record.

Section 5. Procedures for Inspection and Review of Records

A written request for the inspection is required for review of educational records or release of records, where permitted, to third parties. See Section 10A for release of records to third parties. The request must be submitted to the appropriate officer. See Section 7 for list of officials maintaining educational records.

The written request under this section must contain:

1. a description of the information requested,
2. the date, if any, that the information is required,
3. the student's signature, and
4. the date the request is filed.

Section 6. Copies of Records: Fees for Copies

Copies of educational records will be provided under the Act under the ɔllowing conditions:

1. where failure to provide a copy would effectively prevent a student from exercising the right to inspect and review the educational record. (Examples of when this provision would be effective would be absence from the state or a confining illness.) If the student will return to the residence occupied while attending the University or be within 30 miles of campus and is not physically incapacitated during the 45-day compliance period, copies shall not be provided but the right of inspection may be exercised.

   Under this provision, a written request is required (see Section 10A) specifying the record to be disclosed and the reason that a personal inspection of the record cannot be made during the 45-day compliance period. Requests are reviewed on a case-by-case basis to determine if copies are required as opposed to personal inspection.

2. on request, under the provisions of Section 10B regarding records to officials of another educational institution in which the student is enrolled or seeks or intends to enroll.

3. on request, or with the consent of the student, under the provisions of Section 10A, regarding information released with the approval of the University to third parties.

The University shall not charge a fee for copies of records provided under the Act. There is not a charge for search, retrieval or inspection of the record. Copies of grades provided under these provisions do not carry the University seal or official signature of approval.

Section 7. Listing of Location of Education Records

The following is a list of the records considered educational in nature under the Act and their locations listed by Office, Type of Record, Responsible Official, and Location.

Admissions; Academic file, Financial; Director of Admissions; Fletcher Center

Career Advising and Placement; Academic, Personal, evaluations; Director; Brown Hall

Continuing Education; Academic; Director

Employee Relations; Work Evaluation, Employment; Director; Administration Building

Financial Aid; Financial, Academic, Personal evaluation, Employment; Director; Fletcher Center

Graduate Office; Academic, Financial; Coordinator; South Hall

Registrar; Academic (Complete and official academic record) Personal, Veterans Affairs; Registrar; Fletcher Center

Residence Halls; Personal; Housing Manager; Brady Hall

Residence Halls and Student Life; Discipline; Vice-President for Student Programs and Services; Administration Building

Student Accounts; Financial; Director Business Operation; Fletcher Center

Academic Areas, Academic; School Deans and Department Chairs.

Note: All academic records are partial records with the exception of the Office of the Registrar as noted above.

Section 8. Disclosure of Restricted Information to University Officials

Personally identifiable information from the education records of a student may be disclosed without the prior consent of the student to University officials who have a legitimate educational interest in the information. The University officials must demonstrate a need to obtain the information consistent with their official functions and the request must be consistent with normal professional practices and legal requirements.

The disclosure of personally identifiable student information under the above conditions will not be disclosed to any other party without the prior written consent of the student, except that such information may be used by the appropriate officials or agents of the University for the purpose for which the disclosure was made.

Section 9. University Officials

For the purpose of these procedures and policies, University officials are those individuals who have demonstrated a need for access to student records consistent with official University responsibilities and professional practices.

University officials include: Members of the faculty, professional, executive and administrative staff, including all Department of Security, departmental secretaries, students properly appointed as members of a hearing panel or screening committee, representatives of the State Auditor General when performing their legally required duties, legal, insurance, or collection representatives of the University when performing their university-related duties requiring student record information concerning a claim or legal matter.

Section 10. Disclosure of Personally Identifiable Information

A. Prior Consent for Disclosure Required

The University shall obtain the written consent of the student before disclosing personally identifiable information from their education records to third

parties other than directory information. Consent is not required where the disclosure is to the student.

If the University consents to the release of personally identifiable student information to third parties under this section (10A) at the written request of the student, the University will also provide the student with a copy.

The written consent required under this section (10A) must be signed and dated by the student and shall include:

1. a specification of the record to be disclosed.
2. the purpose of the disclosure.
3. the party or class of parties to whom disclosure may be made.
4. a statement granting consent for the release of the information.

B. Prior Consent for Disclosure Not Required

The University may transfer or disclose the educational records of a student, without prior written consent, on request to the officials of another educational institution in which the student is enrolled or intends to enroll.

The University, upon request, will provide the student with a copy of the transferred educational records.

Information from the educational records of a student may be disclosed, without prior written consent, if the disclosure is:

1. to Federal and State authorities as provided by the Act or other legal authority.
2. in connection with financial aid for which a student has applied or received; provided that the information may be disclosed only:
   a. to determine the eligibility for financial aid,
   b. to determine the amount of aid
   c. to determine the conditions that will be imposed regarding financial aid, or
   d. to enforce the terms or conditions of the financial aid.
3. to organizations conducting studies on behalf of educational agencies or institutions for developing, validating, or administering predictive tests, administering student aid programs; and improving instruction; provided that the studies are conducted in a manner which does not permit personal identification of students by persons other than the representatives of the organization. The information must be destroyed when it is no longer needed for the purpose for which the study was conducted.
4. to accrediting organizations in order to carry out their accrediting functions.
5. to comply with a judicial order or lawfully issued subpoena; provided that Lake Superior State University will make a reasonable effort to notify the student of the order or subpoena in advance of compliance.
6. to appropriate parties in an emergency to protect the health or safety of the student or other individuals.

Section 11. Directory Information

The Family Educational Rights and Privacy Act permits the disclosure of certain personally identifiable information from the educational record of a student if that information is designated as directory information as defined by the Act.

In order to release such information the University is required to provide public notice of the following:

1. the categories of personally identifiable information designated as directory information.
2. the right of the student to refuse to permit the designation of any or all of the categories with respect to that student.
3. the time which the student must inform the University in writing that such directory information is not to be released.

In compliance with these provisions, the University will announce its intention to release directory information each fall in the annual letter. Written requests to prohibit or restrict the use of directory information should be addressed by the last day to add classes to the Registrar's Office.

The University considers the following as directory information: name, address, telephone number, date and place of birth, major field of study, participation in officially recognized activities and sports, height and weight of members of the athletic teams, dates of attendance, degrees, honors and awards received, including scholarships, and most recent previous educational agency or institution attended by student.

In the event that this list is altered or expanded, these provisions will be amended in accordance with the Act.

Section 12. Record of Disclosures Required to be Maintained

Lake Superior State University shall for each request and disclosure of personally identifiable information from a student's education records maintain a register within that file of the education records which indicates:

1. the parties who have requested or obtained information.
2. the legitimate educational interests the parties have in obtaining the information.

A record is not required for disclosures to a student, disclosures pursuant to the student's written consent when consent is specific to the party or parties, disclosures to University officials as set forth in Section 9, or disclosures of directory information as provided in Section 11.

The record of disclosures may be inspected by: the student, University officials and assistants responsible for the custody of the records, and university officials authorized in Section 9 and persons outside the University as authorized in Section 10 for the purpose of auditing the record keeping procedures of the institution.

Section 13. Limitation on the Right to Inspect and Review Records

The University is not required to permit a student to inspect or review the following records:

1. financial records and statements of parents or any information contained therein.
2. confidential letters and statements of recommendation placed in the student record prior to January 1, 1975; provided that such letters and statements were solicited with written assurance of confidentiality or sent and retained with a documented understanding of confidentiality. The documents must be used only for the purposes specifically intended.
3. confidential letters and statements of recommendation and statements for which the student has waived the right to inspection as set forth in Section 16 and placed in a student's file after January 1, 1975 respecting:

a. admission, or

b. application for employment, or

c. receipt of an honor or honorary recognition.

4. those records which are defined not to be education records as set forth in Section 3.

If the educational record of a student contains information on more than one student, the requesting student may review or inspect or be informed of only the specified information which pertains to the student making the inquiry.

Section 14. Request to Amend Educational Records

A student who believes information in the student's educational records is inaccurate, misleading or violates the privacy or other rights of the student may request the University amend such records.

The procedures regarding amendment to a student record are:

1. submission of a written request to amend the record in question to the University office responsible for the content of the record.
2. a written request specifying the information to be amended and the basis for requesting a change in the record.
3. The written request should also suggest the recommended corrective action.
4. The University official responsible for establishing the content of the record in question within 14 calendar days will inform, in writing, the student that the record will be amended or the request is denied. If additional time is required to make a decision, the student will be advised of that period required.
5. Amendments and corrections will be completed within 14 calendar days of the date of notice to the students.
6. If the University official responsible for establishing the content of the educational record denies the request to amend the record, the written notice of this decision will advise the student of the right to a hearing.

Section 15. Right to a Hearing

The Act provides an opportunity for a hearing to challenge the content of a student's educational record to insure that the record does not contain inaccurate or misleading information or violates the privacy or other rights of the student. This procedure can not be used to challenge grades. The following procedure defines the process after the decision of denial.

Procedure of Hearing

A student desiring a hearing on a denial to amend the record by the official establishing such records must:

1. submit a written request for a hearing to the Hearing Officer and the registrar.
2. designate in the request: the student's name and identification number, date of request, specific information on the record challenged, basis for amending record, summary statement of previous action taken to amend record including names of individuals contacted and from whom communications have been received.

The Hearing Officer will, within seven calendar days of receipt of the request for hearing, notify the student of the hearing date, time and location. At least 72 hours notice prior to the hearing will be provided to involved parties.

A full and fair opportunity is available to present evidence relevant to the question of whether the record in question is inaccurate, misleading or in violation of the privacy or other rights of the students.

The student may be assisted or represented by any individual and expense including an attorney.

The Hearing Officer will render a decision on the appeal within seven calendar days of hearing's conclusion. The decision shall be in writing and based solely upon the evidence presented at the hearing. The written decision to the student shall include a summary of the evidence and reasons for the decision.

If, as a result of the hearing, the Hearing Officer rules the information is inaccurate, misleading or in violation of any of the student's rights, the record in question will be amended within seven calendar days of the decision.

If, as a result of the hearing, the Hearing Officer determines that the record should not be amended, the student shall be informed of the right to place in the education record a statement commenting upon the information and setting forth the reasons for disagreeing with the University's decision. Any explanation placed in the record of the student under this provision shall:

1. Be maintained as a part of the record as long as the record or the contested portion thereof is retained by the University, and
2. Be disclosed by the University, along with the contested record to any party receiving such record.

Section 16. Waivers

A student may waive any right under the Act. The waiver shall not be valid unless it is in writing and signed by the student. The University may not require that a student waive any right under the Act. This requirement does not preclude the University from requesting such a waiver.

An applicant for admission or a student in attendance may waive the right to inspect and review confidential letters and statements of recommendation. The waiver applies to letters or statements only if it is in writing and designated by the student and if:

1. the applicant or student is notified of the names of those providing letters or statements.
2. the documents are used only for the purpose intended.
3. the waiver is not required as a condition of admission or receipt of any service or benefit from the University.

A waiver may be revoked, but that action must be in writing and filed with the office in possession of the waiver.

ADMISSIONS

Freshmen

You may apply to Lake Superior State University any time during the final year of high school. Applications for admission are processed continuously and you will be notified as quickly as possible. A final transcript of courses completed during the final year must be submitted to the Admissions Office promptly after completion of the school year. The offer of admission will be withdrawn if a final transcript is not submitted. An official score report from American College Testing (ACT) is required. ACT scores are used for admission and placement in freshman English and mathematics courses. You should take the ACT on or before October of your senior year.

If you have graduated from high school and have not attended any college or university, have an official transcript sent directly from your high school to the Admissions Office. The transcript must include all courses taken starting with grade nine and graduation certification. ACT scores are required if you graduated from high school fewer than 26 months before the date you intend to enter the University.

The primary factors in evaluating an application for admission are ACT scores and grade point average starting with grade nine. All courses are included in the average.

The average overall high school grade point average for admitted first year students is 2.88 on a scale of 4.0. The average ACT composite score is 21. Secondary factors influencing the admission decision include the number of academic courses an applicant has completed, the trend from year to year of the applicant's grades, class rank and recommendations.

All credentials should be submitted at least three weeks before the semester of entry to the Admissions Office. However, if available spaces are filled, the application processing will end earlier.

Students denied regular admission may reapply for admission after attending another accredited college and earning at least 30 semester (45 quarter) hours of transferable credit. Evaluation for admission is then based upon the college record rather than the high school record.

American College Testing (ACT)

American and Canadian students who enroll within 26 months of high school graduation and have not attended another college must take the American College Test. The results should be forwarded to Lake Superior State University (code number 2031).

United States residents applying for academic scholarships at Lake Superior State University must take the ACT by February of their senior year and have results forwarded to LSSU before the April 1 scholarship application deadline.

Transfer students entering Lake Superior State within 26 months of high school graduation and having less than 15 semester or 23 quarter hours of credit must also take the ACT.

ACT scores are used for admissions and course placement purposes.

The ACT is offered nationally five times a year at many locations including our campus. Information bulletins and registration forms for the ACT are available at high school counseling offices or by writing American College Testing Program, P.O. Box 168, Iowa City, Iowa 52243, or by contacting the LSSU Counseling and Testing Center at 906-635-2733.

Transfer Students

If you are a transfer student, you must possess a 2.00 cumulative college grade point average (GPA) and be eligible to return to your former college(s) unless you have completed their required course work.

If you have completed fewer than 30 semester or 45 quarter hours of credit, you must send an official high school transcript or GED scores to our Admissions Office. An official transcript from each college or university where you earned or attempted credit is also required. Official transcripts may be obtained from the high school guidance office and college or university Registrar's Office. Transcripts must be mailed to the Admissions Office at LSSU directly from the issuing institution to be considered official. Transcripts sent via facsimile machine are not considered official. All transcripts become the property of Lake Superior State University and are not returnable.

If you have changed your name since attending another institution, you must indicate this when requesting transcripts from high schools or colleges. Each transcript should bear your **current** name.

If you have yet to complete 15 semester hours of college credit and have been out of high school fewer than 26 months, you must submit ACT results.

The application and all transcripts should be submitted at least 30 days before the semester of entry. However, if available spaces become filled, processing of applications will end earlier.

A transfer applicant denied admission because the college GPA is less than adequate is encouraged to reapply when, after taking additional college courses, the cumulative grade point average improves to greater than 2.0.

Freshman Admissions File

A complete application file must include the following:

A complete Application for Admission. Applications are available at the Admissions Office of Lake Superior State University or at your school guidance office.

A non-refundable $20 (U.S.) application processing fee. Your application will not be processed until the fee is paid. Check or money order (not cash) should be made payable to Lake Superior State University.

A complete, *official transcript* of your high school credits or GED score report.

A report of your scores from *American College Testing (ACT).* You should take the ACT before high school graduation. ACT registration materials are available at your guidance office.

Enter your social security number on your application. It serves as your permanent student identification number. If you do not wish to provide this number, an alternate number will be assigned.

Financial aid applications will not be processed without your social security number as directed by the agency handling the application.

If you do not have a social security number or have lost your social security card, you should contact the Social Security Administration promptly. Canadian applicants should not use their Social Insurance number. A nine-digit number will be assigned to Canadians and other foreign students.

Credit Evaluations

Official evaluation of transfer credit is made after you are accepted for admission. This evaluation is made as quickly as possible after admission. We will assist with an unofficial transcript review. Contact the Admissions Office or Registrar's Office for information.

If you plan to transfer to LSSU, you can review the course descriptions and arrive at an idea of the transfer credit you may receive. While making this informal evaluation, keep in mind transfer credit is granted for courses substantially equivalent in content, length and prerequisites to LSSU courses.

D grades are transferred only under following conditions:

1. A 2.00 or greater cumulative grade point average;
2. Upon initial application being eligible for, or being granted, unconditional admission as a full-time student based on your college or university academic records elsewhere.

Courses with D grades accepted as transfer credit may not apply to all departments. Some academic departments do not accept transferred D grades as replacements for courses required as part of the departmental major. In those cases, the departmental major courses involved must be repeated. Courses not accepted by a department may be applied as elective credit where possible.

Initial transfer credit evaluations are completed by the Admissions or Registrar's offices. Initial evaluations are subject to review and modification by the dean of the academic school offering the equivalent course. The decision on courses and transfer credit granted may be appealed by the student to the provost.

Elective Credit

If a course taken at another institution is not offered at the University, elective credit may be granted for that course. Elective credits may be applied toward degree requirements but may not be used to satisfy any specific course requirement.

Provisional Credit

Credit earned at an institution not listed in the American Council of Education's publication, *Accredited Institutions of Post-Secondary Education* is granted provisionally. Only after students complete at least 15 semester hours of credit with a cumulative grade point average of 2.00 at LSSU do provisional credits become part of your permanent record.

MACRAO Agreement

Community college students admitted to the University who have the MACRAO stamp on their transcripts are recognized as having completed the general education requirements at Lake Superior State University.

If you transfer to Lake Superior State University, all conditions of your selected majors and minors, as well as degree requirements must be satisfied.

The minimum number of credits to complete an academic major at LSSU is 30 semester hours and varies by department. The minimum number of credits required for a major at LSSU varies. Before enrolling, you should contact the academic school offering the major to determine this total.

Residency Requirement

There is no limit to the number of transfer credits allowed from other institutions. Bachelor's degree candidates must earn at least 32 of their final 40 credits and at least 50 percent of their departmental required 300/400 level credits in Lake Superior State University courses. Regional center students must earn at least 32 of their final 64 credits and at least 50 percent of their departmental required 300/400 level credits in Lake Superior State University courses. Associate degree and certificate candidates must earn 16 of their final 20 credits in LSSU courses.

Former Students

Former full-time LSSU students who interrupt enrollment for a semester or more — not including summer — must apply for readmission before the semester of reentry. The readmission application is available from the Admissions Office. There is no application fee. If you attended another college since leaving LSSU, you must submit official transcripts from the college(s) attended and meet the University's transfer student admissions policy.

Guest Students

If you are regularly enrolled at another college or university, you may be admitted to Lake Superior State University as a guest student. A guest admission is valid for one semester. This may be extended for an additional semester under extenuating circumstances. You may request the extension by submitting another guest application. If you intend to enroll for more than one semester, you must submit an application for admission as a transfer student. Guest student applications may be obtained from the LSSU Admissions Office or any Michigan college or university. You, as a guest student, assume responsibility for determining if LSSU courses apply to your program of study at the college from which you intend to graduate.

Canadian Students

If you are an Ontario student applying on the basis of high school records, you are evaluated on your ACT score and grade point average for all A and G level courses taken grades nine through the end of secondary school.

Two grading scales are used when evaluating Ontario secondary school applicants (see table next page). OAC and A-level courses are considered more demanding and their contents more appropriate preparation for university-level courses than G-level courses. B and W-level courses are never included in the grade point average.

Secondary factors influencing the admission decision are the number of academic courses completed, the trend from year to year of the applicant's grades and recommendations.

Students denied regular admission are encouraged to reapply for admission after attending another accredited university and earning at least 30 semester (45 quarter) hours of transferable credit. The evaluation for admission is then based upon the post-secondary record rather than the secondary record.

A report of ACT scores is required from all Ontario secondary school students who have not been out of secondary school for 26 months or completed at least 15 semester hours of college or university credit. ACT scores are used for admission, counseling and placement purposes.

Additional information for Ontario secondary school students is available in *Informational Handbook for Ontario Students and Guidance Counselors*, published by the Admissions Office.

If you are a Canadian applicant from a province other than Ontario, your application is evaluated based on the education system in your province.

Grading Scales for Evaluation

A-Level & OAC	G-Level	Equivalent Letter Grade
80-99	90-99	A
70-79	80-89	B
60-69	70-79	C
50-59	60-69	D
	50-59	F

Ontario Grade 13/OAC Courses

If you completed grade 13 or OAC courses before September 1990 you will receive transfer credit at the University for each course in which a final mark of at least 60 percent was earned. Transfer credit is not granted for OAC courses completed after that date. However, completion of OAC courses prepares some students to earn credit through testing. You may earn up to 30 semester hours of credit by achieving satisfactory scores on CLEP tests and departmental examinations. Contact your secondary school guidance office or the LSSU Testing Center for information about CLEP tests and departmental tests offered by the Lake Superior State University.

Foreign Students (Non-Canadian)

The University makes every effort to meet the needs of foreign students who give evidence of adequate academic preparation.

Six months to one year before the desired semester of entry, the student should write to request application materials of the director of admissions. Applicants must satisfy entrance requirements comparable to those of United States students. All credentials written in a language other than English must be accompanied by certified English translations.

No student should plan to come to LSSU with less than sufficient funds in the hope of obtaining financial assistance upon arrival. No foreign student scholarships are available, and employment opportunities for foreign students are restricted by government regulations. A notarized financial statement is required before Form I-20 (required to obtain a student visa) will be issued. This statement must include the amount of money available per year and the source(s). Inclusion of false information in the financial statement is grounds for dismissal. Beyond the financial statement, the student's sponsor or sponsoring agency must provide a letter assuming responsibility for all of the student's educational and living expenses while studying in the United States.

Applicants should not consider themselves admitted to the University until they have provided all documents required by the University and have received an official letter granting admission. Following the letter granting admission, the Certificate of Eligibility (Form I-20) is sent, as required by the US Immigration and Naturalization Service.

Foreign students are required to purchase a health and accident insurance policy for each year in residence. The policy is offered by Federal Home Life Insurance Company.

Limited English Proficiency

The Test of English as a Foreign Language (TOEFL) is not a factor in the admission decision. The TOEFL is used only to evaluate a student's English proficiency.

English language proficiency is required to take courses at the University and may be satisfied in any of three ways:

1. Scoring 550 or above on the TOEFL administered in most countries. For information regarding this test, write: TOEFL, Box 6151, Princeton, New Jersey, 08541-6151, U.S.A. or any United States Information Service Center;

Note: The Admissions Office must receive an official TOEFL score report by June 1 for students wishing to enroll fall semester. The deadline for spring semester is October 1.

2. By completing Level 109 at any ELS Language Center located in the United States. For information about ELS Centers, write: ELS Language Centers, 5761 Buckingham Parkway, Culver City, California, 90230, USA
3. By completing two years of study at a school, college or university located in an English-speaking country.

Students not meeting the University's English proficiency requirement must enroll in an English as a second language program.

Part-Time Enrollment

You may enroll as a part-time student and take up to 11 credits per semester in courses for which you have sufficient academic background. Unless high school students have special permission from their principals, part-time enrollment is limited to those whose high school class have already graduated. As a part-time student not seeking financial aid, degrees or certificates, you do not have to formally apply for admission before enrollment.

A Course Registration Form must be completed during the registration period for each semester of attendance. These forms are available through the University's Registrar or Community Services and Development offices.

If you decide to become a full-time student (12 or more credits per semester), seek financial aid or elect to seek degree/certificate status, you must complete an application for admission with a $20 non-refundable processing fee, send required official transcripts to the Admissions Office and meet all admission requirements for Lake Superior State University.

As a part-time student, you are not assigned a faculty advisor. You are encouraged to seek assistance in selecting courses from the appropriate academic schools.

Tech Prep

The national tech prep movement is supported at LSSU. As testimony of its institutional support, grades earned in applied high school science and mathematics courses contribute to the high school GPA computed for university admission. Tech prep, with its emphasis upon curricular integration between secondary and post-secondary educational institutions, helps LSSU create a broader array of educational options for our students.

We believe tech prep agreements open career doors and professional pathways for high school students in applied sciences, business, allied health and technology. Lake Superior State University has articulation agreements with area high schools to enhance applied and career educational opportunities at the post-

secondary level. In tandem with its regional secondary education partners, the University has created pathways to applied education for specified curricula in business and technology. University course credits count toward degree requirements for high school work if certain competencies are met and/or opportunities to demonstrate skill development acquired in secondary schools exist in these programs.

Check with your high school guidance counselor or a Lake State admissions officer to verify whether a specific course in your high school may apply. Additional tech prep articulations with area high schools and community colleges are being developed. Tech prep is an educational outreach effort strongly compatible with the mission of our institution. Applied skills developed in high school set the stage for postsecondary education across a range of career and professional fields available at Lake Superior State University. The Center for Career Planning and Employment Services can provide additional information for perspective students and parents.

Dual Enrollment for High School Students

Recognizing some talented high school students will benefit from university courses while in high school, selected students may take specific courses at the University.

Before registering for any class, a Dual Enrollment Request form must be completed and signed by the high school principal or counselor. The form is available from, and must be returned to, the Registrar/Scheduling Office. High school guidance counselor offices also have the form.

Students are eligible to enroll in 100- and 200-level courses only. Some courses require students to pass a placement test before enrollment. Others have one or more prerequisites. A prerequisite is a course that must first be completed before the other course can be taken.

You must be at least a junior in high school and have met relevant state examination requirements.

If you are no longer enrolled in high school and your high school class has not yet graduated, you are ineligible to enroll as a part-time student until your high school class has graduated.

Scheduling Programs

Freshman: Each summer, the University offers the Fall Class Scheduling and Parents' Program. This is a chance to meet academic advisors, schedule fall semester classes and buy books. It also is an opportunity for parents to meet University administrators and gain a better understanding of the services Lake State provides.

Transfers: If you are a transferring to LSSU, you should attend the Transfer Student Scheduling Program. You will take the mathematics placement test if needed, meet with academic advisors and schedule classes. If you cannot attend the planned sessions, you must arrange individual appointments to meet with academic advisors and complete testing and scheduling.

Orientation

Freshmen and transfer students must attend orientation before the start of classes. The program helps you get acquainted with the campus and community as well as smoothing the transition to university life. Sessions include academic and extracurricular activities, and class placement meetings with academic advisors and faculty.

Placement Testing

As an entering freshman, you must take the ACT and have the results reported to the University. These scores will be used to place the students in freshman English and mathematics courses. Students not required to provide the ACT scores will take a placement test before scheduling classes.

English: Individuals with high ACT or placement scores are invited to enroll in honors English. Students whose English ACT scores or English placement scores suggest a deficiency in English will complete the course EN091, basic English, before enrolling in EN110, freshman composition.

Reading: Students whose ACT reading or placement scores are below a standardized level (33 percent) are required to satisfactorily complete the course, SA090, Developmental Reading I, and where necessary, SA091, Developmental Reading II. Students not successfully meeting this requirement by their sophomore level (26 credits) will be limited to a 13-semester credit load, including the appropriate reading course, until satisfying this requirement.

Mathematics: One or more freshman-level mathematics courses may be waived for those whose ACT or placement test results demonstrate adequate preparation in mathematics. Students whose ACT mathematics scores indicate a deficiency will be placed in MA081, MA082, MA083 pre-algebra or MA084, MA085, MA086 introductory algebra.

Transfer students without appropriate course work in English and mathematics (see degree requirements) are also required to take placement tests.

Credit by examination

You may earn up to 30 semester hours by examination at Lake Superior State University. The University grants credit by examination to entering students who have satisfactory results from the College Entrance Examination Board's Advanced Placement Program, the College Level Examination Program (CLEP) tests, and departmental exams created by the University's individual academic departments. If you are already attending the University, you may earn credit through both CLEP and departmental exams.

Before credits by examination or transfer credits from other sources will be entered on students' permanent academic records in the Registrar's Office, you must:

1. be admitted to the University under the criteria for full-time students; and
2. enroll at Lake Superior State University.

Advanced Placement Program (AP): Advanced placement examinations are administered at high schools each May to seniors who have taken specific advanced-level courses.

Lake Superior State University grants credit in select courses for advanced placement examinations, without an essay section, passed with a score of three or higher. The grading scale is from a low of one to a high of five.

If an essay is part of an individual advanced placement test, it must be submitted to the University for evaluation. To receive credit, the essay must be satisfactory and you must have a minimum score of three on the test.

A list of courses for which the University currently grants credit is available from the Registrar's Office or the LSSU Counseling and Testing Center.

College Level Examination Program (CLEP): You may take CLEP exams at the University's Counseling and Testing Center or at other testing centers. CLEP exams are given at the University each month except December and February, and

elsewhere on scheduled dates. CLEP exam scores for students entering fall semester should be reported to the Registrar's Office no later than June 30 to be considered for advanced placement. To meet this date, if you are taking the exams elsewhere, you should be tested no later than May. If you are interested, contact the Counseling and Testing Center at Lake Superior State University for complete information about the program, test sites and test dates.

The current University policy for CLEP credit is:

1. An official copy of the CLEP score report form is required.
2. CLEP scores will be evaluated by the registrar to decide if credit will be given.

Credit for the CLEP general examination will be granted as follows:

Humanities: A maximum of eight semester hours in humanities electives toward general education requirements can be awarded. If you have previously received credit in humanities courses or courses which substitute for humanities, a maximum of eight semester hours can be earned through a combination of the CLEP general examinations and previously earned credit.

Mathematics: Three elective credits in mathematics can be awarded.

Social Science: A maximum of eight semester hours in those social science elective courses specified in the general education requirements can be awarded, provided these are courses for which credit has not already been received.

Natural Science: A maximum of eight semester hours in the natural science elective courses specified in the general education requirements can be awarded, provided these are courses for which credit has not been received. If you have earned previous college-level physical or life science credits, these must apply against their general education requirements before any CLEP natural science general examination credits will be granted to fulfill general education requirements.

CLEP general examination credit may not be used to repeat courses previously taken unless permission is granted from the academic department offering the course.

Grades for general examinations where credit is granted are recorded as credit without grade points.

Credit for CLEP general examinations is granted as shown below for each test showing a composite score at the 50th percentile, based on college sophomore norms published by the Educational Testing Service.

Credit may be earned for individual courses by passing CLEP subject examinations.

CLEP subject examinations may not be used to repeat courses previously taken unless special permission is granted from the academic department offering the course.

A listing of approved CLEP subject examinations and acceptable minimum scores may be obtained from the Registrar's Office or the University's Counseling and Testing Center.

Test	Score Equiv. Req.	Course	Credit Hours
Humanities	500	HU Electives	8
Mathematics	500	MA Electives	3
Social Science	500	SS Electives	8
Natural Science	500	NS Electies	8

Departmental Examination: Departments may provide their own examinations for certain courses. You should inquire at the academic department offering the course if such an option is available. If so, you must have the department head's written approval to take the examination. An application form for credit by examination with explanation of the procedural steps, can be found with the department head or the Registrar's Office. The fee will be equivalent to CLEP exams and you will not be charged tuition for the credits earned. An examination grade of 2.00 or better is required for credit to be earned. Course and credit earned by examination shall be recorded on the student's transcript with the grade marked as CR. Transfer credit earned by departmental examination may not be accepted by some universities.

Health Record

Everyone entering the University for the first time should complete a Health History Questionnaire. The form is mailed to admitted students.

These questionnaires are not considered for admission to the University. The information helps the University's Health Service better serve your needs.

Note: Information in the admissions section of the catalog is for information only and not part of an enrollment contract.

Residency Definitions

An exact outline of University fees and assessments can be found in the Admissions Office. These costs are determined by the Lake Superior State University Board of Trustees.

A $20 fee (United States funds) must accompany each application for admission to Lake Superior State University. The fee is nonrefundable and does not apply toward tuition or other fees.

Definition of Michigan Residency for Tuition Purposes

There are a variety of ways to establish residency for tuition purposes. You are encouraged to contact the registrar if you have any questions about your status.

The following is a brief explanation of the most common instances and situations.

* If you are at least 18 years old when you initially register and have lived in Michigan for at least six consecutive months immediately preceding the first day of classes, you qualify as a resident for tuition purposes. You must provide evidence of Michigan residency including, but not limited to, voter registration and vehicle registration.

* If you are nonresident student and enter the state to immediately begin classes, you are eligible for reclassification to resident status after six months. You must provide evidence of a change in your residency status such as voter and vehicle registration.

* If you are on active duty in the armed services and stationed in Michigan, you are eligible for resident tuition status.

* Any dependent child of an alumni parent is eligible for resident tuition status. Guidelines defining alumni status are determined by the University.

Decisions on classification and requests for reclassification as a resident student are the province of the registrar. These decisions may be appealed to the vice president of student services and programs.

Policy: Tuition/Fees

All tuition and fees are payable according to established due dates. Student delinquent in payment of a financial obligation are subject to enrollment cancellation until all amounts due the University are paid or satisfactory arrangements are made with the Business Office.

The registrar will deny registration to anyone who is delinquent in any obligation to the University. Additionally, University services will not be provided until financial obligations are met. Registration is not complete until fees are paid. A check or draft returned to the University and not honored by the bank constitutes nonpayment and results in cancellation of registration.

Auditing: The cost for auditing courses is one-half the tuition charged for credit courses plus special course fees.

Michigan residents who are 60 years of age or older may audit undergraduate courses compliments of LSSU.

There is no official record for auditing classes.

Other courses: A few courses have special fees. All registrations (including payment of fees) must be complete no later than six days after the beginning of regular instruction. Enrollment after the six-day period has passed is allowed, but not encouraged, with special permission from the registrar. A service charge is assessed for adding late.

Vehicles: If you park a motor vehicle anywhere on campus, there is an annual vehicle registration fee. The fee is refunded only under certain conditions.

Credit by exam: Credit by departmental examination is available to full-time students. If a 2.00 or better is scored, the credit is recorded on your transcript. The fee charged is equivalent to CLEP exams and there is no tuition charged for credits earned.

Withdrawal: Should you need to withdraw from the University, you must complete a Withdrawal Form to initiate a refund. The form is available from Student Services. Authorized refunds apply only to tuition and special course fees. If you are on approved University financial aid, or aid through other agencies that mandate recovery of financial assistance, refunds are in accordance with their requirements. You should check with the director of financial aid for assistance or information. Refunds are made accordingly: During the first six days 100 percent refund on withdrawals. Students withdrawing from all classes between the end of the 100 percent refund period and the first 10 percent of the semester will receive a 90 percent refund. Students withdrawing from all classes between the end of the 90 percent refund period and the 25 percent point of the semester will receive a 50 percent refund. Students withdrawing from all classes between the end of the 50 percent period and the 50 percent point of the semester will receive a 25 percent refund. No refunds are provided for dropping one or two classes.

Leaving school: For information about leaving the University see **Withdrawal**. Non-attendance of classes or checking out of campus housing does not constitute withdrawal, nor does academic dismissal. Students who leave but do not withdraw are responsible for full tuition and fees and will receive failing grades on their transcript unless a withdrawal slip is filed with the Registrar's Office.

Transcript fee: One official transcript is provided to all students, either before or after graduation. There is a $5 fee for each additional transcript.

Room and Board Applications

Housing applications: Unmarried students enrolled for 12 or more credit hours and who are within 27 calendar months of their graduation from high school at the beginning of the academic year (for this purpose, high school graduation dates are assumed to be June 1st) must reside in a University residence hall.

The exceptions are:

1. if you live with parents within a 60-mile radius, or the three-county (Luce, Chippewa, and Mackinac) service area of the University campus. An exception application, available in the Housing Office, must be approved by the housing director.
2. if you are exempted in writing by the housing director when residence hall space is filled.
3. if you face unusual financial or health problems and are exempted by the vice president for student programs and services.

Applications for housing must be made to the housing office. Students indicating interest in on-campus accommodations on the University admissions application are sent housing information. Room assignments are made upon receipt of the first room and board payment. Applications are voided if first room and board payment is not received by June 15. If application is canceled by notification to the housing director by June 15, all monies paid will be refunded. If cancellation is between June 15 and the opening of the residence halls, LSSU retains $100. Cancellation after the halls open is subject to a $300 penalty. You must be accepted for admission to live on campus.

Room and board: A variety of campus living options are available. Room and board costs are divided into seven installments. A cost sheet is available from the Admissions Office.

Housing deposit: If you are living on campus, there is a $125 deposit prior to checking into the hall. This deposit is refunded, less charges for breakage or damage, when you leave on-campus housing.

Regulations: Regulations and expectations of your conduct as a member of the LSSU community will be provided when you take residence.

Student Services

Student life is an important part of your Lake Superior State University experience. There are countless opportunities to enhance your educational experience. We encourage you to participate in student activities and to get involved with the campus. It is a great way to meet people and gain invaluable experiences and insights that will help when you graduate.

There are more than 40 different clubs and organizations at LSSU. Additionally, there is always something going on so you can be a part of the campus scene.

The LSSU Lakers compete in the Great Lakes Intercollegiate Athletic Conference (GLIAC) and the Central Collegiate Hockey Association. There are 11 intercollegiate sports at Lake State: basketball, cross country, volleyball, tennis, hockey, track and golf.

Beyond the programs and services on campus, you have the natural splendor of the Upper Peninsula and Canada. Good hunting and excellent fishing are found within a few miles of campus. Favorite winter sports are skating, hockey, snowshoeing, tobogganing, ice fishing and skiing.

Student Government

The governing arm of the LSSU student body. All students are eligible for election to Student Government membership and are encouraged to participate.

Recognized Organizations

Student Athletic: Adventurers Guild, Kuk Sool Won, Recreation Club,.

Student Professional: American Society of Mechanical Engineers, Biology Club, Criminal Justice Association, Geology Club, Institute of Electrical Electronic Engineers, LSSU Nurses Association, Lambda Sigma Beta, Legal Assistant Student Association, Math Club, Political Science Club, Psychology Club, Society of Manufacturing Engineers, Sociology Club, Teachers Education Club.

Student Religious: Anchor House, His House, Inter-Varsity Christian Fellowship, Lakers for the Savior, Newman Center.

Special Student: College Democrats, Delta Phi Epsilon, Delta Sigma Phi, Environmental Awareness Club, Inter-Greek Council, LSSU Veterans' Association, Lake State Players, Men of Brady, Native American Student Organization, Republican Club, Resident Assistants, Student Alumni Involved in Lake State (SAILS), Sigma Lambda Sigma, Students in Free Enterprise, Tau Alpha Pi, Tau Kappa Epsilon, Theta Chi Rho, Theta Xi, U.S.S. Aurora, Zeta Chi Epsilon.

Student Music: Pep Band.

Communications: The Compass (student newspaper), Lake State This Week, WLSO (student radio station), Web page at <HTTP://WWW.LAKERS.EDU>.

Room and Board

A variety of housing facilities are available. If you are enrolled at LSSU for 12 credit hours or more, there are mandatory policies that apply.

If you are unmarried and/or a nonveteran enrolled in 12 hours or more and are within 27 calendar months of your high school graduation, you must reside in a University residence hall.

High school graduation dates are assumed to be June 1 for this purpose. The exceptions are:

1. If you live with your parents within a 60-mile radius or the three-county (Chippewa, Luce and Mackinac) service area of the University. An exception application is available in the Housing Office and must be approved by the housing director.
2. If you are exempted in writing by the housing director when residence hall space is filled.
3. If you have unusual financial or health problems. Permission must be granted by the vice president for student programs and services.

The University reserves the right to assign all students within the residence halls. Housing preferences are considered according to the dates of receipt of application. Freshmen are usually accorded priority in residence hall assignments and upperclassmen hold priority in apartment assignments.

The University recognizes that exceptions to these policies may arise. Requests for permission to live off-campus will be considered by the vice president for student programs and services, who shall apply the following criteria to a request to live off campus for financial reasons:

"Financial hardship" is a situation in which the total resources of the student and family added to the total financial aid available from the University does not equal the dollar amount budgeted by the Financial Aid Office as the minimum required for on-campus residency. In such a situation, there are two alternatives: a) withdrawal from the dormitory or b) withdrawal from the University. An example is a student whose financial situation changed suddenly during the year (perhaps due to the death of a parent) and who applies for assistance after the aid program is depleted.

A number of student campus apartments in the Student Village and Townhouses are available. Married students or groups of single students desiring these accommodations should contact the housing director.

The University reserves the right to transfer students to the Townhouses or the Student Village during the year. Such transfers are normally made between semesters.

Dining

The Quarterdeck is a full-service cafeteria offering three meals a day. A complete and modern cafeteria, the 'Deck is in the Cisler Student and Conference Center.

There are several options for meal plans. These programs will be explained at orientation sessions and at the beginning of the academic year.

The Galley, a grill and snack shop, is in the basement of the Cisler Student and Conference Center.

Athletics

Lake Superior State University sponsors varsity intercollegiate athletics at the NCAA Division II level in the following sports: men's and women's basketball, cross country, tennis, men's track and golf, and women's volleyball and softball. Laker ice hockey competes at the NCAA Division I level.

The University is a member of the Great Lakes Intercollegiate Athletic Conference (GLIAC) in Division II sports, and Central Collegiate Hockey Association (CCHA) in ice hockey.

Initial approval by the NCAA Clearinghouse is required of all freshmen athletes. Contact your high school guidance counselor for that information.

If you are interested in competing as a Laker, contact the athletic department. Student-athletes must maintain a minimum grade point average, carry a required number of courses, and make satisfactory progress towards a baccalaureate degree.

Counseling/Testing

You are encouraged to take advantage of the counseling and testing services. Professional counselors are available at the Student Counseling Center to help with academic, personal or vocational problems.

Vocational testing and counseling programs are invaluable in assessing your interests and potential. This service is available to you throughout the year.

The center maintains a complete file of individual test folders, which includes all orientation test results for our students. If you wish to have your scores interpreted , simply make an appointment at the Counseling Center.

Tutoring services are also offered through the Division of General Studies. Should you need assistance in a class, student tutors are available at no charge.

For information regarding academic support services, refer to the Division of General Studies located in the Admissions section of this Catalog.

If you are interested in personal and social growth through group dynamics, stop by the counseling center.

Health Service

The Edna M. Youngs Student Health Center is staffed by nurses and a physician who offer a full range of health care services. Appointments are available for all students. The center is open during the fall and spring semesters while classes are in session.

A health care plan underwritten by Security Life Insurance Company of America is available for students who maintain three or more credit hours and attend classes on campus. Once enrolled, you will receive the policy information outlining coverage and cost. Policy information is also available at the Student Health Center. You are encouraged to review this plan and services.

All students from countries other than the United States and Canada are required to carry health insurance as a condition of enrollment. Students must furnish proof they have purchased an equivalent insurance plan that will cover their health care while in the United States. In either case, proof of insurance shall be required before registration is permitted.

Center for Career & Employment Services

Lake Superior State University offers career planning and placement service for students and alumni.

Our staff will assist you in locating suitable and desirable employment as a student and as graduate. We can also help you make career choices that suit your skills and interests.

If you are seeking part- or full-time work during the academic year or summer, we also maintain a listing of positions available for LSSU students.

Upward Bound

Upward Bound is a program for high school students who have the potential to be the first person in their family to attend college. It consists of a six-

week summer residential program, including academic classes and enrichment activities. During the school year, students receive tutoring and counseling from Upward Bound staff. About 60 students from the Eastern Upper Peninsula participate each year.

University College

Lake Superior State University has made a long-term commitment to the academic and personal success of all our students, and to providing meaningful, workplace-relevant programs and courses designed to promote the economic growth of our communities. If you are a student who is primarily interested in obtaining a job that requires education at the associate or certificate level, you wil be admitted into the University College. Similarly, if you have been away from postsecondary education for a while, or if your reading, communication and mathematics skills need some additional strengthening, you will be admitted to the University College. As a University College student, you will be assigned an academic advisor who understands your situation, and will work closely with you to ensure that you are being enrolled into courses for which you are ready. Once you have demonstrated that your mathematics, reading and compositional skills are refined (see page 60), you will be fully admitted into your chosen major field of study at the University.

Learning Center

The University College operates the Learning Center in support of all students in all levels of every discipline on campus. When you go to the Learnin Center you will find nearly 100 personal computers equipped with state-of-the-a software in virtually every subject matter. You will find fellow students just beginning at LSSU, and you will find seniors and graduate students as well, because the center offers academic support at learning levels ranging from developmental to graduate. You will also find tutors for all subjects taught at the University, at no cost to you.

Child Care Center

The campus Child Care Center provides full- or part-time care for children ages two and one-half to five years. Children of LSSU students and staff are give priority in admission; however, children from the community can be admitted as space allows. Children must be toilet trained. The center, licensed by the State o Michigan Department of Social Services, provides developmentally sound experiences for the child across a range of social, emotional, physical and cognitive dimensions. It is a place where young children can develop a strong relatio ship with both adults and children. Each morning and afternoon, under the supervision of an experienced staff, students enrolled in the child development program plan and supervise large group, art, snack and small group experience for the children. A significant portion of each day is devoted to exploratory play During exploratory play, children may move throughout the various learning areas of the center, electing to participate in any one of a wide variety of activitie and interact with learning materials. The Child Care Center is located on the southeast end of campus.

FINANCIAL AID

Rewarding the scholar and meeting the needs of those who apply for financial assistance is a high priority at Lake Superior State University. The doors of opportunity are seldom closed because of a financial condition.

You may qualify for a combination of University, state and federal programs—a financial aid package— which may include a combination of scholarship, loan, grant, and/or work assistance. Full-time undergraduates take priority in aid awards.

Carefully consider the full cost of your education, parental support, and savings, including summer employment, to determine your need for financial aid. If you possess excellent high school or community college grades, you are encouraged to apply for scholarships regardless of need. Those with need are considered for loans, grants and/or employment based on need established from the Free Application for Federal Student Aid (FAFSA).

You can obtain applications for all financial aid programs from the Student Financial Aid staff. We are available to advise you and your parents about the costs of attending the University, availability of financial aid and application procedures.

Applying: You can apply by completing the financial aid section of the admissions application; get the forms from your high school principal or counselor or write Student Financial Aid, Lake Superior State University, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783.

If you are already enrolled, you must pick up applications in the Financial Aid Office.

Applications should be submitted to the University as soon as possible. You must have the proper forms on file by April 1 to be considered for the fall semester.

Scholarship requirements: Incoming freshmen must be in the upper one-fourth of their graduating class and have a 3.25 grade point average. The recipient of any award must be a full-time student carrying 12 academic hours or more.

•

Notifications of scholarship awards are made December 1 through May. Others, April 1 through June.

•

Scholarship recipients are usually selected based on competitive examinations, scholastic records and/or financial need. The American College Test serves as the University's primary test for scholarship applicants. Test results must be on file by April 1.

You must have your parents or guardian complete a Free Application for Federal Student Aid (FAFSA) to apply for assistance.

These forms may be obtained from local high school counselors or principals. The form must be received by the processor before March 21 to assure that financial needs analysis reports are received before the financial aid application deadline of April 1.

Satisfactory Progress Policy

This is important if you receive financial aid. This policy defines the rate of academic progress and success that must be met if financial aid is to be retained. If you receive any form of financial aid, please study the following section carefully.

Financial aid regulations require satisfactory progress for students to remain eligible for financial aid. Programs affected by this policy are: Federal Pell Grant, Federal Perkins Student Loan, Federal College Work-Study, Federal Supplemental Educational Opportunity Grant, the Federal Direct Student Loan Programs, Board of Trustees Scholarships, Board of Trustees Grant, Michigan Competitive Scholarship, and all other institutional scholarships and grants.

The following is the minimum requirement for all types of financial aid. However, there are some types of aid, such as scholarships, that have more stringent requirements:

Every student must maintain a cumulative grade point average (GPA) of at least:

Credits Attempted	Cumulative GPA
0-25	1.70
26-55	1.86
56-87	1.93
88+	1.97

Application of Policy

First-year and new transfer students not meeting the GPA requirement after the first semester are placed on financial aid probation for one semester. The cumulative GPA after the probationary semester must meet the minimum GPA or the financial aid is suspended. Students enrolled for more than one semester do not have a probationary semester and must meet the schedule above.

Quantitative Standards: You are expected to complete an associate's degree in six semesters, a bachelor's degree in 12 semesters, and a master's in four semesters of full-time study. Eligibility is terminated after six semesters (associate's), 12 semesters (bachelor's degree) and four semesters (master's).

Progress in credits earned is reviewed every semester.

The following credits must be earned in relation to the number of credits enrolled at the end of the add period:

Fall/Spring Semester

Undergraduate Students		Graduate Students	
Enrolled Credits	Credits to be Earned 75%	Enrolled Credits	Credits to be Earned
12+	9	10+	7
11	8	9	6
10	7	8	6
9	6	7	5
8	6	6	4
7	6	5	4
6	4		

Failure to satisfactorily meet the standard will result in financial aid probation for the next semester. Failure to meet standards for the second consecutive semester enrolled results in suspension of financial aid.

Students enrolled for less than six credits do not have a term/semester added and those enrolled for six to 11 credits count as one-half semester.

Once financial aid is suspended, both the GPA and credit completion criteria must be met in subsequent semesters before reinstatement of aid is possible.

If completion of I grades or other record changes warrant a reinstatement, a written notice from the Registrar's Office must be presented to the Financial Aid Office by the end of the semester following suspension of aid.

Summer school attendance may be used by the student to remove grade point or credit earned deficiencies. Students must file a request for reinstatement with the Financial Aid Office following the successful completion of a summer term.

Financial Aid Suspension

No aid will be granted once a student's eligibility is suspended. This includes but is not limited to the Federal Direct Loan, Federal Perkins Student Loan, Federal Direct PLUS Loan, Federal College Work-Study, Federal Supplemental Educational Opportunity Grant, Federal Pell Grant, Michigan Competitive Scholarship, Michigan Adult Part-time Grant, Michigan Education Opportunity Grant, Michigan Work Study, Native American Tuition Waiver and Institutional Scholarships and Grants.

To remove financial aid suspension status, minimum cumulative grade point average and credit earned requirements must be met while not receiving financial aid processed through the University. Successful students then must advise the Financial Aid Office in writing that they meet the requirements for reinstatement.

Transfer Students

The requirements for transfer students are based on the number of full-time equivalent credits transferred to LSSU. For example, if you come to LSSU with 68 transfer credits, that credit must earn a GPA of 1.93 or higher and meet the quantitative credit hour minimum requirements each semester. Transfer credits are divided by 13 to determine the equivalent semesters completed for satisfactory progress purposes.

Scholarship Renewal Requirements

Besides the credits completion schedule, scholarship recipients must meet the following GPA requirements to maintain their awards:

Board of Trustees Distinguished*	Board of Trustees**
3.00 or better after two semesters of study	2.50 or better aftr two semesters of study
3.10 or better after four semesters of study	2.60 or better after four semesters of study
3.20 or better after six semesters of study	2.70 or better after six semesters of study

**Includes other institutional scholarships with a value of full tuition or higher.*
***Includes other institutional scholarships with a value of less than full tuition.*

Right to Appeal

In the event your financial aid is suspended, you have the right to appeal to the Financial Aid Committee. To obtain reinstatement, it must be demonstrated that the poor performance was due to unusual circumstances. These requests

should be in writing and addressed to the vice president for student programs and services.

Scholarships are awarded on academic excellence and may not be reinstated by appeal.

Consumer Information

As an applicant and recipient of federal financial student aid, you have certain rights and responsibilities. Knowing your rights and responsibilities puts you in a better position to make decisions about your goals and how to best achieve them.

Student Rights:

You have the right to know:

1. the available financial aid programs. They are listed in the Financial Aid section of this Catalog.
2. deadlines for submitting applications for each available financial aid program.
3. how financial aid will be distributed, how decisions on that distribution are made and the basis for these decisions. (Contact Financial Aid Office.)
4. how your financial need was determined. This includes how costs for tuition and fees, room and board, travel, books and supplies, personal and miscellaneous expenses, etc., are considered in your budget. (See Award Letter.)
5. what resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need. (Contact Financial Aid Office.)
6. how much of your financial need as determined by the institution has been met. (See Offer of Aid letter.)
7. and request an explanation of the various programs in your student aid package. If you believe you have been treated unfairly, you may request reconsideration of your award.
8. the school's refund policy. (See Costs section of this Catalog.)
9. what portion of the financial aid received must be repaid and what portion is grant aid. If the aid is a loan, you have the right to know the interest rate, the total amount that must be repaid, the payback procedure, the length of time you have to repay the loan, when repayment begins, the terms, and schedules for the repayment of student loans. (See Promissory Note and Entrance Counseling Booklet.)
10. how the school determines satisfactory progress, what happens if you are not, and how to reestablish elgibility for financial aid. (See Retaining Financial Aid in this section of the Catalog.)
11. that LSSU programs are accessible to the handicapped. Further information is available from the director of counseling.
12. how and when financial aid will be disbursed.
13. that you are entitled by law to examine records maintained in the Financial Aid Office that relate to your financial aid file.

14. the school's completion and graduation rates and crime statistics. (See Campus Security Report.)

And finally, you have the right to request:

15. the names of associations, agencies or governmental bodies that approve, accredit or license the University programs. Copies of the accreditation documents are available upon request. (See Accreditation.)

Student Responsibilities

1. You are responsible for obtaining all the forms required to apply for the type of assistance you wish to receive. You must complete all application forms accurately and submit them on time to the right place.
2. You must provide correct information. In most instances, misreporting information on financial aid application forms is a violation of law and may be considered a criminal offense that could result in indictment under the United States criminal code.
3. You must return all additional documentation, verification, corrections, and/or new information requested by either the Financial Aid Office or the agency to which you submitted your application on a timely basis.
4. You are responsible for reading and understanding all forms you are asked to sign and for keeping copies of them.
5. You must accept responsibility for all agreements you sign.
6. You must do the work agreed upon in accepting a work-study award.
7. You must be aware of and comply with deadlines for application or reapplication for aid.
8. You are responsible for reporting changes that might affect your eligibility for financial aid including:
   a. change in address or type of residency (e.g., dorm to commuter)
   b. changes in enrollment status (e.g., dropping classes or withdrawing)
   c. changes in marital status
9. If you have a loan, you are required to repay it and notify your lender of changes in name or address. You should also know the name and address of your lender.
10. Be aware of your school's refund procedures.
11. All schools must provide information to prospective students about the school's programs and performance. You should consider this information carefully before deciding to attend.

SCHOLARSHIPS AND GRANTS

Board of Trustees Distinguished Student Scholarship* — Value: $3600 a year for study in any LSSU degree curriculum. Applicants must be Michigan residents, graduates or near-graduates of properly accredited high schools, have taken the ACT test, and rank in the upper one-quarter of their high school classes. Renewable up to four years; a fifth year renewal must be requested through a petition to the Financial Aid Committee for consideration.

Board of Trustees Scholarship*: Value: up to $2000 a year for study in any LSSU degree curriculum. Applicants must be residents of Michigan, graduates or near-graduates of properly accredited high schools, have taken the ACT test, and rank in the upper one-quarter of their high school classes. Renewable up to four years; a fifth year renewal must be requested through a petition the Financial Aid Committee for consideration.

Board of Trustees Michigan and Junior and Community College Scholarships* — Value: up to full tuition per year for study in any curriculum. Awarded to residents of Michigan and those who have graduated or intend to graduate from a recognized Michigan junior or community college before enrolling at Lake Superior State University. Eligible applicants must: be earning an associate degree; enroll as at least juniors at LSSU; and have a minimum community colleg grade point average of 3.30.

Qualified regional center part-time students shall receive a scholarship of $400 a semester. The scholarship may be applied in any semester, including summer, if you are taking one or more LSSU courses at a regional center. Each scholarship recipient has three calendar years to use their six semesters of scholarship eligibility.

Board of Trustees United States and Foreign Scholarships* — Value: variable up to full tuition per year, for study in any degree curriculum offered by the University. Applicants must be from states other than Michigan or from foreign countries. Students must have a 3.5 GPA. Preference is given to students from states adjacent to Michigan.

Board of Trustees Ontario Scholarship* — Value: variable up to full tuition per year, for study in any degree curriculum offered by the University. Applicar must be residents of Ontario, and graduates of an Ontario high school. The scholarship is renewable up to four years. Students requesting a fifth year renewal must petition the Financial Aid Committee.

**All Board of Trustees Scholarships, subject to regular renewal criteria, are normall granted for eight consecutive academic semesters, excluding summer. In cases where a student must temporarily leave school due to circumstances beyond his or her control, tl Financial Aid Committee will consider petitions for scholarship reinstatement. Circumstances where a scholarship reinstatement might be granted include cases of accident or serious illness.*

Richard I. Blankenbaker Memorial Award — Value: up to full tuition. Established by the family of Richard I. Blankenbaker, a person who overcame hi impoverished youth to own a supermarket chain and devote much of his life to

public service. He also served as Director of Public Safety for Indianapolis, Indiana. Mr. Blankenbaker, an avid fisherman and outdoorsman, loved to visit the DeTour area and shared his love of the northwoods with his five children and many grandchildren. Preference is given to graduates of DeTour High School or a DeTour mailing address. Awards are based on need and are renewable.

Russell D. Bruce Recreation Department Scholarship — Value: $300. This annual scholarship honors Dr. Russell D. Bruce, the first department head (1976-1987) of recreation disciplines at LSSU. Awarded to a recreation major at the end of the spring semester of the junior year, the selection is based on scholarship (3.00 or better), leadership, and service contributions to the Recreation Club and Lake Superior State University. The recommendation of the recreation department faculty is submitted to the Financial Aid Committee for approval.

Robert W. Curtis American Society for Metals Scholarship — Value: $250 (Canadian funds) and awarded for study in engineering or engineering technology curriculum. Awarded to Canadian citizens graduated from Ontario high schools. You must be in the upper half of the graduating class and submit references from two non-relatives.

Central Savings Bank Scholarship — Value: tuition and books. Established to assist majors in finance and economics; those majoring in accounting and business administration with a minor in finance and economics are also considered. Preference is given to Eastern Upper Peninsula or the Algoma District of Ontario high school graduates with an interest in full-time employment in banking in the Eastern Upper Peninsula. A minimum 3.0 GPA after two or more semesters of study is required. A committee composed of three faculty members of the School of Business, a Central Savings Bank representative and a person from city government reviews the applications at the conclusion of spring semester each year. A resume and a transcript of grades are required.

Bud Cooper Basketball Award — Value: $600. The Ronald "Bud" Cooper Award is presented to the individual in the men's basketball program who most exemplifies the attributes of the legendary LSSU athlete, coach and athletic director. Cooper's 30+ years of service were filled with tremendous loyalty to his teammates, staff and LSSU. Additionally, he exemplified a tenacity in sport while performing solidly in the classroom. It is in honor of these attributes that LSSU annually presents this award.

Gerontological Nursing Scholarship — Value $500. Established in 1993 by MaryAnne Shannon, a certified clinical nurse specialist in gerontology and a member of the nursing faculty, to assist a junior or senior interested in the field of gerontological nursing. An award is made each year to an eligible nursing student with a demonstrated interest in serving elderly clients. Applicants must have a 3.00 GPA and have earned at least 26 LSSU credits.

Hudson, Coates, Kline Scholarship — Value: minimum $2000. Established by the Hudson Foundation in memory of prominent Sault Ste. Marie lawyers Roberts P. Hudson, Claude W. Coates and Robert C. Kline. The Hudson Foundation administers funds for educational and charitable purposes in Chippewa County, Michigan. Awarded to a graduating Sault Area High School senior accepted for admission in any undergraduate degree program. Selections are based on high school grades, ACT test scores, class rank and financial need. The award is renewable for up to four years.

Frank and Gladys Hoholik Scholarship — Value: up to full tuition. Entering freshmen, transfer students or currently enrolled students who have completed two semesters of instruction at LSSU are eligible. Applicants must demonstrate financial need. Recipients may request renewal of the scholarship for up to four years.

Michael D. Della-Moretta Memorial Scholarship — Value: variable. In honor of Michael DellaMoretta, 1977 alumnus, a navy pilot killed while serving aboard the U.S.S. Independence off Iran in 1981. He once said the happiest years of his life were at Lake Superior State University. The award is based on academic achievement and financial need. Preference is given to Upper Peninsula residents with an interest in biological science or a lab science major including math and computer science.

Dr. Arthur E. Duwe Memorial Scholarship —Established by family and friends in memory of Dr. Duwe, Professor of Biology from 1968-1991. This award is made to a senior medical technology or biology, fisheries and wildlife or environmental science student for his/her year of internship. Full-time enrollmen with a cumulative 3.0 or higher grade point average is required.

One recipient is selected annually by faculty of the biology and chemistry department. Those interested should apply for the scholarship during the spring semester of their junior year. The award commences fall semester of th senior year.

Rosa L. Grout Scholarship — Value: variable. The fund was established by Rosa Grout, a longtime teacher of mathematics in the Sault Area Schools and a founder of the Chippewa County Employees Credit Union. Engineering technol ogy, mathematics, computer and mathematical science or a lab science majors. Selection is based on high school grade point average, ACT test and high school class rank.

Bill Ayers Memorial Scholarship — Value: variable. Bill Ayers was the girl basketball coach at Sault High School. Recipient must be a Sault High graduate and accepted for admission to LSSU. Qualified applicants are recommended by the High School Scholarship Committee to the University Financial Aid Committee.

Earl and Minnie Walker Endowment Scholarship Fund — Value: up to fu tuition. Established in memory of Earl and Minnie Walker, long time residents and community leaders in Strongs, Michigan. The Walkers valued education, ar encouraged their children and others to pursue a college education. Awards are based on academic achievement and financial need.

Society of American Military Engineers Scholarship — Value: $500 for fi time students enrolled in engineering or engineering technology curricula. Application is to the dean of the School of Engineering Technology and Math- ematics. Selection is by the Financial Aid Committee upon recommendation of t SAME Executive Committee.

Bowating Business and Professional Women's Scholarsip — Value: variable. Those who have returned to college after at least a two-year interrupti and have established a college cumulative 3.0 grade point average in two seme ters are eligible for this award. The scholarship is restricted to applicants from Chippewa, Mackinac or Luce counties.

Edward C. and Hazel L. Stephenson Foundation Scholarship — Value: variable up to $500. The scholarship is generally awarded during spring semester to a student who has been enrolled at least two semesters at the University.

Tendercare Endowment — Value: $1,000. Awarded annually to students in the health care field. A minimum GPA of 3.00 and completion of 26 or more LSSU credit hours is required. The scholarship is renewable and available to transfer students. Financial need is a consideration but not a requirement.

The endowment was established in 1994 with $25,000 bequest by a client in an Indiana-affiliated facility to Tendercare, Inc. The funds were, in turn, donated to the LSSU.

Philip A. Hart Memorial Scholarship — These scholarships are for students whose ideals and goals reflect those of the late senator. Awards range from full tuition to the entire cost of education less other gift aid. Scholarships are awarded annually in April and are renewable for up to four years. Seniors of Michigan high schools or graduates of Michigan community colleges planning to attend Lake Superior State University for the first time are eligible. Applicants must have a 3.0 cumulative grade point average in their current studies.

Successful applicants will have demonstrated interests in public service reflected through leadership roles and volunteer activities in school, community and church. Candidates must submit a formal essay detailing their values, goals and public service experience. Essays should attempt to answer the question: "How have my activities thus far related to the goals and the ideals of Senator Hart?"

Candidates must also submit two letters of recommendation from individuals acquainted with their leadership and/or public service activities. Deadline for receipt of all application materials is April 1.

Tempie Dubow Memorial Scholarship — Value: variable. Established in memory of Tempie Dubow, a 1973 nursing graduate and cheerleader. Recipient is recommended by the Nursing Department.

449th Bombardment Wing Scholarship — Value: variable. An endowment fund was established by officers, men and civilian employees of the 449th Bombardment Wing of Kincheloe Air Force Base as in appreciation and friendship for the tri-county area. Applicants must be entering freshmen who have graduated from high schools in Chippewa, Luce or Mackinac counties. High school grade point averages, rank in class and ACT test scores are prime criteria in the selection.

Fletcher Scholarship Fund — Value: up to $3,600 a year. A native of Sault Ste. Marie, H. Thayer Fletcher founded the first endowment scholarship fund at LSSU. Remembering his talented high school classmates who, during the depths of the Depression could not attend college, Mr. Fletcher was dedicated to helping worthy young people. Upon his death, he bequeathed nearly half a million dollars to the University for this purpose.

Applicants must be Michigan or Canadian residents, demonstrate financial need and have attained superior grades in high school, in previous colleges or at LSSU. Eligible applicants may be entering freshmen, transfer students or students who have attended Lake Superior State University three semesters as full-time students. The scholarship is renewable up to four years. Apply to the Financial Aid Committee.

Guy Adda Memorial Endowed Scholarship — Value: variable. Established by family and friends of Guy Adda, a 1973 psychology and law enforcement graduate. Preference is to applicants from southeastern lower Michigan with financial need. Selection is based on academic grade point average, ACT test scores and high school class rank.

First National Bank of St. Ignace Endowed Scholarship — Established by the First National Bank of St. Ignace to assist a St. Ignace area student attending the University. Preference is to graduates of LaSalle High School of St. Ignace and selection is based on grade point average, ACT score and high school class rank.

Kurt and Mary E. Brammer Scholarship — Value: full tuition. Established in 1981 with a gift of 10,000 shares of L. E. Myers Corporation stock. Kurt and Mary are summer residents of Neebish Island, childhood home of Mrs. Brammer. Qualified applicants include high school seniors, transfer students, or LSSU students who apply after two semesters of full-time attendance. Awards to high school seniors are based on ACT score, grade point average and class rank. Awards to college transfer and currently enrolled students are based on college grade point average.

George and Virginia Lahodny Endowment Scholarship Fund — Value: minimum of $500 and up to full tuition depending on the annual earnings of the fund. Qualified applicants include entering freshmen, community college graduates, or currently enrolled students who have completed three full-time semesters at LSSU. The scholarships are awarded on the following criteria: entering freshmen are judged on their high school grade point average, ACT test score and rank in class; community college graduates considered on their community college GPA; current LSSU students considered on their grade point average. This is a merit award. Scholarships are renewable based on the student filing a renewal financial aid application annually and the same academic grade point average as required for a Board of Trustees Scholarship.

Sault/Loretto High School Memorial Scholarship — Value: variable. The scholarship was established in 1990 by a group of Sault High/Loretto graduates to assist Sault High graduates attending Lake Superior State University. Applicants must be graduates of Sault High and enrolled full-time. Selection is based on grade point average, ACT test score and high school class rank. If a graduating senior is not available for the scholarship, it may be awarded to a current LSSU student who is a Sault High graduate.

Geology Club Scholarship — Value: variable. Created by the Geology Club, the scholarship is presented to one or more students majoring in geology. During the early weeks of spring semester a student (or students) is selected to receive the award for spring semester of the same year. Recipients must be juniors or seniors who have attended Lake Superior State University for at least two semesters, are active members of the Geology Club, and have an exceptionally good academic record in geology. Candidates are selected by the geology faculty.

John Kalesky Memorial Endowed Scholarship Fund — Value: $900. Established by his family in memory of John Kalesky, a 1985 geology alumnus, and awarded to a high school senior admitted into the geology program. Preference is given to students with need. The award is selected based on high school grades, ACT test scores and class rank. The award may be granted to a current

geology student after one year (26 credits) of study at the University. Eligible students must have a GPA of 3.0 or higher. The award is renewable subject to meeting the Board of Trustees scholarship renewal criteria and filing a renewal financial aid application.

Ernest Kemp Endowed Scholarship Fund — Value: at least $600. Professor Kemp came to the Sault as an original instructor of the Sault Branch of Michigan Technological University in 1946. He retired in 1980 and was awarded Dean Emeritus status. Awarded to a high school senior admitted in the geology program. The recipient is selected based on high school grades, ACT test scores and class rank. If an eligible high school senior is not available, the scholarship may be awarded to a geology major who has completed 26 or more credits at the University and has a 3.0 or higher University GPA. The award is renewable subject to meeting the Board of Trustees scholarship renewal criteria and filing a renewal financial aid application.

Gerald M. Samson Department of Mathematics Scholarship —Value: variable. Named for a longtime faculty member, the scholarship provides a scholarship to a deserving computer and mathematical science major. During the early weeks of spring semester, a student (or students) will be selected to receive the award for use in spring semester of the same year. The class level is open but the student must be majoring in computer and mathematical sciences. The recipient(s) is nominated and chosen by the mathematics faculty.

Criminal Justice Scholarship — Value: $500. This fund assists criminal justice juniors or seniors and was established by adjunct faculty member Patrick Shannon in 1984. Application is need based and is awarded for the fall semester. Nominations from the criminal justice faculty are confirmed by the Financial Aid Committee.

Sam M. Cohodas Endowed Scholarship Fund — Value: variable. Sam Cohodas was a longtime Upper Peninsula businessman, philanthropist and recipient of LSSU's 1987 Distinguished Citizen Award. Two scholarships are awarded annually to Michigan Upper Peninsula high school seniors based on high school grades, ACT test scores, class rank, character, leadership and financial need.

Alana Eitrem Memorial Endowment Fund Award — Value: variable. This award was established by family and friends in the memory of Alana Eitrem, a nursing student from 1984-1986. Eligible students must be admitted to the nursing program, be a graduate of a Chippewa County high school and show financial need. The award is renewable if the recipient maintains a 2.00 grade point average and continues as an eligible nursing student.

LSSU Foundation Endowed Scholarship Fund — Value: variable. This fund was established in 1986 to help academically qualified students with financial need. Available to high school seniors, community college graduates, and LSSU students enrolled full-time who have earned 26 or more LSSU credits. The selection is based on GPA, ACT scores and class rank (upperclass students on GPA only).

Raymond Chelberg Outstanding Science Athlete Scholarship Fund — Value: variable. In memory of Professor Raymond Chelberg, longtime head of the

University chemistry program. The award is presented to outstanding science/athlete students at the end of their junior year. Selection is made by the athletic department with academic department heads. Recipients must have at least 3.0 GPA, have demonstrated leadership abilities, major in a natural science and excel in at least one varsity sport.

Chippewa-Mackinac Area Retired School Personnel Scholarship — Value: $500. For graduates or near graduates of area high schools or currently enrolled university students. Applicants must have graduated from a Chippewa or Mackinac County secondary school, and rank in the upper one-third of their high school graduating class. Current LSSU applicants must have completed 26 hours of academic credit with a minimum 3.00 cumulative grade point average. Applicants must also have financial need and be accepted for admission. Selections are made in the spring for the following academic year. Recipients may reapply annually.

Donald Hastings Memorial Scholarship — Value: variable. Established in memory of Donald W. Hastings, assistant professor of psychology from 1971-1973, the scholarship is awarded to a junior psychology major for the senior year. If a qualified junior is not available, the award may be made to a senior. Recipients must be enrolled full time with a cumulative 3.0 or higher GPA. Interested applicants apply for the scholarship during the spring semester of their junior year and the award commences fall semester of the senior year. The recommendation of the psychology faculty is submitted to the Financial Aid Committee for approval.

Leslie D. Opolka Memorial Scholarship — Value: variable. Leslie was a 1992 business administration graduate employed in the Physical Plant Department. The fund was established by family, friends and co-workers at LSSU. Applicants must be graduates of Detour High School, admitted to any program of study and have financial need. The award may be granted to a current student after one year of study (26 credits), if a high school senior is not eligible. The award is renewable if the recipient meets the Board of Trustees scholarship renewal criteria.

Franklin F. Otis Award — Established in memory of Franklin F. Otis, professor of mathematics from 1948-1978. This award recognizes the hard-working sophomore or higher student enrolled in mathematics or computer and mathematical science programs. The applicant must have earned at least 26 LSSU credits, have a minimum 2.5 GPA overall and at least a 3.0 GPA in computer science and mathematics courses. A letter of application should be sent to the designated mathematics faculty member the first week of October for consideration. The applicant must be a resident of Michigan or Wisconsin at the time of application.

Parker True Value Hardware Scholarship — Value: variable. Established by Warren and Beverley Parker, this award is for full-time students who have earned at least 26 credits in a business administration major. Applicants must have graduated from a high school in Chippewa, Mackinac or Luce Counties and demonstrated financial need.

The Frank and Marion Pingatore Memorial Scholarship Fund — Value: variable. Established by a bequest from the trust of Marion Pingatore. The

Pingatores were longtime residents of Sault Ste. Marie, Michigan. They operated Aunt Marion's Food Market and Aunt Marion's Norgetown Laundry and Dry Cleaning Business. Frank served as city commissioner and mayor in the mid to late 1970s. The scholarship is need-based and presented to graduates of Sault Area High School enrolled as full-time students in any LSSU associate or baccalaureate program. Selection is based on the student's GPA, ACT test score and high school class rank, with a minimum grade point average of 3.0.

Milton Scherer Memorial Endowed Scholarship — Value: variable. This scholarship is presented in memory of Milton Scherer, assistant professor of history and geography from 1948 to 1965. The scholarship is awarded annually to sophomores majoring in history with minors in geography. Recipients must have a cumulative 3.0 GPA. Qualified applicants are recommended by the School of Arts, Letters and Social Sciences.

SMO Foundation Endowed Scholarship — Value: variable. Established by Stanley Tomcyek family, native and longtime residents of Sault Ste. Marie, to assist LSSU sophomores majoring in pre-medicine or pre-pharmacy. Recipients must be residents of Chippewa, Mackinac or Luce Counties, have 3.50 college GPA and have financial need.

Christopher W. Reinke Endowment Award — Value: variable. The endowment was established by family and friends in memory of Chris Reinke, a natural tesources technology (NRT) student, 1986-87. The award helps a natural resources technology student with a grade point average between 2.0-3.0 who has a sincere interest and dedication in the NRT field. Preference is given to those with financial need. Selection is by the natural resources technology faculty for use during the sophomore year only.

Eugene L. Welch Endowment Scholarship — Value: tuition and books. This fund was established by Barbara Welch Buchanan, in memory of the longtime Sault businessman who highly valued education for his family and encouraged others to pursue a college education. Applicants must be accepted for admission in any undergraduate program, be a resident of Michigan and show financial need. The award is renewable up to four years if the recipient maintains the grades required for a distinguished scholarship.

Lottie, Florence and Dorothy Weinrich Memorial Scholarship Fund — Value: $1000. Established in memory of Lottie, Florence and Dorothy Weinrich, longtime residents of Sault Ste. Marie. These awards are based on academic achievement. The scholarship is renewable.

C.G. "Sandy" Sanderson Endowed Scholarship — Value: variable. C.G. "Sandy" Sanderson was a local aviator-businessman and longtime Sault Ste. Marie resident. He had a high regard for education as exemplified in a quote in a letter to his grandson, Terry, upon learning he was returning to LSSU to complete his education. "Education cannot be taken from you nor can it be transferred, there is no reasonable way to measure its value. It will enhance your entire life."

Recipients are graduates of an Upper Peninsula high school and selection based on grade point average, ACT test score and class rank. Recipients may be enrolled in any course of study.

Chase S. and Stella B. Osborn Endowed Scholarship Fund — Value: variable. Established through a bequest of Stella B. Osborn, wife of the former governor of Michigan, Chase S. Osborn. Award is based on GPA, ACT test, class rank and financial need.

Dr. Kenneth J. Shouldice Memorial Scholarship — Value: variable. Named in honor of the first president of Lake Superior State University (1965-82), this award is to deserving students enrolled in any degree program, taking at least a half-time course load at the main campus or regional location. Incoming freshmen must have a 3.0 or higher high school grade point average. Currently enrolled students must have a college grade point average of 3.0 or higher. Current LSSU students must be enrolled at least half-time and a minimum of 26 LSSU credits. The scholarship is merit based.

LSSU Scholarship in the Fine and Performing Arts — Value: variable. The scholarship, established with an anonymous donation of $20,000, helps students enrolled in the University's Fine and Performing Arts Program. Eligible recipients may be incoming freshmen or current full-time students who have earned 26 or more LSSU credits and have a 3.0 or better academic grade point average. The award is merit-based and is renewable.

Memorials

Substantial funds have been contributed to the University's endowment Scholarship Fund in memory of the following individuals:

Milton Bays
David Blair
Beverly Brennen Booth
Matthew Howie
Maurice Hunt
Donald Lenick
Howard and Hollis MacDonald
Arvid Norlin
Mary Lou Peacock
Linda Pike
Orlando Pingatore
Dr. Thomas Robinson Sr.
Minnie Etta Shobbrook
Bernard M. Smith
Lynn Steppig
E.J. "Shine" Sundstrom
Viggo J. Thomsen
Christopher Yanni
Prof. Stephen P. Youngs

Michigan Competitive Scholarship

These State scholarships range from $100 to $1,200 at Lake Superior State University. Applicants must:

1. have been continuous residents of Michigan for a 12-month period before July 1 of the award year.
2. be a high school graduate.
3. participate in the National American College Test (ACT) and attain a qualifying score.
4. not have engaged in any university, normal school, junior college or other advanced training following graduation from high school and prior to the qualifying examination.

5. have complied with all other provisions of the law and rules and regulations adopted by the authority.
6. demonstrate financial need. Good academic standing with at least a 2.00 grade point average and meeting satisfactory progress requirements is required to renew a scholarship. High school seniors must obtain ACT test registration materials from their high school counselor and mail them before the deadline for the October ACT examination.

Federal Pell Grants

For most, federal student aid begins with PELL Grants that provide a foundation of financial assistance to which other forms of aid may be added. A distinguishing feature of this program is a central concept of entitlement, guaranteeing those who demonstrate needs will receive a grant based on that need and on the cost of education at the post-secondary school they choose to attend.

PELL Grants vary according to the year. Check with the Financial Aid Office for details.

To be eligible for a PELL Grant, students must:

1. be determined to have financial need.
2. be undergraduates accepted for admission and enrolled in eligible programs.
3. be U.S. citizens or permanent residents.
4. not be in default on a Stafford or Perkins Student Loan, and not owe a refund for a Pell or S.E.O.G.;

Although awards are made through the University, the U.S. Department of Education determines eligibility. The University Financial Aid Office uses a standard procedure established by the Department of Education to calculate the award.

To apply, complete the Free Application for Federal Student Aid (FAFSA). Forms are available at high schools, colleges and financial aid offices.

The Board of Trustees Grant Program provides assistance to incoming and currently enrolled students based on financial need. Preference is to those whose financial need is greater than one-half the cost of education. Recipients must be Michigan residents and enrolled full time.

Federal Supplemental Educational Opportunity Grants

The Higher Education Act of 1965 created this program of financial assistance to help college students with the greatest financial need. Supplemental Educational Opportunity Grants may be used to meet all or part of student financial need (up to $4000 in any one year), with the exact amount being proportional to the support reasonably expected from their families.

Financial need is the primary consideration in the selection of grant recipients. Priority is given to Pell Grant recipients. Academically, it is only necessary to gain admission to the University to be eligible for the grant. Recipients are selected from those applying for all forms of financial aid.

Recipients of this award must reapply each year and maintain the regular satisfactory progress standards to be considered for a renewal award.

Michigan Adult Part-time Grant: Established in 1986 to aid independent students with financial need who are enrolled for three to 11 credit hours, self-supporting, out of high school at least two years, Michigan residents for prior 12 months, U.S. citizens and making satisfactory academic progress. Maximum grant is $600 a year and limited to two years of study.

Michigan Educational Opportunity Grant: Established in 1986, this grant provides up to $1000 a year to Michigan residents enrolled at least half time. You must be a Michigan resident for the past 12 months, make satisfactory academic progress and demonstrate financial need.

Tuition Incentive Program (TIP): The TIP Program pays tuition and fees for students of lower-income families. Eligible students must: be Michigan residents; be graduates from high school or have obtained a GED after May 1, 1988; before reaching age 20, be accepted for admission into an associate degree program; and file a TIP application. Applications are available from the Michigan Department of Social Services, high school guidance and college financial aid offices. Applications must be filed before high school graduation.

LOANS

Federal Perkins Loans (National Direct Student Loans)

The Perkins Student Loan program is for students enrolled at least half time in an eligible program who need a loan to meet educational expenses.

Students may borrow up to $3,000 for each year of undergraduate study. The maximum debt for undergraduates is $15,000. The amount awarded by the University is generally less due to limited funds.

Repayment begins nine months after students graduate or leave school for other reasons. There is a 10-year pay back period, at five percent interest on the unpaid balance of the loan principal.

The amount of the repayment depends on the size of the debt and ability to pay. In most cases, students must pay at least $40 a month. Any agreement for a lesser amount must be attributable to extraordinary circumstances such as prolonged unemployment.

Default: If a student defaults on a Perkins Loan and the school is unable to collect, the federal government will take action to recover the loan. In cases of bankruptcy, total or permanent disability or death, loan obligations are canceled.

Deferment of payment is available if:

1. you are enrolled and attending as at least a half time student at an institution of higher education.
2. for any period not to exceed three (3) years
   A. unable to find full-time employment.
   B. experiencing economic hardship.

Cancellation: Loans may be canceled for:

1. certain types of teaching,
2. full-time qualified provider of early intervention services for the disabled,
3. full-time nurse or medical technician,

4. full-time law enforcement or corrections officer,
5. death or disability of the student or
6. full-time staff of Head Start Program.

Federal Direct Student Loan

To qualify for a loan, you must be a United States citizen. You may borrow up to $2,625 the first year of undergraduate study, $3,500 as a sophomore and $5,500 as a junior or senior. The maximum amount is $23,000. Eligibility is based on financial need for subsidized loans.

If you do not have financial need, the Direct Loan Program offers unsubsidized loans and the interest is paid by the student.

Subsidized loans are eligible for federal interest benefits. The federal government pays interest until six months after graduation or you cease to be at a least half-time student.

Once enrolled at Lake Superior State University, you must meet the satisfactory progress standards to be eligible for additional loans.

Repayment of principal and interest begins six months after graduation or if you attend school less than half-time. Interest rates are variable, not to exceed 8.25 percent.

Federal Direct Parent (PLUS) Loan

Parents may borrow up to the difference between the cost of education and other financial aid for which the student is eligible. The interest rate varies and is based on 91-day treasury bill rates.

A four percent origination fee is deducted from each of two disbursements made in a school year. Repayment begins within 60 days of disbursements. Applications are available at the Financial Aid Office. Maximum interest is nine percent.

Nursing Student Loan

The Nursing Education Loan Program provides loans of up to $2500 a year for bachelor's degree or completion nursing programs. You must be United States citizens, enrolled more than half-time and demonstrate financial need greater than one-half the cost of education to be eligible. Apply at the Financial Aid Office.

Mi-Loan Program

The Michigan Higher Education Student Loan Authority of the Michigan Department of Education established the MI-Loan Program to assist students and their families in meeting the cost of post-secondary education.

Students must be certified as eligible by the school, U.S. citizens, not in default on any education loans and pass all credit standards. Students who cannot pass the credit standards must have a qualified cosigner.

The minimum loan is $500 and maximum is $10,000 per academic year. Interest is fixed or variable. Repayment is a minimum of $50 a month and must be repaid in 15 years. Applications are available at the Financial Aid Office or by calling the Student Loan Authority at 1-800-877-5659.

Canada Student Loans

This plan makes bank loans available to Canadian students who need financial help to enable full-time studies directed toward a degree at an institution of higher education.

To qualify for a loan, the student must:

1. be a Canadian citizen or have landed immigrant status;
2. be a resident of a province that participates in the plan;
3. have attained a satisfactory scholastic standard;
4. be enrolled, or qualified to enroll in a post-secondary course of studies;
5. be a full-time student, and
6. send a confirmation of program information form and a copy of social insurance number card with the application.

The loans are interest free as long as you are a full-time student and until six months after graduation or termination of full-time studies. After the interest-free period has expired, you are responsible for the repayment of principal and the interest on the outstanding balance at a loan rate in effect when the loan was taken.

Application forms are available from Student Awards Branch, Ministry of Education and Training, P. O. Box 189 Red River Road, 4th Floor, Thunder Bay, Ontario P7B 6G9. Telephone 1-800-645-3013.

Short-Term Loan Funds

Bean Loan Fund
Valma L. Curtis Memorial Fund
Robert P. and Ella B. Hudson Foundation, Inc. Loan Fund
Don Lenick Memorial Loan Fund
Shirley Light Memorial Loan Fund
Steinman Loan Fund.

Several short-term loan funds are available. These funds provide cash with a small loan to meet immediate, temporary financial problems.

Generally, loans up to $200 are allowed for no longer than 30 days during the school year when classes are in session. These loans are signature loans and do not bear interest if repaid when due. A minimum $5 service charge or one percent, whichever is greater, is assessed on all loans. Generally, loans must be repaid before the end of the semester in which they are issued.

Delinquent loans are subject to a 10 percent late penalty charge and students are not eligible to borrow for 12 months from the date the loan is repaid. Loan applications are obtained through the Student Financial Aid Office. Loans over $200 require a bank or institutional credit reference and a cosigner (may not be another student) 18 years of age or older. If repaid late, a 10 percent late charge is assessed.

Campus Employement

How to Apply

If you are interested in working on campus, you may apply at the Office of Employee Relations. There are more than 300 positions open on campus for full-time students.

Every effort is made to employ students in areas of study providing a "learn while you earn" situation. On-campus jobs include work in laboratories, libraries, maintenance, offices, switchboard and food service areas. You can earn approximately $1,300 during the school year and up to $3,000 in the summer with an on-campus job.

It is recommended that students on academic probation do not continue or seek employment until probationary status has been corrected.

Federal College Work Study

If you can demonstrate financial need and need a job to help pay University expenses, you may be eligible for employment by Lake Superior State University under the federally supported Work-Study Program.

20-hour load: Students may work up to 20 hours weekly while attending classes more than half-time. During the summer or other vacation periods when they do not have classes, students may work full-time (40 hours per week) under this program. In three months of summer employment under the Work-Study Program, an eligible student earns approximately $3,000.

The basic starting rate tends to be commensurate with current minimum wage. Higher rates are paid for highly specialized work. Preference is to students who have high need.

Michigan Work Study

Undergraduates who have been Michigan residents for at least 12 months, have financial need, are enrolled at least halftime and making satisfactory academic progress may be eligible for employment under the Michigan work-study program.

Vocational Rehabilitation

The Michigan Jobs Commission Rehabilitation Services provides services and financial assistance to persons with any disability that has interfered with, or may interfere with, the individual's job performance. Students must apply for financial aid and have need.

Further information may be obtained by contacting your nearest Michigan Rehabilitation Services Office of Michigan Jobs Commission.

Programs for Native Americans

Bureau of Indian Affairs Scholarship Grant: Members or those eligible for membership in a federally recognized Indian tribe showing need, may apply for Bureau of Indian Affairs Scholarship Grants by writing their tribal education office for an application. It is possible to receive up to full university expenses per year in scholarship grants if financial need is demonstrated. All applicants must complete a Free Application for Federal Student Aid (FAFSA).

Bureau of Indian Affairs Vocational Training Assistance: Indian students enrolled in certificate or associate degree programs are eligible for assistance to pay for tuition, books and living expenses. You must be a member or eligible for membership in a federally recognized Indian tribe.

Awards are based on financial need. Applicants must complete a Free Application for Federal Student Aid (FAFSA). Applications may be obtained by writing the Tribal Education Office.

Native American Tuition Waiver — Value: full tuition for full- or part-time North American Indian students providing evidence of being one-quarter blood Native American Indian and Michigan residents.

Applicants must have their tribal chairperson or tribal certification officer submit a certification of one-quarter blood quantum to the Michigan Commission on Indian Affairs, 300 East Michigan Avenue, P.O. Box 30026, Lansing, Michigan 48909, along with a letter indicating the college the student plans to attend. The Michigan Commission on Indian Affairs will attach a certification letter to the tribal certification and forward it to the Financial Aid Office at the University. The University will then issue a Native American Tuition Waiver for the tuition for eligible students each semester. Students must be accepted for admission into an eligible program and meet the satisfactory progress policy of the University.

Veterans

Veterans, Children of Deceased, or Totally Disabled Veterans

Michigan Public Act 245: Sons or daughters of a veteran who died of service-connected causes, may be eligible for benefits under the Public Act 245. The benefits waive tuition until the student reaches 23 years of age. Those who believe they are eligible should request an application from the Michigan Veterans' Trust Fund, 1225 Grand Ave., Lansing, Michigan 48913. Recipients may be full- or part-time students. Any students who believe they are eligible for educational assistance through any veterans' law should contact their area Veterans' office for information and applications. Veterans must be admitted into a degree program approved by the State Approving Agency.

Veterans' Standards of Progress

Grade point average requirements are the same as the University academic probation and dismissal policy. If your grade point average falls into the dis-

missal category, the Registrar's Office will notify the Veterans Administration of your dismissal and benefits terminated.

Withdrawal or Dropping a Class

You are required to notify the Registrar's Office if you drop a class or withdraw completely from the University.

Credit for Previous Training: You must obtain a degree audit from your department head and submit it to the Registrar's Office. The Registrar's Office will indicate the credit granted for previous training and notify you. The Registrar's Office will keep the audit updated. You should avoid classes not required for your degree. However, you should make sure you have the required electives.

Graduate Program: Veterans and other eligible persons enrolled in any graduate program must meet standards of progress. A maximum of six semester credits of C grades in 600-level course are allowed in your overall program. Those failing to maintain a 3.0 (4.0 basis) average are referred to the Master of Business Administration Standards and Policy Committee to determine whether they should be allowed to continue in the program. Veterans receiving D grades in 500 or 600-level courses are referred to Master of Business Administration Standards and Policy Committee immediately. You may withdraw from a course before 50 percent of the class has been finished. Veterans dismissed from the master of business administration (MBA) program may petition the MBA Standards and Policy Committee for reconsideration. At the time of dismissal, the Veterans Administration will be notified of the unsatisfactory progress.

DEGREE REQUIREMENTS

Lake Superior State University offers bachelor (also called baccalaureate) degrees, associate degrees and certificates. These degrees are offered in a wide variety of academic programs. Each academic department has a set of specific courses and other requirements for each of its degree programs. These are stated later in this Catalog in the various departmental sections. However, some requirements for bachelor's degrees are of a general nature, applying to all such degrees. These are discussed below.

Bachelor's Degrees: A minimum of 124 credits is required for a bachelor's degree. Some programs require more than this number of credits. Requirements are of five categories: general education, bachelor of arts or bachelor of science requirements, departmental requirements, competency requirements in mathematics and writing, and residency.

Associate's Degrees and Certificates: See the appropriate school section of this Catalog for the specific requirements. A minimum of 62 credits is required for an associate degree. At least three credits each of English and speech, plus six other general education credits are required. Competency in mathematics and writing is required for an associate degree. There is also a residency requirement.

Minors: Academic minor programs are also offered in a wide variety of disciplines. A minimum of 20 credits is required for a minor, and some require more. See school sections for specific minor program requirements. A minimum of six credits from LSSU is required.

General Education (33 credits)

General education consists of courses required regardless of specialized areas of study. The purpose of general education is to develop skills and knowledge useful for all students, regardless of their career choices. Requirements in English and speech enhance fundamental skills of writing and speaking. Requirements in humanities, natural sciences and social sciences broaden intellectual perspective and familiarize students with fundamental fields of human knowledge. *The general education curriculum at the University is being revised as this catalog is being printed. Be certain to consult your advisor regarding your general education program.*

English (6 credits) - EN110 and EN205, EN210 or EN215

Speech (3) - SD101.

Humanities (8) - any HU course or courses, or any of the courses AT250, 251; FR251; GN241; MU110, 111, 112, 113, 140, 141, 160, 161, 220, 221, 260; PL204, 205, 302; SD251, 252; or SP261, 305, 306; any second year foreign language course; *with a maximum of four semester credits per discipline or total in foreign languages* (excluding HU) are allowed to count for this requirement. Four credits of one foreign language and four credits of another cannot be used.

Social Science (8) - Any combination of courses in economics (EC); geography (GG), except GG106 and GG108; history (HS), political science (PS), psychology (PY) or sociology (SO) for which credit adds to eight semester credits.

Natural Science (8) - At least one course from each of the following two categories: life sciences - BL105, 110, 111, 122, 204; or both NS103 and 104; physical sciences - CH105, 108, 115, GE111, 112, 114; GG106, 108; NS101, 102, 105, 107, 119; PH221, 222, 231.

If the total credits of these two laboratory courses is less than eight, non-laboratory science courses may be applied toward the requirement if the department chair or dean evaluates the course as appropriate.

Note: Transfer students should refer to the Admissions section of this Catalog for an explanation of the MACRAO agreement as it applies to general education requirements.

BA and BS Requirements (8 credits)

Bachelor of Arts Degree: One year of a modern foreign language (if taken at LSSU, this would be FR151-2 or 251-2; GN141-2; SP161-2 or 261-2). One-half year of two different foreign languages will not meet this requirement.

Bachelor of Science Degree: At least eight semester credits, *in addition* to courses used for general education requirements, from categories of social science, natural science or mathematics.

Departmental Requirements

Each program has a set of specific course requirements determined by the department offering the degree program. See school and departmental sections for these requirements.

Electives

Elective courses are chosen to obtain credit beyond that of specified requirements. Free electives refer to courses you may select completely of your own choice. Designated electives refer to courses selected from a list specified by the department.

Competency in Mathematics

Those seeking associate's or bachelor's degrees are required to demonstrate competence in mathematics at approximately the level of basic algebra. Both the Counseling and Testing Center and the Department of Mathematics and Computer Sciences administer the minimum competency examination. Students can satisfy the mathematics competency requirement in the following ways: (1) score 15 or higher on the intermediate algebra placement examination given at the time the student enters the University, (2) pass the competency examination, (3) complete one of the Lake Superior State University mathematics courses, MA086 or MA090, or higher, or (4) obtain an adequate score on the mathematics component of the ACT test.

Transfer students who have previously completed a course equivalent to MA092, with a grade of 2.00 or higher, or a higher level math class (specifically excluding MA207) will have satisfied the University's mathematics graduation requirement. Your Transfer Credit Evaluation Form must indicate that LSSU's mathematics competency requirement has been satisfied.

You are required to complete mathematics competency (by course or exam) during the first 56 credits earned. If you reach the 56-credit limit without competency, you shall enroll in an appropriate mathematics courses until passed and be limited to a maximum of 13 credits per semester, including the course, until competency is accomplished.

Transfer students entering LSSU with 40 or more transfer credits shall complete mathematics competency during the first 20 credits earned at LSSU or be subject to the enrollment restrictions stated above.

Competency in Reading

Students whose reading ACT scores are below a standardized level (33%) will be required to satisfactorily complete the course SA090, Development Reading I, and where necessary, SA091, Development Reading II. Students not successfully meeting this requirement by their sophomore level (26 credits) will be limited to a 13-semester credit load, including the appropriate reading course, until satisfying this University requirement.

Competency in Writing

The writing competency examination demonstrates a student's ability to read and write critically at a level deemed appropriate for undergraduate work. It will be given at the end of the sophomore English course (EN205, EN210 or EN215) as a "rising junior test" before beginning upper-level courses with disciplinary writing emphasis.

The test consists of a read/respond format in which a passage is supplied and students use it as the basis for the essay. At least three topics from across the curriculum will be available for each test. You will have three hours to complete the test. The rising junior test will be given during the final exam week of EN205, EN210 or EN215 at scheduled group times in place of the final examination. All ›ther test sessions must be scheduled by individuals through Brown Hall.

The test is a University graduation requirement and will be graded pass/ peat by the faculty using criterion-referenced scoring methods. Students who ıst repeat the examination may retake the test one time at the Counseling enter after one month. Students who do not pass the test before junior level (56 credits) must enroll in EN091, an intensive review of English, and will be limited to 13 semester credits, including EN091, until satisfying the requirement.

Transfer students must pass the examination within the first two semesters of attendance at LSSU. If they fail the first attempt, they may retake the examination after one month. If they do not pass the examination within two semesters, they must repeat EN205, 210 or 215.

Transfer students who entered Lake Superior State University in fall semester 1992 or later, having completed the equivalent of the general education English sequence, must take the competency examination before beginning their second semester. Transfer students who do not pass the test before their senior year (88 semester credits) must enroll in EN091 and will be limited to 13 semester credits, including EN091, until satisfying the requirement. Transfer students on a 3+1 program must take the test before the beginning of their first semester. Arrangements will be made, if possible, to administer the test on the campus of the institution from which students are transferring.

Waiver of Competency Requirements

The mathematics and/or writing competency graduation requirement(s) will be waived only on the basis of having a certifiable learning disability or neurological medical condition. Students must be certified by a licensed psychologist or neurologist as having a substantial disability in the learning process.

Those potentially eligible for a waiver are required to initiate their appeal through the University Counseling Center. Those students who obtain the necessary certification must provide the Counseling Center with documentation of such. The Counseling Center shall then notify the Registrar's Office of the waiver. Enrollment restrictions stated above, as appropriate, continue in effect until a student has provided this documentation to the Counseling Center.

Residency Requirements

Bachelor's degree candidates must earn at least 32 of their final 40 credits and at least 50 percent of their departmental required 300/400 level credits in courses offered by Lake Superior State University. Regional Center students must earn at least 32 of the final 64 credits and at least 50 percent of their departmental required 300/400 level credits in courses offered by Lake Superior State University. Associate degree and certificate candidates must earn 16 of their final 20 credits in such courses. For a minor, you must earn at least six of the required credits in such courses.

Exceptions to Graduation Requirements

Exceptions to specific general education requirements may be granted only by the Scholastic Standards Committee. Such exceptions are infrequently made. A petition for exceptions to general education requirements is initiated with the Registrar's Office.

Course substitutions and waivers of departmental degree program requirements may be granted only by the dean of the school offering the program (major or minor).

Normally, you will graduate under the program degree requirements in effect and published in the Catalog at the time you are admitted into the given degree program, provided enrollment at the University is continuous. If enrollment is interrupted, or if you select a new major, you must satisfy program requirements in effect at the time you reenter or officially change to the new major. If program requirements are revised during your enrollment, you will be allowed to graduate under the new requirements providing you can meet such requirements in their entirety.

The University reserves the right to change the requirements for graduation at any time as a means of keeping pace with educational developments affecting the various curricula. As such changes are made, they may, at the discretion of the University, be applied to students already enrolled. In such cases, reasonable and prudent effort will be made to provide the benefit of the new educational program without imposing undue hardship.

Multiple Majors

You may earn more than one major by completing all requirements of each desired major program. Before graduation, you must file a degree audit approved by the appropriate school dean and/or department chair for each major.

Multiple Degrees

If you desire to earn more than one baccalaureate degree, you must either (1) complete all program requirements for the additional degree(s) as certified by the appropriate dean; or (2) complete an additional approved program of study comprising a minimum of 32 additional LSSU credits for each additional baccalaureate degree from Lake Superior State University.

Those earning a bachelor's degree from LSSU and who desire an associate degree, must complete all requirements for the associate degree program at the time they are completing the bachelor's degree requirements.

Students earning an associate from LSSU who desire an additional associate degree must complete all requirements for the additional degree, including 16 additional credits of which 12 must be from courses offered by Lake Superior State University.

Additional Degrees for Graduates of Other Universities

Students who hold a bachelor's degree at another accredited institution, and who desire a bachelor's degree from Lake Superior State University must complete all requirements of an approved degree schedule including at least 32 additional credits in courses offered by LSSU. The degree schedule must be approved by the major department chair, school dean, registrar and provost. You should initiate the approval process with the department chair at the time of or before commencing study toward the additional degree. The schedule elected shall consist mainly of minor, major and cognate courses. Courses considered essential to the degree but not previously elected may, at the option of the department chair and/or school dean, be required even though the total may exceed 32 credits. Lake Superior State University general education requirements are considered complete if you earned a bachelor's degree at any United States accredited university or an honors bachelor's degree from an accredited Canadian university. Mathematics and writing competency requirements must be met.

If you earned a bachelor's degree or associate's degree at another accredited institution and desire an associate's degree from Lake Superior State University, you must complete all requirements of an approved degree schedule including at least 16 additional credits in courses offered by LSSU. The degree schedule process is identical to that described above for an additional bachelor's degree. The schedule elected shall consist mainly of major and cognate courses. Courses considered essential to the degree but not previously elected may, at the option of the department and school, be required even though the total may exceed 16 credits.

Individualized Studies Degree

In addition to the baccalaureate degrees described in departmental sections, Lake Superior State also offers bachelor of arts and bachelor of science degrees in individualized studies. This may be appropriate if you desire an unusually specialized program. The purpose of an individualized studies degree is to provide an opportunity to specialize in two or more academic areas. You will meet with an academic advisor to plan an individualized studies academic program that reflects your professional and personal goals.

Guidelines for individualized studies degree are:

(1) Contact dean or regional center site coordinator with a preliminary plan for degree development.

(2) Dean or regional site coordinator will identify possible faculty advisors(s) or another dean to counsel you in degree planning.

(3) The faculty advisor(s) will assist you in development of the proposal.

  (A) Justification for specialization

  (B) List courses which meet the individualized studies degree requirement including:

    (a) General education requirements (exclusive of freshman experience course)

    (b) Minimum of 124 credits; minimum of 32 of the final 40 hours on campus or minimum of 32 of the final 64 hours at regional center sites.

    (c) Twenty-four credits at 300/400 level in addition to general edu- requirements. A 2.00 overall grade point average is required.

(4) Contact chairperson of Individualized Studies Committee to schedule a committee meeting.

(5) Presentation of the the degree proposal to the committee for review. It is recommended that the advisor attend the committee meeting.

(6) Committee will approve the original proposal, approve the proposal with recommended changes, or disapprove the degree proposal.

(7) You and advisor will submit an approved degree audit sheet to chairperson to be distributed to the committee.

(8) You will process a curriculum change card.

(9) Any course changes from the approved program must be submitted to the respective dean for approval.

Associate in Liberal Arts

An associate's degree in liberal arts is offered in a general two-year program. Requirements and a sample curricular plan are listed in the School of Arts, Letters and Social Sciences section of this catalog.

GRADUATION PROCEDURES

Degree candidacy procedure: Two semesters before students plan to complete degree requirements and graduate, they must submit to the Registrar's Office an appropriate departmental degree audit for each major and minor, and a Declaration of Candidacy for Degree. The necessary forms are available at the student's major departmental office.

The departmental degree audit for a student's major or minor specifies all required courses that have been or must be completed. The audit must be signed by the department chair and/or dean of the school offering the major or minor program. Course substitutions and waivers of departmental degree program requirements may be granted only by the dean of the school offering the major or minor program. Exceptions to specific general education requirements may be granted only by the Scholastic Standards Committee. Such exceptions are infrequently made. A petition for exceptions to general education requirements is initiated with the registrar.

The Registrar's Office checks students' degree audits, after which a preliminary verification of the degree audit is sent to each student and respective department chair. Students are responsible for examining this verification and requesting clarification of anything that is not consistent with their records or understanding.

From the Declaration of Candidacy for Degree forms submitted by students, the registrar creates a potential graduate list for each semester. Names for the commencement program and diploma will be the official, legal name as listed in the records in the Registrar's Office. The names of students who are listed in the annual commencement program are also compiled from Declaration of Candidacy for Degree forms. Students will not be listed in the commencement program unless their degree candidacy form is filed with the Registrar's Office six weeks prior to commencement. Students are expected to attend commencement exercises unless excused by the Registrar's Office. Students completing degree requirements during the summer may participate in commencement the previous semester if their degree candidacy form is received six weeks prior to commencement.

After grades are received in the Registrar's Office at the end of each semester, degree audits will be updated for all students completing credit and who have a degree candidacy form on file. When all requirements specified on the degree audit are fulfilled, the school dean and/or department head and registrar give a final approval. Names of these graduates are then sent by the registrar to the president for approval by the Board of Trustees. Subsequently, a diploma is provided to each student.

Diploma charge: There is no charge for the first diploma from Lake Superior State University. A fee is charged for replacement diplomas.

Students completing graduation requirements in the fall semester or summer, or who otherwise need documentation of completion before their diploma is available, will receive a letter from the registrar certifying that they have completed degree requirements. Additionally, official University transcripts will be sent to any employer, graduate university, or elsewhere, as requested by the graduate. Official transcripts will not be mailed to students.

Graduation with honors: Honors graduates must earn at least 32 credits at Lake Superior State University. All credits with grade points completed at other colleges (percentages are converted to letter grades) will be figured in computing grade point averages for honors diplomas and medallions at LSSU.

Students who earn 3.50 to 3.69 will graduate cum laude; 3.70 to 3.89, magna cum laude; 3.90 to 4.00, summa cum laude. Honors earned shall not be higher than those for which a student qualifies on basis of courses taken at Lake Superior State University.

Graduation diplomas with honors will be awarded to baccalaureate and associate and certificate recipients. Honors medallions will be awarded only to baccalaureate and associate degree recipients who graduate summa cum laude.

Honors Degree

The University honors program offers highly motivated students the opportunity to develop their abilities and skills in exciting and innovative ways. The central goal of the University honors program is to create a community of scholars characterized by strong student-faculty interaction around the world of ideas. The honors program fosters an approach to education that incorporates the qualities of active participation, intellectual curiosity and an interdisciplinary focus.

Selection is based upon a number of factors, including: ACT scores, high school grade point average, application essay, personal interview and Lake Superior State University faculty nomination. Students invited to participate in the program enroll in courses designated for honors credit. The courses are distributed among the requirements for general education, the student's major, and the University honors program and may include small seminars or independent research projects.

To graduate with an honors degree in a program of study, the honors student must have formal acceptance into the University honors program and have successfully completed 21 honors credit hours with an overall grade point average of 3.5 or better at graduation. The 21 honors credit hours are to be distributed among the university's requirements for general education, the student's major and the University honors program.

Upon graduation from the honors program, the student will receive an honors degree in his/her program of study. The honors degree designation is indicated on the student's diploma and is distinct from graduating with honors (see Graduation with Honors).

School of Arts, Letters and Social Sciences

MASTER

Public Administration

BACCALAUREATE

Elementary Teaching
English Language and Literature
    Elementary and Secondary Teaching
History
    Elementary and Secondary Teaching
Human Services
Legal Assistant Studies
Political Science
Psychology
Social Science
Sociology

ASSOCIATE

Early Childhood Education
Legal Assistant Studies
Liberal Arts
Substance Abuse Prevention and Treatment

MINORS

Art
Business French
Child Development
Communications
Counseling
English Language and Literature
English Language and Literature
    Teaching
French Language and Literature
    (may be used as a Teaching Minor)
Geography
Geography Teaching
Gerontology
History
History Teaching
Human Services Administration
Humanities
Japanese Study
Journalism *(may be used as a Teaching Minor)*
Journalism Writing
Legal Assistant Studies
Native American Studies
Political Science
Political Science Teaching
Psychology
Psychology Teaching
Public Administration
Public Relations
Recreation Studies Skill
Sociology
Sociology Social Work
Sociology Teaching
Speech and Drama
Substance Abuse Counseling
Teaching Minor
Writing

School of Arts, Letters and Social Sciences

Faculty: Dean of School, Richard T. Conboy; Professors Richard C. Crandall, John C. Cullen, Daniel Dorrity, Richard Jennings, Gary R. Johnson, Leon Linderoth, Robert Money, James W.T. Moody, Susan H. Ratwik, Timothy Sawyer, Thomas E. Schirer, E. Gary Toffolo, John Wilkinson; Associate Professors Carol S. Andary, Leslie A. Dobbertin, Georgegeen Gaertner, Marcel Pichot, Diana Pingatore, John Stevens, Robert Willey; Assistant Professors Colleen Anderson, Jeffrey Ayres, George Denger, Gerald F. Dobbertin, Polly Fields, Eric Gadzinski, Pamela Hayward, Gary A. Rackliffe, Shirley A. Schoenemann and Raymond Trouve; **Instructor** Aaron Payment.

This school encompasses a variety of disciplines and programs, including early childhood education, English, geography, history, human services, humanities, language, legal assistant studies, Native American studies, substance abuse prevention and treatment, political science, psychology, sociology, teacher education and the Child Care Center. These disciplines are quite diverse in their subject matter and methodology; but all are concerned with the study of human behavior from the perspective of either the liberal arts or the social sciences. The professors in this school, regardless of the academic discipline that they represent, are concerned with the effective teaching and learning of our students.

Offerings: There are a variety of majors, minors and associate degrees. Some programs give students specific employable skills upon graduation. Others are broader, so that upon graduation students may have the option of further education in graduate school or law school, or of entering careers in fields such as politics, teaching, social services, administration and business. Each area of study is described in greater detail below, including requirements for majors, minors and associate degrees.

Entrance requirements: To qualify for admission as freshmen, applicants must be graduates of accredited secondary schools with above average standing in their class. Their secondary school preparation should include a four-year curriculum of at least 15 units of acceptable entrance credits. Two major sequences and two minor sequences should be included in the 15 units for graduation. Individual disciplines within the department may have additional entrance requirements.

Master of Public Administration

Mission Statement

The master of public administration (MPA) program at Lake Superior State University provides graduate-level management education for professionals employed in both the public and nonprofit sectors.

The MPA program has adopted a practitioner orientation in designing a graduate curriculum that purposefully blends management theory with applied approaches in its multi-disciplinary range of courses. Public service employees, who seek to advance their careers either within government agencies or nonprofit organizations, will incorporate professional experiences into courses attuned to their professional needs.

Outcomes

The MPA program will provide its students with:

1. advanced academic preparation in the field of public service management and administration.
2. a graduate curriculum that is practitioner-oriented in its approach to the teaching and learning of management and administrative theories and practices in the context of public administration.
3. graduate courses that will prepare students for management and supervisory positions in public and nonprofit agencies.
4. an opportunity to develop a capacity for self-directed and professional learning.
5. a program that presents a broad-based exposure to the general concepts of public administration.
6. an opportunity to participate in and complete a graduate program directly related to their careers in the public or nonprofit sectors of society while continuing to be employed full-time.
7. a multi-disciplinary approach to learning about management and administration.

Admission Requirements

Admission to the MPA program is based on the following requirements:

1. completion of the MPA program application form.
2. possession of a recognized baccalaureate degree, comprising a minimum of 120 semester credits from an accredited college or university.
3. submission of official transcripts of all previous post-secondary work (including grade 13 and OAC credits where appropriate) with certified translations for non-English transcripts, from which an undergraduate grade point average (GPA) can be computed. To be considered official, transcripts must be sent directly from the undergraduate institution to the LSSU Admissions Office.
4. two letters of recommendation describing your professional and/or academic abilities.
5. a minimum of a 2.8 undergraduate GPA on a four-point scale.
6. Students whose first language differs from English must submit an official "Test of English as a Foreign Language" (TOEFL) report or its equivalent. This report will be used solely for diagnostic purposes and is not a factor affecting admissibility to the program.

Applicants denied admission may appeal to the MPA Admissions Committee.

MPA Degree Requirements

The master of public administration program constitutes 40 credit hours of the following components: Core curriculum courses (15 credits); courses from one of three optional areas (18 credits); a capstone course (four credits); and electives (three credits).

Core Curriculum Courses (15 credits)

Five core courses, which are required of all students, provide generalized management preparation for administrators. These courses enhance a student's

knowledge and skills to assist them in acting ethically and effectively. The following list presents the five courses that comprise the core curriculum:

Foundations of Public Administration
Human Resource Management
Financial Accounting
Organizational Theory
Research Techniques

Optional Areas (18 credits)

The optional areas are related to concentrations associated with the students' specific careers. The three areas are: Health care administration, protective services and general administration. A student will select six courses from one of the optional areas. The courses listed here are examples of the areas that will be covered:

1. **General Administration Option**
   Public Economics*+
   Managing Public Policy Analysis and Evaluation
   Nonprofit Management
   Management of Data and Information Systems
   Organizational Behavior
   Collective Bargaining
   Budgeting
   Organizational Communications
   Nonprofit Management Issues
   Legal Issues/Administrative Law
   Ethics in Management
   Marketing Management

2. **Protective Services Option**
   Protective Services Policy Analysis*
   Remediation in Protective Services**
   Critical Incident Management
   Management of Security Programs
   Women and Criminal Justice
   Enforcement in Protective Services**
   Prevention in Protective Services**
   Corrections Management Issues
   Futures Research

3. **Health Care Administration Option**
   Health Care Administration*
   Health Care Law
   Quality Management Processes
   Managed Care*
   Health Care Economics*+
   Current Topics in Health Care Administration*
   Environmental Policy
   Health Management of Aging Populations

**Required of students selecting this option.*
***Two of these courses are required of students selecting the protective services option.*
+A course in microeconomics is a prerequisite for this course.

Elective Courses (3 credits)

A selection of elective courses will be developed to provide students with an ability to broaden their range of knowledge and skills. These courses may also be available as substitutes for courses in their optional areas. The following is a list of current offerings as well as courses that can be developed in the future.

Employee Assistance Programs
Telecommunications for Managers
Seminar: Contemporary Public Administration Issues
Business Finance
Financial Management
Business and Society
Advertising Management
Managing Economic Development
History of the Labor Movement
Internship*
Marketing Concepts and Applications
Revising Business Prose
Canadian Business Environment

**Required of students who are not mid-career employees.*

Capstone Courses (4 credits)

The function of the capstone course is to provide an opportunity to integrate the material presented in the core curriculum within the context of a student's substantive policy area. The first capstone option involves the traditional thesis; the second option entails the writing of an applied research paper.

Thesis
Applied Research

Program Length

Students have eight years to complete the requirements for their MPA degree from the time of taking the first course. Courses not completed within the eight years will not count toward graduation. Students who attend on a part-time basis may complete the program in two and one-half years to four years.

Grades

The following grades are awarded to MPA students:

A+	=	4.0	C-	=	1.7
A	=	4.0	D+	=	1.3
A-	=	3.7	D	=	1.0
B+	=	3.3	D-	=	0.7
B	=	3.0	F	=	0.0
B-	=	2.7	N	=	0.0
C+	=	2.3	I	=	0.0
C	=	2.0	Z	=	0.0

A minimum overall grade point of 3.00 is required for graduation with no more than six credits of C grades allowed. Courses in which a grade of C-, D, *or* F are received must be repeated.

Guest Students

Students who do not qualify for formal acceptance into the program are classified as guest students and may enroll in MPA courses provided they have the necessary prerequisites for the specific courses. Students who wish to use credit earned as a guest student towards the MPA degree must apply and be accepted into the program. A maximum of six credits earned as a guest student may be applied toward the MPA degree requirements.

Prerequisites

Some courses in the program have prerequisites. A statistics course is a prerequisite for all students. Students selecting the health care administration and the general administration options must have completed a course in microeconomics. These courses are available at Lake Superior State University.

Transfer Credit

A maximum of 12 semesters of graduate-level credit may be transferred into the MPA program from another graduate program. The credits must be graduate level, from an accredited institution, with a grade of B or higher. The courses must be applicable to the MPA curriculum and have been earned within the six-year period prior to the student's admission.

Students who already have an MBA from Lake Superior State University may apply a maximum of 20 credits of appropriate coursework toward the MPA degree requirements. These transfer credits must meet the specific requirements of the MPA program option selected.

Accreditation

Lake Superior State University is accredited by the North Central Association of Colleges and Secondary Schools (NCA). The MPA program is being initiated pending formal accreditation by the NCA.

Registration and Scheduling Information

Course registration and scheduling begins upon receipt of the scheduling bulletin each semester. All registration and scheduling is processed through the Community Services and Development Office.

Drop/Refund Policy

Withdrawal: Students withdrawing from the University must complete a Withdrawal Form in the Fletcher Center for Student Services to initiate a refund. Authorized refunds apply only to tuition and special course fees. For students on approved University financial aid, or aid through other agencies that mandate recovery of financial assistance, refunds will be in accordance with related requirements. Withdrawing students should check with the director of financial aid. Refunds are made according to the following: During the first six days of the semester students receive 100 percent refund on withdrawals. Students withdrawing from all classes between the end of the 100 percent refund period and the first 10 percent of the semester will receive a 90 percent refund. Students withdrawing from all classes between the end of the 90 percent refund period and the 25 percent% point of the semester will receive a 50 percent refund. Students withdrawing from all classes between the end of the 50 percent period and the 50 percent point of the semester will receive a 25 percent refund.

A drop slip must be processed through the Registrar-Scheduling Office. Courses dropped by the end of the eighth week of the semester will be assigned an N grade on the academic transcript.

Non-Credit Option

If desired, students may sign up for a course on a non-credit basis (without letter grade). Tuition remains at the same rate as the credit basis. This option must be selected at scheduling time and cannot be changed once the course has begun. Courses taken under this option do not count towards the MPA degree requirements. They do not affect the grade point average. Students who complete courses under the non-credit option may request a certificate of completion by contacting the Community Services and Development Office. This may be a practical option for guest students who are not taking the course for degree credit, but rather professional and/or personal development.

For more information, please contact the Community Services and Development Office.

Department of Education

Associate Degree: Early Childhood Education

This two-year program leads to an associate degree in early childhood education. It is for students interested in working with young children — birth through age five. Students are expected to acquire an understanding of developmental patterns of the preschool child in such areas as cognition, emotion, social interaction and physical growth. This understanding will be the basis for working with groups of children and will culminate in a practicum.

Graduates of this program normally seek positions with day care centers, day care homes, head start programs, residential homes and other facilities designed for the care and development of the preschool child. Graduates also matriculate into the four-year bachelor degree program in human services at the University or pursue a degree in elementary education or special education. A total of 62 credit hours is required as follows:

Required

EN110	Freshman Composition	3
EN210	Research Paper Processes	3
SD101	Fundamentals of Speech	3
BL105	Function of the Human Body	4
HE104	Nutrition for Early Childhood	3
HE181	First Aid	1
SO113	Sociology of the American Family	3
ED101	Foundations of Early Childhood Education	3
ED105	Child Guidance and Welfare	3
ED110	Curriculum Development and Teaching Practices	3
ED111	Infants & Toddlers: Developmentally Appropriate Practices	3
ED220	Early Childhood Literature	3
ED260	Practicum I	4
ED261	Practicum II	4
ED270	Administration of Early Childhood Programs	3

Cognate Required

PY155	Lifespan Development	
	or	3
PY265	Child and Adolescent Development	
PY288	Organizational Behavior	
	or	3
PY301	Exceptional Child and Adolescent	

SO225	Native Cultures of North America		SO103	Cultural Diversity	
	or	3	**Electives**		7

Associate Degree: Early Childhood Education
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
BL105	Function of the Human Body	4	SO113	Sociology of the American Family	3
PY155	Lifespan Development		HE104	Nutrition for Early Childhood	3
	or	3	HE181	First Aid	1
PY265	Child and Adolescent Development		ED111	Infants & Toddlers: Developmentally Appropriate Practices	3
ED101	Foundations of Early Childhood Education	3	ED105	Child Guidance and Welfare	3
ED110	Curriculum Development and Teaching Practices	3			16
		16			
Second Year					
EN210	Research Paper Process	3	ED270	Administration of Early Childhood Programs	3
ED220	Early Childhood Literature	3		Elective	3
ED260	Practicum I	4		Elective	2
	PY* or SO**	3	ED261	Practicum II	4
	Elective	2		PY* or SO**	3
		15			15

**Choose one of the following:*
PY301 Exceptional Child & Adolescent
or
PY288 Organizational Behavior

***Choose one of the following:*
SO225 Native Cultures of North America
or
SO103 Cultural Diversity

Teacher Education

Teacher education prepares graduates to teach at either the elementary or secondary level. The five-year program includes a bachelors degree followed by a year-long internship in a local school. Program requirements emphasize the importance of academic preparation and teaching for understanding in a community of diverse students. Students take two teacher education courses during their first two years at Lake Superior State University and then apply for admission to the teacher education program.

Details of program requirements, admissions procedures and certification policies are in the **Teacher Education Handbook** and may be obtained from the School of Arts, Letters and Social Sciences.

Teacher Education Minor: Students are required to complete 21 semester hours of credit.

Required courses:

TE150	Reflections on Learning	3
TE250	Human Diversity, Power and Opportunity in Social Institutions	3
TE301*	Learners, Learning, and Teaching in Context	4
TE401*	Teaching of Subject Matter to Diverse Learners	5
TE402*	Crafting Teaching Practice	6

**Subject to approval*

Teacher education graduate courses will be taken in the fifth year.

Elementary Teaching

Elementary teachers need academic preparation to be able to teach subjects in four areas:

Language Arts
Mathematics
Natural Science
Social Science

The teacher education program has two options for elementary teaching that provide academic coursework in these four areas. Students take courses either in a single major or in two minors combined with courses in the planned program. Elementary teachers are certified to teach kindergarten through sixth grade, all subjects, in self-contained classrooms. They can also teach their academic major and/or minor(s) in grades six through eight.

Option 1

This option leads to a bachelor of arts or bachelor of science in the student's major.

1. One academic major from list below
2. The courses in the three remaining sections of the planned program not related to the student's major
3. Child and Adolescent Development (PY265)
4. Teacher education minor
5. General education requirements
6. BA or BS requirements

Majors: (See individual majors for program requirements)

Biology
English Language and Literature
Geology
History
Mathematics
Social Science

Option 2

This option leads to a bachelor of arts or bachelor of science in elementary education.

1. Two academic minors in different planned program areas
   a. Language Arts
   b. Mathematics
   c. Natural Sciences
   d. Social Sciences

2. The courses in the two remaining areas of the planned program not related to the minors
3. Child and Adolescent Development (PY265)
4. Teacher education minor
5. General education requirements
6. BA or BS requirements

Minors:

Language Arts
Communications
English
French
Journalism

Mathematics
Computer Science
Mathematics

Natural Science
Biology
Chemistry
Geology/Earth Science

Social Science
Economics
Geography
History
Political Science
Psychology
Sociology

Planned Program for Elementary Teachers

Required:

PY265	Child & Adolescent Development	3

Students take the courses in three or two of the following planned program areas that are not covered by their major or their two minors.

Language Arts:

EN215	Intro. to Literature & Research	3
EN320	Responding to Writing	3
EN231	American Literature I	
	or	3
EN232	American Literature II	
EN335	Children's Literature	3

Mathematics:

MA103	Number Systems and Problem Solving	4
MA104	Geometry & Measurement	4
MA111	College Algebra	3

Choose one of the following:

BA211	Business Statistics	3
MA207	Prin. of Statistical Methods	3
PY210	Statistics	3
SO302	Statistics for Social Science	4

Natural Science:

CH108	Applied Chemistry	4
GE114	Field Excursions in Earth Science	3
NS101	Conceptual Physics	3
BL105	Function of the Human Body	
	or	4
NS103	Environmental Science	
NS104	Environmental Science Lab	

Social Science

Choose one of the following series:

HS101	History of World Civilization I	4
HS102	History of World Civilization II	4
	or	
HS131	United States History I	4

HS132	United States History II	4	*(Canadian students may substitute:*		
GG201	World Regional Geography	4	PS160	Intro. to Canadian	
PS110	Intro. to American Government & Politics	4		Government & Politics	3)

Secondary Teaching

Secondary teachers are certified to teach their academic major and/or minor(s) in grades seven through 12. This program leads to a bachelor of arts or a bachelor of science in the student's major. Certification is available in the following majors:

Biology
English Language and Literature
Geology
History
Mathematics

Students can also complete any of the following minors and be certified to teach in these areas:

School of Arts, Letters and Social Sciences
Communications
English
French
Geography
History
Journalism
Political Science
Psychology
Sociology

School of Business
Economics

School of Engineering and Mathematics
Computer Science
Mathematics

School of Science and Natural Resources
Biology
Chemistry
Geology/Earth Science

Department of English and Speech

Bachelor of Arts: English Language and Literature

Requirements: Students must complete, in addition to the general education requirements, two years of foreign language, 42 semester hours of credit in the courses specified below (or their equivalents) plus sufficient additional hours of free electives to make up a required total of 124 hours. EN215 Introduction to

Literature and Research is the recommended second composition course. Majors in English must complete one minor in an area to be approved by the chair of the department.

I. Required Courses:

EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3
EN420	History of the English Lanaguage	3
EN421	History of Literary Criticism	3
EN430	Chaucer	3
EN431	Milton & the Metaphysical Poets	3
EN432	Shakespeare	3

Second Year Modern Foreign Language 8

II. Nine semester hours must be selected from:

EN220	Advanced Composition	
	or	3
EN221	Creative Writing	
EN330	Development of the Novel in England and America I	
	or	3
EN331	Development of the Novel in England and America II	
EN332	The Short Story	
	or	3
EN333	Studies in the Drama: The Genre and Theatre in Context	

III. Six elective semester hours must be selected from:
EN220, 221, 320, 321, 322, 330, 332, 333, 334, 335, 433, 450, or HU256

Bachelor of Arts: English Language and Literature
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
	1st Year Foreign Language I	4		1st Year Foreign Language II	4
	Minor	4		Minor	4
NS	General Education	4	SS	General Education	4
		15			15

**May be taken fall or spring semester of the first year.*

Second Year					
EN215	Intro. to Literature & Research	3	EN220	Advanced Composition	
	2nd Year Foreign Language I	4		*or*	3
EN231	American Literature I	3	EN221	Creative Writing	
EN233	English Literature I	3		2nd Year Foreign Language II	4
	Minor	4	EN232	American Literature II	3
		17	EN234	English Literature II	3
					14
Third Year					
EN330	Development of the Novel in England and America I		EN331	Development of the Novel in England and America II	
	or	3		*or*	3
EN332	The Short Story		EN333	Studies in the Drama: The Genre and Theatre in Context	
EN420	History of the English Lanaguage	3	EN	Elective	3
HU	General Education	4		Minor	4
NS	General Education	4	HU	General Education	4
		14			17

Fourth Year

EN431	Milton & the Metaphysical Poets	3	EN421	History of Literary Criticism	3
EN430	Chaucer	3	EN432	Shakespeare	3
	Free Elective	3	EN	Elective	3
SS	General Education	4		Free Elective	4
	Minor	4		Free Elective	4
		17			17

Bachelor of Arts: English Language and Literature
Elementary Teaching Certification

Requirements: In addition to general education requirements (EN215 Introduction to Literature and Research is the recommended sophomore composition course), students must complete:

1. 47 semester credit hours in the courses specified below or their equivalents;

2. The planned program for elementary teachers, excluding the English section; and

3. 21 credits in teacher education courses TE150, 250, 301, 401, and 402.

Required Courses

Literature:		*15*
EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3
EN335	Children's Literature	3
Non-Literature		*9*
EN220	Advanced Composition	3
EN320	Responding to Writing	3
EN322	Structure of the English Language	3

Select nine credits from:

EN235	Survey of Native American Literature	3
HU261	World Literature I	3
HU262	World Literature II	3
HU256	Intro. to Film: Images of Our Culture	3
EN332	The Short Story	3
EN333	Studies in the Drama: The Genre and Theatre in Context	3
EN334	Approach to Poetry	3
EN432	Shakespeare	3

Select six credits from:

HU255	World Mythology	3
HU256	Intro. to Film: Images of Our Culture	3
EN321	Rhetoric and Composition Theory *or*	3
SD307	Classical/Contemporary Rhetoric	
EN420	History of the English Language	3

Other major requirement:

Second Year Foreign Language 8

Bachelor of Arts: English Language and Literature
Elementary Teaching Education (sample schedule)

FALL

First Year

SD101	Fundamentals of Speech	3
	Plan Prog Math	3
	1st Year Foreign Language I	4
	Natural Science Elective	4
		14

SPRING

EN110	Freshman Composition*	3
	Social Science Elective	4
	1st Year Foreign Language II	4
TE150	Reflections on Learning	3
	Plan Prog Math	3
		17

**May be taken fall or spring semester.*

Second Year

EN215	Intro. to Literature & Research	3
	2nd Year Foreign Lanaguage I	4
EN231	American Literature I	3
EN233	English Literature I	3
TE250	Human Diversity, Power and Opportunity in Social Institutions	3
		16

EN220	Advanced Composition	3
	2nd Year Foreign Language II	4
EN232	American Literature II	3
EN234	English Literature II	3
PY265	Child & Adolescent Development	3
		16

Third Year

EN332	The Short Story	3
EN420	History of the English Language	3
EN221	Creative Writing	3
	Humanities Elective	4
	Natural Science Elective	4
		17

EN333	Studies in Drama: The Genre and Theatre in Context	3
EN432	Shakespeare	3
EN331	Development of the Novel in England and America II	3
EN322	Structure of the English Language	3
EN335	Children's Literature	3
	Planned Prog Soc Sci	4
		19

Summer

TE301	Learners, Learning and Teaching in Context	4
GE114	Field Excursions in Earth Science	3
		7

Fourth Year

TE401	Teaching of Subject Matter to Diverse Learners	5
EN430	Chaucer	3
	Planned Prog Nat Sci	3
	Planned Prog Math	3
		18

TE402	Crafting Teaching Practice	6
EN334	Approach to Poetry	3
EN321	Rhetoric and Composition Theory	3
	Planned Prog. Soc Sci	4
	Planned Prog Math	3
		19

Bachelor of Arts: English Language and Literature
Secondary Teaching Certification

Requirements: In addition to general education requirements (EN215 Introduction to Literature and Research is the recommended sophomore composition course), students must complete:

1. 50 semester hours of credit in the courses specified below or their equivalents;

2. A minor approved for teacher certification; and

3. 21 credits in teacher education courses TE150, 250, 301, 401, and 402.

Required Courses

Literature		*15*
EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3
EN421	History of Literary Criticism	3

Non-Literature		*9*
EN220	Advanced Compostion	3
EN320	Responding to Writing	3
EN322	Structure of the English Language	3
	or	
EN420	History of the English Language	

Select six credits from each of the following categories: *6*

Genre:		
EN330	Development of the Novel in England and America I	3
	or	
EN331	Development of the Novel in England and America II	

EN332	The Short Story	3
EN333	Studies in the Drama: The Genre and Theatre in Context	3
EN334	Approach to Poetry	3
Major Authors		6
EN430	Chaucer	3
EN431	Milton and the Metaphysical Poets	3
EN432	Shakespeare	3
EN433	Seminar in Major American and English Writers	3
Optional		6
EN221	Creative Writing	3
EN235	Survey of Native American Literature	3
EN321	Rhetoric and Composition Theory	3

EN322	Structure of the English Language	3
EN330	Development of the Novel in England and America I	3
EN331	Development of the Novel in England and America II	3
EN332	The Short Story	3
EN333	Studies in Drama: The Genre and Theatre in Context	3
EN334	Approach to Poetry	3
EN430	Chaucer	3
EN431	Milton and the Metaphysical Poets	3
EN432	Shakespeare	3
EN433	Seminar in Major American and English Writers	3
Other requirements:		
	2nd Year Foreign Language	8

Bachelor of Arts: English Language and Literature
Secondary Teaching Option (sample schedule)

FALL			SPRING		
First Year					
SD101	Fundamentals of Speech	3	EN110	Freshman Composition*	3
	Minor Elective	4		Social Science Elective	4
	1st Year Foreign Language I	4		1st Year Foreign Language II	4
	Natural Science Elective	4	TE150	Reflections on Learning	3
		15			14
**May be taken fall or spring semester.*					
Second Year					
EN215	Intro. to Literature & Research	3	EN220	Advanced Composition	3
	2nd Year Foreign Language I	4		2nd Year Foreign Language II	4
EN231	American Literature I	3	EN232	American Literature II	3
EN233	English Literature I	3	EN234	English Literature II	3
TE250	Human Diversity, Power and Opportunity in Social Institut.	3		Natural Science Elective	4
		16			17
Third Year					
EN332	The Short Story	3	EN333	Studies in Drama: The Genre and Theatre in Context	3
EN420	History of the English Language	3	EN432	Shakespeare	3
EN221	Creative Writing	3	EN331	Development of the Novel in England and America II	3
	Minor Elective	4	EN322	Structure of the English Lanaguge	3
	Social Science Elective	4		Minor Elective	4
		17			16
Summer					
TE301	Learners, Learning and Teaching in Context	4			

Fourth Year

TE401	Teaching of Subject Matter to Diverse Learners	5	TE402	Crafting Teaching Practice	6
EN430	Chaucer	3	EN334	Approach to Poetry	3
	Minor	4	EN321	Rhetoric & Composition Theory	3
	Minor	4		Natural Science Elective	4
		16			16

Associate Degree: Liberal Arts

This degree is offered to students completing the general education requirements of the University, any minor presently offered by the University, free electives for a total of 62 credit hours (minimum), and demonstrating competency in mathematics and writing. Consult departmental offerings for requirements of a minor and electives.

Courses selected for credits toward the general education requirements may be, at the discretion of the department offering the minor, accepted for the minor. It is advisable to complete general education requirements first, as changes in the choice of an area of study will not appreciably affect the program for the first year.

Note: Once you have chosen a minor, contact the department which offers it in order to be assigned an advisor. The department offering your minor will both advise you and conduct your degree audit before graduation.

Associate Degree: Liberal Arts *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
	Social Science General Education	4		Social Science General Education	4
	Minor Courses	7		Natural Science General Education	3
	Elective	3		Minor Courses	6
		17		Elective	1
					17

**May be taken fall or spring semester.*

Second Year					
EN210	Research Paper Process			Natural Science General Education	3
	or	3		Humanities General Education	4
EN215	Intro. to Literature & Research			Minor Course	7
	Humanities General Education	3		Elective	3
	Natural Science General Education	3			17
	Elective	1			
		15			

Department of History & Humanities

Bachelor of Arts/Science: History

Requirements for the bachelor of arts: 1) the general education requirements of the University; 2) one year of foreign language or its equivalent; 3) HS101, 102 History of World Civilization sequence; or HS131, 132 United States

History sequence; 4) 16 semester hours of 300- or 400-level history courses; 5) HS496 Historical Methods and HS497 Senior Seminar in History; 6) additional history electives to total 30 semester hours; 7) GG106 Physical Geography and GG201 World Regional Geography; 8) four semester hours selected from: GG306, 321, 322, 323, 325, 360, or EC201; and 9) one minor. Total department credits required: 70 semester hours.

Requirements for the bachelor of science: This degree includes requirements 1,3,4,5,6,7,8 and 9 above but excludes 2. However, in place of the foreign language the student must take a minimum of eight semester hours of social sciences, natural sciences or mathematics beyond the general education and major requirements. Total department credits required: 70 semester hours.

Bachelor of Arts or Bachelor of Science: History
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	HU	Elective	4
SD101	Fundamentals of Speech	3		Minor	4
NS	Elective	4	NS	Elective	4
HS101	History of World Civilization I		HS102	History of World Civilization II	
	or	4		*or*	4
HS131	United States History I		HS132	United States History II	
		14			16
Second Year					
GG106	Physical Geography: Landforms	4	GG201	World Regional Geography	4
	History Elective	4		History Elective	4
EN210	Research Paper Process*		HU	Elective	4
	or	3		Cognate** or Language	4
EN215	Intro. to Literature & Research*				16
	Cognate** or Language	4			
		15			
Third Year					
HS	300-Level History Elective	4	HS	300-Level History Elective	4
	Minor	4		Minor	4
Geography Requirement 300-Level		4		Free Elective	4
	or			Minor	4
EC201	Princ. of Macroeconomics	3			16
	Free Elective	4			
		15-16			
Fourth Year					
HS496	Historical Methods	2	HS497	Senior Seminar in History	2
HS	400-Level History Elective	4	HS	400-Level History Elective	4
	Minor	4		Minor	4
	Free Electives	5		Free Elective	4
		15			14

**May be taken fall or spring semester.*
***The cognate requirement is simply the BA/BS differentiation. Students who want a bachelor of arts degree should take eight semester hours (one year) of a foreign language to fulfill this requirement. Students who want a bachelor of science degree should select eight semester hours of social sciences, natural sciences or mathematics beyond the general education and major requirements.*

Bachelor of Arts or Bachelor of Science: History
Elementary Teacher Certification

Requirements: In addition to the general education requirements, students must complete:

1. 53 semester credit hours in the courses specified below, or their equivalents;

2. The planned program for elementary teachers, excluding the social sciences and history section; and

3. 21 credits in teacher education courses TE150, 250, 301, 401, and 402.

Required Courses:

HS101	History of World Civilization I	
	and	8
HS102	History of World Civilization II	
	or	
HS131	United States History I	
	and	8
	United States History II	
HS440	The Declaration of Independence and the Constitution	4
HS496	Historical Methods	2
HS497	Senior Seminar in History	2

Additional 300/400 level history electives to total 30 semester hours **14**

PS110	Intro. to American Government & Politics	4
PS130	Intro. to State and Local Government	4
GG201	World Regional Geography	4
GG306	Cultural Geography	3
B.A.	1st Year Foreign Lanaguage	
	or	8
B.S.	Social Science Cognate	

Bachelor of Arts or Bachelor of Science: History
Elementary Teacher Certification (sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
	NS Elective	4	HU	Elective	4
HS101	History of World Civilization I		HS102	History of World Civilization II	
	or	4		*or*	4
HS131	United States History I		HS132	United States History II	
	Planned Prog Math	3	TE150	Reflections on Learning	3
		14			14
Second Year					
PS110	Intro. to American Government & Politics	4	EN215	Intro. to Literature & Research	3
	Cognate** or Language	4		Cognate** or Language	4
TE250	Human Diversity, Power and Opportunity in Social Institut.	3	GG201	World Regional Geography	4
GG106	Physical Geography: Landforms	4	PY265	Child & Adolescent Development	3
	Planned Prog Math	3		Planned Prog Nat Sci	3-4
		18			17-18

Third Year

HS	300-Level History Elective	4	HS	300-Level History Elective	4
HS440	The Declaration of Independence and the Constitution	4	HU	Elective	4
	Planned Prog Math	3		Planned Prog Nat Sci	4
	Planned Prog English	3		Planned Prog English	3
		14			15

Summer

TE301	Learners, Learning and Teaching in Context	4
GE114	Field Excursions in Earth Science	3
		7

Fourth Year

HS496	Historical Methods	2	HS497	Senior Seminar in History	2
HS	400-Level History Elective	4	HS	400-Level History Elective	4
TE401	Teaching of Subject Matter to Diverse Learners	5	TE402	Crafting Teaching Practice	6
	Planned Prog English	3	PS130	Intro. to State and Local Government	4
		14			16

*May be taken fall or spring semester.

**The cognate requirement is simply the BA/BS differentiation. Students who want a bachelor of arts degree should take eight semester hours (one year) of a foreign language to fulfill this requirement. Students who want a bachelor of science degree should take eight semester hours of social sciences, natural sciences or mathematics beyond the general education and major requirements.

Bachelor of Arts or Bachelor of Science: History
Secondary Teacher Certification

Requirements: In addition to general education requirements, students must complete:

1. 53 semester credit hours in the courses specified below, or their equivalents;

2. A minor approved for teacher certification; and

3. 21 credits in teacher education courses TE150, 250, 301, 401, and 402.

Required courses:

HS101	History of World Civilization I	
	and	8
HS102	History of World Civilization II	
	or	
HS131	United States History I	
	and	8
HS132	United States History II	
HS440	The Declaration of Independence and the Constitution	4
HS496	Historical Methods	2
HS497	Senior Seminar in History	2
Additional 300/400-level history electives to total 30 semester hours		14
PS110	Intro. to American Government and Politics	4
PS130	Intro. to State and Local Government	4
GG106	Physical Geography: Landforms	4
GG201	World Regional Geography	4
B.A.	1st Year Foreign Language	
	or	8
B.S.	Social Science Cognate	

Bachelor of Arts or Bachelor of Science: History
Secondary Teacher Education (sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
NS	Elective	4	HU	Elective	4
HS101	History of World Civilization I		HS102	History of World Civilization II	
	or	4		*or*	4
HS131	United States History I		HS132	United States History II	
	Minor	4	TE150	Reflections on Learning	3
		15			14
Second Year					
PS110	Intro. to American Government and Politics	4	EN210	Research Paper Process*	3
	Cognate (Language or other)**	4		Cognate**	4
TE250	Human Diversity, Power and Opportunity in Social Institut.	3	GG201	World Regional Geography	4
GG106	Physical Geography	3	PS130	Intro. to State and Local Government	4
		14			15
Third Year					
HS	300-Level History Elective	4	HS	300-Level History Elective	4
HS440	The Declaration of Independence and the Constitution	4	HU	Elective	4
	Minor	4		Minor	4
	Minor	4		Elective	2
		16			14
Summer					
TE301	Learners, Learning and Teaching in Context	4			
Fourth Year					
HS496	Historical Methods	2	HS497	Senior Seminar in History	2
HS	400-Level History Elective	4	HS	400-Level History Elective	4
TE401	Teaching of Subject Matter to Diverse Learners	5	TE402	Crafting Teaching Practice	6
	Minor	4	Nat Sci	Elective	4
		15			16

**May be taken fall or spring semester.*
***The cognate requirement is simply the BA/BS differentiation. Students who want a bachelor of arts degree should take eight semester hours (one year) of a foreign language to fulfill this requirement. Students who want a bachelor of science degree will satisfy this requirement through credits from the planned program and other additional credits in English, social sciences, natural sciences or mathematics beyond the general education and major requirements.*

Department of Political Science

Legal Assistant Studies

This program is designed to train qualified legal assistants capable of working in a variety of areas of the law; program requirements are based upon guidelines of the American Bar Association and National Association of Legal Assistants.

Legal assistants, or paralegals, are paraprofessionals who work under the supervision of attorneys. Among other tasks, they conduct legal research, draft legal pleadings and documents, assist attorneys during legal proceedings and manage activities of law offices. Legal assistants work for private law firms, banks, real estate offices, corporations, insurance companies, accounting firms, judges, government agencies and other organizations.

Programs include: Legal assistant studies baccalaureate degree with emphasis in: Legal administration, criminal law, personal injury, labor law, legislative/constitutional law or a selected minor as approved by the legal assistant studies coordinator; a two-year associate degree in the legal assistant studies; or a minor in a four-year baccalaureate program.

Bachelor of Science: Legal Assistant Studies

For this degree, students must complete the required courses in the majors that are listed below, the general education requirements, plus electives to total 124-128 credits. Students may elect a specialty area as listed below or a minor as approved by the legal assistant studies coordinator.

Required Major Courses (45 credits)

LA102	Legal Research and Case Analysis	3
LA202	Legal Writing and Analysis	3
LA125	Civil Litigation and Procedure	4
LA140	Personal Injury Litigation and Investigative Techniques	3
LA150	The Legal Assistant Profession and Ethical Considerations	3
LA250	Law Office Management, Systems and Technology	3
LA320	Real Estate Law	3
LA321	Family Law	2
LA322	Probate Law & Procedure	3
LA401	Evidence & Trial Practice	3
LA450	Advanced Legal Writing & Interviewing Seminar	3
LA	Elective**	3
BA254	Business Law I	3
BA255	Business Law II	3
CJ319	Substantive Criminal Law	3

General Education (33 credits)*

EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fundamentals of Speech	3
	Natural Science	8
	Humanities	8
	Social Sciences-Must select	8
PS110	Intro. to American Government and Politics	
	or	
PS467	Constitutional Law and Civil Liberties	

Cognates - Required: (16-18 credits)

OA119	Accounting Procedures***	4
LA299	Legal Assistant Internship and Professional Development Seminar	6-8
CJ409	Procedural Criminal Law	3

Word Processing/Computer Science 3

Choose one of the following:

DP225	Word Processing Techniques
DP151	Computer Applications
CS101	Intro. to Microcomputer Applications

Electives (11-12 credits)

Electives are to be chosen in consultation with advisor.

**Note: The legal assistant B.S. degree requires eight credits in social science, natural science or mathematics beyond those for general*

education. These requirements may be fulfilled in part or in total through the specialty areas section or the minor. Students should consult their advisors.

***Note: See LA300, seniors in legal assistant studies; also consult with legal assistant advisor.*

****Note: AC132 may be substituted for OA119 for students specializing in legal administration.*

List of Specialty Areas

A student shall obtain a minimum of 20 credits in any one of the specialty areas listed below. Specialty area courses should be selected in consultation with your legal assistant studies advisor. As an alternative to selecting a specialty area within this program, a student may choose a minor that must be approved by the legal assistant studies advisor or dean.

Note: At least nine credit hours shall be at the 300-400 level.

Criminal Law Specialty

CJ101	Intro. to Criminal Justice	3
CJ243	Investigation	3
CJ250	Correctional Law	3
CJ355	Juvenile Justice	3
CJ444	Criminalistics	3
SO101	Introduction to Sociology	3
SO103	Cultural Diversity	3
SO214	Criminology	3
SO338	Deviance	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology	3

Labor Law Specialty

EC201	Principles of Macroeconomics *or*	3
EC202	Principles of Microeconomics	
EC403	Private Enterprise and Public Policy	3
LA406	Worker's Disability Compensation Law	2
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN451	Labor Law	4
MN464	Organizational Behavior	3
MN469	Collective Bargaining	3
SO313	Work and Organization	3
PY228	Organizational Behavior	3
PY383	Industrial Psychology	3

Legal Administration Specialty

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
AC232	Intermediate Accounting I	4
AC233	Intermediate Accounting II	4
AC332	Cost Accounting I	4
AC334	Accounting Information Systems	3
AC421	Federal Taxation Accounting I	3
AD422	Federal Taxation Accounting II	3
FN341	Managerial Finance	4
FN443	Insurance	4
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN461	Management Simulation	3
MN464	Organizational Behavior	3
MK281	Marketing Principles and Strategy	3
MK387	Advertising Theory and Practice	3
BA226	Records Management	3
SD320	Public Relations	4
PY228	Organizational Behavior	3
EC302	Managerial Economics	4

Legislative/Constitutional Law Specialty

EC201	Principles of Macroeconomics *or*	3
EC202	Principles of Microeconomics	
EC305	Public Finance	3
HS131	United States History I	4
HS132	United Staes History II	4
LA305	Tribal Law and Government	3
PS130	Intro. to State and Local Government	4
PS201	Intro. to Public Administration	3
PS301	Policy Analysis and Evaluation	4
PS364	Political Parties, Interest	

	Groups & Public Opinion	3
PS367	Congress & the Presidency	4
PS401	Prin. of Public Administration	3

Personal Injury Specialty

HE209	Pharmacology**	3
BL105	Function of the Human Body	4
BL121	Human Anatom & Physiology I	4
BL122	Human Anatomy & Physiology II	4
CH104	Life Chemistry I	3
CH105	Life Chemistry II	4
FN443	Insurance	4
LA405	No-Fault Automobile Law	3
LA406	Worker's Disability Compensation Law	2
PY101	Introduction to Psychology	4
PY217	Social Psychology	3
PY357	Personality Theory	3
PY385	Health Psychology	3
TC101	Construction I	3
TC102	Construction II	3

Electives (9-10)
Electives are to be chosen in consultation with advisor.
**LA300 seminar in legal assistant studies may apply to certain specialties and can be taken with approval of legal assistant coordinator. In the alternative, these special topics may be used as the required legal assistant elective.*

***Prerequisites: BL122 or BL105 or CH105*

Bachelor of Science: Legal Assistant Studies
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	LA125	Civil Litigation & Procedure	4
LA102	Legal Research & Case Analysis	3	LA140	Personal Injury Litigation and Investigative Techniques	3
LA150	The Legal Assistant Profession and Ethical Considerations	3	PS110	Intro. to American Government and Politics	4
SD110	Fundamentals of Speech	3		Cognate	3
OA119	Accounting Procedures	4		Elective	2
		16			16
Second Year					
EN210	Research Paper Process*	3	LA322	Probate Law and Procedure	3
LA202	Legal Writing & Analysis	3	BA255	Business Law II	3
LA320	Real Estate Law	3	LA250	Law Office Management, Systems & Technology	3
LA321	Family Law	2		Electives	6
BA254	Business Law I	3			15
RA	Elective	1			
		15			
Third Year					
LA401	Evidence & Trial Practice	3	CJ409	Procedural Criminal Law	3
CJ319	Substantive Criminal Law	4	NS	Elective	4
NS	Elective	4		Specialty/Minor	6
	Specialty/Minor	4		Elective	4
LA	Elective	3			17
		18			
Fourth Year					
PS467	Constitutional Law and Civil Liberties	4	LA450	Advanced Legal Writing and Interviewing Seminar	3
	Specialty/Minor	7	LA299	Legal Assistant Internship	6
HU	Elective	4		Specialty/Minor	3
RA	Elective	1	HU	Elective	4
		16			16

**May be taken fall or spring semester.*

Political Science

Political Science is the systematic study of government and politics. Since government and politics are found at many levels — international, national, state and local — and all over the world, political science has many facets. All of these facets receive attention in the political science program at Lake Superior State University.

The goal of the curriculum is to prepare students interested in government and politics for rewarding careers and lifetimes of learning and civic involvement. To best achieve this goal, three distinct concentrations or tracks are available for students of political science:

1. general political science
2. pre-law
3. public administration.

Each concentration has been designed to provide a combination of knowledge and skills that is uniquely appropriate for those with particular career goals. However, choosing one concentration over the others does not limit a student to one particular career path — each of the concentrations provides a solid grounding in political science.

Bachelor of Arts/Science: Political Science - General

The general political science concentration is designed to provide a broad education in political science. It is most appropriate for students who plan to attend graduate school in political science and for those with an interest in government and politics who wish to get a broad, liberal education as preparation for a career in business, government or journalism. Students who continue their education in graduate school most often pursue careers as professors, researchers, consultants, or government officials. Students who do not pursue graduate study choose from a wide variety of career options in business, government and journalism.

Political Science Courses (36 credits)

PS110	Intro. to American Government & Politics	4
PS491-492	Senior Seminar I & II	6

A minimum of one course in each of following areas, and two courses in one of the areas: **16-20**

American Politics
(PS325, 364, 367, 467)
Comparative Politics
(PS160, 331, 334)
International Relations
(PS241, 411, 420)
Political Philosophy
(PS351, 352)

Additional political science electives to reach 36 credits **6-10**

Note: A minimum of 21 credits must be at the 300/400 level. Of these, at least nine must be at the 400 level.

General Political Science Cognates (27-28 credits)

CS101	Intro. to Microcomputer Appl.	3
EC201	Principles of Macroeconomics	3
EN220	Advanced Composition	
	or	3
EN221	Creative Writing	
HS	sequence*	8
PL204	Introduction to Philosophy	
	or	3
PL205	Logic	
SD302	Argumentation & Advocacy	
	or	3-4
SD320	Public Relations	
PS211	Political Science Research and Statistics	4

*One full-year history sequence (HS 101-102 or HS 131-132) is recommended.

General Education Requirements 33

Bachelor of Arts Cognates:
One Year of a Foreign Language 8

Bachelor of Science Cognates:
A minimum of nine credits from the following:

EC202	Principles of Microeconomics	3
PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	3
SO213	Introduction to Anthropology	3

Bachelor of Arts or Bachelor of Science: Political Science - General *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
PS110	Intro. to American Government and Politics	4	Pol Sci	Elective	4
HS	History Sequence Elective	4	HS	History Sequence Elective	4
Nat Sci	Elective	3	Nat Sci	Elective	3
SA100	How to Succeed in College	1			14
		15			
Second Year					
EN210	Research Paper Process*	3	Nat Sci	Elective	3
HU251	Humanities I	4	HU252	Humanities II	4
Pol Sci	Elective	3	Pol Sci	Elective	3
CS100	Intro. to Microcomputer Appl.	3	PS211	Political Science Research and Statistics	4
	Elective	3			14
		16			
Third Year					
Pol Sci	Dist Elective	3	Pol Sci	Dist Elective	3
PL204	Introduction to Philosophy	3	Pol Sci	Elective	3
EC201	Principles of Macroeconomics	3	EN220	Advanced Composition	3
BA/BS	Cognate	4	SD302	Argumentation and Advocacy	3
	Elective	3	BA/BS	Cognate	4
		16			16
Fourth Year					
PS491	Senior Seminar I	3	PS492	Senior Seminar II	3
Pol Sci	Dist Elective	4	Pol Sci	Dist Elective	4
	Elective	3		Elective	3
	Elective	3		Elective	3
	Elective	3		Elective	3
		16			16

**May be taken in spring semester.*

Bachelor of Arts/Science: Political Science — Pre-Law

The pre-law concentration provides students of political science interested in legal careers with a planned curriculum that prepares them especially well for law school and for careers in law. Students who choose this option are often interested in careers as attorneys, prosecutors or judges. It should be noted that this is not a mandatory pre-law curriculum; it is a curriculum for pre-law students who have a special interest in government and politics.

Noteworthy features of this concentration are a special course on the nature of legal careers and how to prepare for them; two courses in legal research and writing that provide students with a head start in using a law library and in conducting legal research; and a well-designed combination of support courses in logic, debate, writing, accounting and research.

Political Science Courses (36 credits)

PS110	Intro. to American Government and Politics	4
PS120	Introducton to Legal Processes	3
PS130	Intro. to State and Local Government	4
PS222	Intro. to the Legal Profession	2
PS467	Constitutional Law and Civil Liberties	4
PS491-492	Senior Seminar I & II	6

A minimum of one course in each of the following areas: 10-12

Comparative Politics
(PS160, 331, 334)
International Relations
(PS241, 411, 420)
Political Philosophy
(PS351, 352)

Note: A minimum of 21 credits must be at the 300/400 level 1-3

Additional political science electives to reach 36 credits

Pre-Law Cognates (40 credits)

CS101	Intro. to Microcomputer Applications	3
EN220	Advanced Composition	
	or	3
EN221	Creative Writing	
HS	Sequence*	8
LA102	Legal Research and Case Analysis	3
LA202	Legal Writing and Analysis	3
OA119	Accounting Procedures	
	or	4
AC132	Principles of Accounting I	
PL205	Logic	3
SD302	Argumentation and Advocacy	3
PS211	Political Science Research and Statistics	4

**One full-year history sequence (HS 101-102 or HS 131-132) is recommended.*

Two law courses from the following:

	Any Legal Assistant (LA) courses	
CJ319	Substantive Criminal Law	3
CJ409	Procedural Criminal Law	3
BA254	Business Law I	3
BA255	Business Law II	3

General Education Requirements 33

Bachelor of Arts Cognates
One Year of a Foreign Language 8

Bachelor of Science Cognates
A minimum of nine credits from the following:

EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	3
SO213	Introduction to Anthropology	3

Bachelor of Arts or Bachelor of Science: Political Science — Pre-Law *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
PS110	Intro. to American Government and Politics	4	PS120	Intro. to Legal Processes	3
	History Sequence Elective	4		History Sequence Elective	4
SA100	How to Succeed in College	1	Nat Sci	Elective	3
		15		Elective	3
					16
Second Year					
EN210	Research Paper Process*	3	HU252	Humanities II	4
HU251	Humanities I	4	PS130	Intro. to State and Local Government	4
PS222	Intro. to the Legal Profession	2	PS211	Political Science Research and Statistics	4
CS101	Intro. to Microcomputer Appl.	3		Elective	1
BA/BS	Cognate	3	BA/BS	Cognate	3
		15			16
Third Year					
PS	Dist Elective	3	Pol Sci	Dist Elective	3
LA102	Legal Research & Case Analyis	3	Pol Sci	Elective	3
EN220	Advanced Composition	3	SD302	Argumentation & Advocacy	3
OA119	Accounting Procedures	4	PL205	Logic	3
Nat Sci	Elective	3	BA/BS	Cognate	3
		16			15
Fourth Year					
PS491	Senior Seminar I	3	PS492	Senior Seminar II	3
LA202	Legal Writing & Analysis	3		Law Elective	3
PS467	Constitutional Law and Civil Liberties	4	Pol Sci	Dist Elective	4
	Law Elective	3		Elective	3
	Elective	3		Elective	2
		16			15

**May be taken in spring semester.*

Bachelor of Science: Political Science — Public Administration

The public administration concentration is most appropriate for students planning to work in an administrative capacity in public agencies or nonprofit organizations with public missions. Students who choose this option are preparing for careers of public service. Such careers may be pursued through positions in government agencies at the local, state or provincial, and national levels. Other positions may be found in nonprofit organizations involved in public concerns, such as Common Cause, the Environmental Defense Fund and the Michigan Health Council. Some of these careers of public service may be pursued with only a bachelor's degree. Others may require completion of a master's degree in public administration or a related field.

Senior public administration students will complete an internship as part of their education. Internships allow students to apply the knowledge they have gained in the classroom in an on-the-job setting. They are also valuable for developing a record of experience that will impress prospective employers and help the student become established in a career. Internships, which are arranged with the assistance of an advisor, are available with local, state or provincial, and federal agencies.

Political Science Courses (37 credits)

PS110	Intro. to American Government & Politics	4
PS130	Intro. to State and Local Government	4
PS201	Intro. to Public Administration	3
PS301	Policy Analysis & Evaluation	4
PS401	Prin. of Public Administration	3
PS491-492	Senior Seminar I & II	6
PS499	Political Science/Public Administration Internship	3

A minimum of one course in each of the following areas: 10-12

Comparative Politics
(PS160, 331, 334)
International Relations
(PS241, 411, 420)
Political Philosophy
(PS351, 352)

Public Administration Cognates (34 credits)

CS101	Intro. to Microcomputer Appl.	3
EC201	Principles of Macroeconomics	3
EC305	Public Finance	3
HS	Sequence*	8
MN360	Principles of Management	3
MN365	Human Resource Management	3
OA119	Accounting Procedures	4
PS211	Political Science Research and Statistics	4
PY228	Organizational Behavior *or*	4
SO313	Work and Organizations	
SD302	Argumentation & Advocacy *or*	3-4
SD320	Public Relations	

General Education Requirements 33

**One full-year history sequence (HS131-132) is recommended*

Bachelor of Science: Political Science — Public Administration *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
PS110	Intro. to American Government and Politics	4	PS130	Intro. to State and Local Government	4
	History Sequence Elective	4		History Sequence Elective	4
	Natural Science Elective	4		Natural Science Elective	4
SA100	How to Succeed in College	1		Elective	1
		16			16
Second Year					
EN210	Research Paper Process*	3		Natural Science Elective	3
HU251	Humanities I	4	HU252	Humanities II	4
PS201	Intro. to Public Administration	3	Pol Sci	Dist Elective	4
CS100	Intro. to Microcomputer Appl.	3	PS211	Political Science Research & Statistics	4
	Elective	3		Elective	1
		16			16
Third Year					
Pol Sci	Dist Elective	3	PS301	Policy Analyis & Evaluation	4
OA119	Accounting Procedures	4	SD320	Public Relations	4
EC201	Intro. to Macroeconomics	3	MN360	Principles of Management	3
PY228	Organizational Behavior	3		Elective	3
	Elective	3		Elective	2
		16			16
Fourth Year					
PS491	Senior Seminar I	3	PS492	Senior Seminar II	3
PS401	Prin. of Public Administration	3	PS499	Political Science/Public Administration Internship	3
EC305	Public Finance	3	Pol Sci	Dist Elective	3
MN365	Human Resource Management	3		Elective	3
	Elective	3		Elective	3
		15			15

**May be taken in spring semester.*

Pre-Law

No single prescribed course of study can be recommended to all students who plan to attend law school. Students entering law school choose undergraduate majors from a wide variety of fields. However, a pre-law concentration is offered in the political science curriculum, and various law courses are offered as a part of the legal assistant studies program at Lake Superior State University. See the appropriate political science and legal assistant studies program listings.

Students interested in a legal career should consult with the pre-law advisor early and often during their undergraduate studies. Pre-law planning, based on consultation with the advisor, will allow the student to make an informed choice of curriculum and of elective courses that will help with the development of the skills mentioned below. The pre-law advisor will also provide pre-law students with a variety of materials about admission to law school, the law school admission test, and careers in law.

A student's undergraduate grade point average and his or her score on the Law School Admission Test (LSAT) are the two most important criteria for admission to law school. Details on admission policies of law schools throughout the country, and the degree to which these schools may use other criteria in addition to grade point average and LSAT score, may be found in the **Pre-Law Handbook**. This handbook is published by the Law School Admission Council/ Law School Admission Services and is the official law school guide. It may be examined by contacting the pre-law advisor or purchased in many book stores.

Although there is no prescribed major which must be taken for admission to law school, some curricula may be better than others in helping students develop skills necessary for admission and for a successful legal career. A broad and challenging undergraduate curriculum is the best preparation. The **Pre-Law Handbook** stresses that a student's undergraduate education should lead to the development of skills in three areas: (1) the ability to understand and express oneself well in words, (2) the development of a critical understanding of the human institutions and values with which the law deals, and (3) the development of critical thinking abilities. A pre-law student should consider the need to develop these skills in selecting his or her curriculum. In addition, students should consider whether the curriculum they choose can provide an alternative to a career in law should they eventually choose not to pursue a legal career.

Associate Degree: Legal Assistant Studies

For this degree, students must complete the courses below, the general education requirements for associate degrees, and electives to total 64 credits.*

Students completing the associate degree in legal assistant studies may conveniently continue their education in a bachelor's degree in legal assistant studies or other fields such as office administration, human services or political science. Those interested in this option should consult the legal assistant studies advisor.

Required Courses (53 credits)

EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fundamentals of Speech	3
LA102	Legal Research and Case Analysis	3
LA125	Civil Litigation and Procedure	4
LA140	Personal Injury Litigation & Investigative Techniques	3
LA150	The Legal Assistant Profession & Ethical Considerations	3
LA202	Legal Writing & Analysis	3
LA250	Law Office Management, Systems & Technology	3
LA320	Real Estate Law	3
LA321	Family Law	2
LA322	Probate Law and Procedure	3
BA254	Business Law I	3
BA255	Business Law II	3
CJ319	Substantive Criminal Law	3
OA119	Accounting Procedures	4
PS110	Intro. to American Government & Politics	4

Cognate Required (3 credits)

DP225	Word Processing Techniques	
	or	
DP150	Applied Computer Applications	3
	or	
CS101	Intro. to Microcomputer Applications	

Elective: (8 credits)**
Electives are to be chosen in consultation with advisor.

**Note:* The legal assistant associate degree requires two credits in social science, natural science or mathematics beyond those for general education. These requirements may be fulfilled from the students' electives.

***Note:* Students may wish to apply some elective credits to the Legal Assistant Internship and Professional.Development Seminar (LA299) in their sophomore year.

Associate Degree: Legal Assistant Studies *(sample schedule*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	LA125	Civil Litigation & Procedure	4
LA102	Legal Research & Case Analysis	3	LA140	Personal Injury Litigation & Investigative Techniques	3
LA150	The Legal Assistant Profession & Ethical Considerations	3	PS110	Intro. to American Government and Politics	4
SD101	Fundamentals of Speech	3		Cognate	3
OA119	Accounting Procedures	4		Electives	2
		16			16
Second Year					
EN210	Research Paper Process*	3	LA322	Probate Law and Procedure	3
LA202	Legal Writing & Analysis	3	BA255	Business Law II	3
LA320	Real Estate Law	3	LA250	Law Office Management, Systems and Technology	3
LA321	Family Law	2		Electives	6
BA254	Business Law I	3			15
CJ319	Substantive Criminal Law	3			
		17			

**May be taken fall or spring semester.*

Department of Psychology

Bachelor of Arts/Bachelor of Science: Psychology

Psychology is the systematic study of methods to understand, predict and influence human behavior and mental processes. The major provides students with exposure to the areas that define contemporary scientific psychology. The psychology major helps a student develop analytical thinking and communication skills which are applicable to a variety of careers. Many psychology majors pursue graduate degrees. Psychology electives enable students to construct a program of study consistent with their professional goals. The bachelor of science and bachelor of arts degrees differ only in the nature of the cognate courses that are selected. The bachelor of science degree requires science courses and the bachelor of arts degree requires foreign language courses.

Total Departmental Credits Required: 41

Required Psychology Credits (35 credits)

PY101	Introduction to Psychology	4
PY210	Statistics	3
PY212	Experimental Psychology	3
PY311	Learning and Motivation	3
PY357	Personality Theory	3
PY396	Tests and Measurements	3
PY456	History & Systems of Psychology	3
PY457	Cognition	3
PY459	Physiological Psychology	3
PY498	Senior Research I	3
PY499	Senior Research II	4

Elective Psychology Credits (6 credits)

PY	Elective - any level	3
PY217	Social Psychology *or*	
PY259	Abnormal Psychology *or*	3
PY265	Child & Adolescent Behavior	

Cognate

Bachelor of Arts Degree

One Year of Foreign Language 8

Bachelor of Science Degree

Eight credits from the following: biology, chemistry and physical science beyond those used to fulfill general education requirements; mathematics at the level of MA111 and above (except MA207); any CS or DP courses; PL204, PL205, HS235.

General education and electives

Students must complete all general education requirements including BL105. Students must take sufficient electives to total 124 semester credits.

Acceptable Minors:

Psychology majors may select an approved minor (21 credits) or may complete 21 credits in courses approved in lieu of the minor by their advisor. Nine credits must be at the 300-400 level.

Bachelor of Arts: Psychology *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
	Foreign Language	4	PY212	Experimental Psychology	3
PY101	Introduction to Psychology	4		Foreign Language	4
PY210	Statistics	3		Physical Science	4
BL105	Function of the Human Body	4	MA	Elective 100+ Level	2-4
		18			16-18
Second Year					
EN210	Research Paper Process*	3	PY	Elective	3
	Minor Course	3		Minor Course	3
PY311	Learning & Motivation	3	PY396	Tests & Measurements	3
PY357	Personality Theory	3		Minor Course	3
NS	Elective	4	PY	Designated Elective	3
		16			15
Third Year					
PY459	Physilogical Psychology	3	PY457	Cognition	3
	HU or elective	3-4		HU or Elective	3-4
	Minor Courses	6		Minor Courses	6
	Elective	3		Elective	3
		15-16			15-16
Fourth Year					
PY498	Senior Research I	3	PY499	Senior Research II	4
PY456	History & Systems of Psychology	3		Electives	10
	Minor Course	3			14
	Electives	3-6			
		12-15			

**May be taken fall or spring semester.*

Bachelor of Science: Psychology *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
PY101	Introduction to Pschology	4	PY	Elective	3
PY210	Statistics	3	PY212	Experimental Psychology	3
BL105	Function of the Human Body	4		Natural Science	4
MA	Elective 100+ level	2-4	MA	Elective 100+ level	3-4
		16-18			15-17
Second Year					
EN210	Research Paper Process*	3	PY	Designated Elective	3
	Minor Course	3		Minor Course	3
PY311	Learning & Motivation	3	PY396	Tests & Measurements	3
PY357	Personality Theory	3		Electives	3
	Cognate Course	3		Physical Science	3
		15			15
Third Year					
PY459	Physiological Psychology	3	PY457	Cognition	3
HU	Humanities	4	HU	Humanities	4
	Minor Courses	6		Minor Courses	6
	Elective	3		Elective	3
		16			16
Fourth Year					
PY498	Senior Research I	3	PY499	Senior Research II	4
PY456	History & System of Psycghology	3		Electives	11
	Minor Course	3			15
	Electives	6			
		15			

**May be taken fall or spring semester.*

Bachelor of Arts/Bachelor of Science: Social Science

Students who elect either of these programs should become more effective citizens for tomorrow and develop skills useful in various employment areas, both in the public and private sectors. Both curricula allow a large number of electives and a great deal of flexibility for the mature student.

The programs of study provide both depth and breadth in the social sciences (economics, geography, history, political science, psychology and sociology), as well as providing opportunities for specialization in areas of interest to the student.

Major Area Requirements:

Introductory Sequences **27-31**

Students must select four full-year introductory sequence courses from the following six areas:

Economics	6
Geography	8
History	8
Political Science	8
Psychology	7
Sociology	6

Lower-Level Courses from the Six Areas of the Major9

Students must choose at least nine credits from the 100-200 level in the six areas.

Upper-Level Courses from the Six Areas of the Major21

Students must choose 21 credits from the 300-400 level offerings in the six areas. No more than 12 credits can be in any one discipline.

Methodology Courses 5-7
Students choose two courses from SO302, PY210, PY212, HS496.

Minor or Cognate: To earn a bachelor of arts degree, students must take eight credits of a foreign language as well as an additional 12 approved credits from English, humanities, speech, journalism or philosophy (beyond general education requirements).

For a bachelor of science degree, students will take an approved minor in natural science or social science (20-28 credits).

General Education and Electives: Students must complete all the general education requirements and electives to total 124 semester credits.

Bachelor of Arts: Social Sciences *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
	Intro Sequence I	3-4		Intro Sequence I	3-4
NS	Elective	3	NS	Elective	3
	Intro Sequence II	3-4		Intro Sequence II	3-4
	First Year Foreign Language	4		First Year Foreign Language	4
		16-18			16-18
Second Year					
EN210	Research Paper Process*	3		Social Sci Electives	6
	Intro Sequence III	3-4		Intro Sequence III	3-4
	Intro Sequence IV	3-4		Intro Sequence IV	3-4
NS	Elective	3		Elective	3
		13-14			15-17
Third Year					
	Cognate/Minor	3		Cognate/Minor	3
HU	Elective	4	HU	Elective	4
	Methodology Course	3		Methodology Course	3
EN/HU/JR/SD	Elective	3	EN/HU/JR/SD	Elective	3
	Elective	3		Elective	3-6
		16			16-19
Fourth Year					
	Electives (if needed)	3		Electives (if needed)	3-5
EN/HU/JR/SD	Electives	9	SS	Electives	9
	Cognate/Minor	3-4		Cognate/Minor Course	3-4
		15-16			15-18

**May be taken fall or spring semester.*

Bachelor of Science: Social Sciences *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
	Intro Sequence I	3-4		Intro Sequence I	3-4
NS	Elective	4	NS	Elective	4
	Intro Sequence II	3-4		Intro Sequence II	3-4
	Cognate/Minor	3-4		Cognate/Minor	3-4
		16-19			16-19
Second Year					
EN210	Research Paper Process*	3	Soc Sci	Electives	6
	Intro Sequence III	3-4		Intro Sequence III	3-4
	Intro Sequence IV	3-4		Intro Sequence IV	3-4
	Elective	3		Elective	3
		13-14			16-17
Third Year					
	Cognate/Minor	3		Cognate/Minor	3
HU	Elective	4	HU	Elective	4
	Methodology Course	3		Methodology Course	3
Soc Sci	Elective	3	Soc Sci	Elective	3
		16		Elective	3-6
					16-19
Fourth Year					
	Electives (if needed)	3		Electives (if needed)	3-5
Soc Sci	Electives	9	Soc Sci	Elective	9
	Cognate/Minor	3-4		Cognate/Minor Course	3-4
		15-16			15-18

**May be taken fall or spring semester.*

Department of Sociology

Sociology is the scientific study of human social groups, from families to societies. Sociologists or students of sociology examine how variables such as the culture, laws and customs of a society influence individuals within that society. Sociologists also investigate how individuals influence and change society.

The knowledge acquired through the study of sociology is useful in a number of careers, including human services, law enforcement, corrections, business administration and public administration, among others.

For those students who plan a career in sociology, teaching or conducting research, an undergraduate major in sociology provides a good background for graduate work in sociology.

Bachelor of Arts/ Bachelor of Science: Sociology

1. Required Sociology Credits (31 hours)
The sociology major consists of 22 credit hours of **core** courses and nine credit hours of sociology electives.

Core (22 hours)
Major courses required in sociology are:

SO101	Introduction to Sociology	3
SO238	Social Psychology	3
SO202	Social Research Methods	3
SO302	Statistics for Social Science	4
SO303	Contemporary Sociological Theory	3
SO403	Development of Sociological Theory	3
SO405	Seminar: Current Sociological Issues	3

Elective Sociology Credits (9 hours)

Students must select an additional nine hours of sociology courses. No more than three hours may be SO/SW courses. At least three hours must be at the 300/400 level.

2. Minor or other Cognate (20 hours)
Choose one of the following two alternatives. At least six credit hours must be at the 300 or 400 level.

Minor: Students may complete an approved minor. This minor could be in sociology, giving the student a double concentration which provides a solid background for graduate work in sociology. Otherwise, the minor may be any approved minor at the University.
or
An approved concentration: The student may develop an approved concentration in one or more disciplines in consultation with their advisor.

3. General Education: All bachelor degree students must complete the general education requirements.

4. Bachelor of science and bachelor of arts requirements: The student selects one of the following alternatives.
Bachelor of Science
No additional courses
or
Bachelor of Arts
The student must complete one year of a foreign language (8 hours)

5. Students must take sufficient electives to total 124 semester credits.

Bachelor of Arts: Sociology *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SO102	Social Problems	4
SO101	Introduction to Sociology	3	NS	Elective	4
NS	Elective	4	SD101	Fundamentals of Speech	3
	Cognate or Elective	3		Cognate or Elective	3
		13			14
(Complete math proficiency, if necessary, during first year.)					
Second Year					
EN210	Research Paper Process*		SO202	Sociological Research Methods	3
	or	3	SO238	Social Psychology	3
EN215	Intro. to Literature & Research*			Cognate or Elective	5
	Sociology Course	3	HU	Elective	4
	Cognates or Electives	6			15
HU	Elective	4			
		16			

Third Year

SO302	Statistics for Social Sciences	4		Sociology Course	3
SO303	Contemporary Sociological Theory	3		Cognates or Electives	9
	Cognates or Electives	5		First Year Foreign Language II	4
	First Year Foreign Language I	4			16
		16			

Fourth Year

SO402	Honors Sociological Research	3	SO403	Development of Sociological Theory	3
	Cognates or Electives	14	SO405	Seminar: Current Sociological Issues	3
		17		Cognates or Electives	11
					17

**May be taken fall or spring semester.*

Bachelor of Science: Sociology *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SO102	Social Problems	4
SO101	Introduction to Sociology	3		Elective	4
NS	Elective	4	SD101	Fundamentals of Speech	3
	Cognate or Elective	3		Cognate or Elective	3
		13			14

(Complete math proficiency, if necessary, during first year.)

Second Year

EN210	Research Paper Process*		SO202	Sociological Research Methods	4
	or	3	SO238	Social Psychology	3
EN215	Intro. to Literature & Research*			Cognates or Electives	3
	Sociology Course	3	HU	Elective	4
	Cognates or Electives	6	NS	Elective	4
HU	Elective	4			17
		16			

Third Year

SO302	Statistics for Social Sciences	4		Sociology Course	3
SO303	Contemporary Sociological Theory	3		Cognates or Electives	9
	Cognates or Electives	6		Elective	4
	Electives	4			16
		17			

Fourth Year

SO402	Honors Sociological Research	3	SO403	Development of Sociological Theory	3
	Cognates or Electives	14	SO405	Seminar: Current Sociological Issues	3
		17		Cognates or Electives	8
					14

**May be taken fall or spring semester.*

Bachelor of Science: Human Services

The human services major allows students to combine functional competencies with an academic preparation in psychology or sociology. Students complete three minors. One of the three must be the coordinating minor selected from

either psychology or sociology. All skill minors require a practicum or internship. A total of 9-16 credits of practicum must be completed between the two skill minors. No more than 16 credits of practicum may be counted for the degree. The general education requirements must also be completed.

The acceptable skill minors are:
1. Child Development
2. Corrections
3. Counseling
4. Gerontology
5. Human Services Administration
6. Industrial Relations
7. Law Enforcement
8. Legal Assistant Studies
9. Native American Studies
10. Recreation Studies
11. Social Work
12. Substance Abuse Counseling

Students should consult the descriptions of the skill minors for detailed information. Transfer students who have completed the equivalent of a skill minor at another college or university may request a waiver of one skill minor.

Note: If the substance abuse counseling minor and the counseling minor are both selected, the student must choose nine credits from the following list of courses. At least six of the credits must be at the 300-400 level. These courses do not apply toward satisfying the coordinating minor requirements.

HM480	Grantwriting	3
PY217	Social Psychology	3
PY228	Organizational Behavior	3
PY240	Behavior Management	3
PY259	Abnormal Psychology	3
PY311	Learning & Motivation	3
PY357	Personality Theory	3
PY383	Industrial Psychology	3
PY385	Health Psychology	3
PY457	Cognition	3
PY459	Physiological Psychology	3
SO103	Cultural Diversity	3
SO214	Criminology	3
SO226	Races & Minorities	3
SO242	Sociology of Sex	3
SO321	Sociology of Women	3
SO327	The Sociology of Dying & Death	3
SO338	Deviance	3

New students may register as pre-human services majors and may concurrently enroll in a liberal arts associate degree program in either psychology, sociology or in one of the skill minors. Special associate degree programs exist for early childhood education, corrections, legal assistant studies and substance abuse prevention and treatment. Students may apply for admission to the human services major after completing 12 credits of human services or social sciences coursework or after completing an associate degree or Canadian college diploma in a human services area. Students considering graduate school are encouraged to select a double major in either psychology and human services or sociology and human services.
Human services majors must be ethical, caring individuals who are capable of forming helping relationships with others and serving as good role models. As part of the admissions process, students will be asked to volunteer in human service agencies and to explore their own appropriateness to enter the human service field.

Students need 24 credits of 300-400 level courses across their 3 minors, and all students must complete a capstone course from the following list:

CJ401	Senior Seminar
HM480	Grantwriting
LA450	Advanced Legal Writing & Interviewing Seminar
PY498	Senior Research I
SO402	Honors Sociological Research

Associate Degree: Substance Abuse Prevention and Treatment

This associate degree program provides training in substance abuse counseling to prepare students for paraprofessional roles in hospitals, treatment centers and substance abuse prevention programs. Students are required to be good role models for the clients they will serve.

The associate degree can be completed in two years of full-time study and requires an extensive practicum placement. Practicum placements may be completed outside the local area. Placements are available in hospitals, out patient programs, assessment centers, detoxification units, long term treatment centers, prevention programs and specialized programs in schools or in corrections settings. All placements require the Fundamentals of Substance Abuse Counseling credential. The test for this credential is offered through the Michigan Office of Substance Abuse Services.

Students completing the associate degree may apply to continue in the B.S. in human services program to qualify for entry-level counseling positions.

Students completing the associate degree in substance abuse prevention and treatment may conveniently continue their education in the bachelor's degree in human services or other fields such as psychology, sociology or corrections. Students interested in these options should consult the chair of the appropriate discipline.

Required Courses:		
EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fundamentals of Speech	3
BL105	Function of the Human Body	4
HM204	Fundamentals of Drug Abuse	3
HM250	Human Services Practicum	9
HM292	Alcohol Abuse Prevention & Treatment	3
SO242	Sociology of Sex	3
SO341	Addiction	3
SO344	Social Welfare Systems	3
PY101	Introduction to Psychology	4
PY201	Commununication Skills in Counseling	3
PY259	Abnormal Psychology	3

Cognate - Required		
SO225	Native Cultures of North America	
	or	3
SO103	Cultural Diversity	
PY291	Group Counseling	
	or	3
PY391	Family Therapy	

Electives
General education requirements and sufficient electives must be completed to total a minimum of 64 semester credits.

Total Credits Required: 64

Associate Degree: Substance Abuse Prevention and Treatment *(sample schedule)*

FALL			**SPRING**		
First Year					
EN110	Freshman Composition*	3	PY201	Communication Skills in Counseling	3
BL105	Function of the Human Body	4	PY259	Abnormal Psychology	3
HM204	Introduction to Drug Abuse	3	HM292	Alcohol Abuse Prevention and Treatment	3
PY101	Introduction to Psychology	4	SO242	Sociology of Sex	3
	Elective	3	SO341	Addiction	3
		17			15
Second Year					
EN210	Research Paper Process*	3	HM250	Human Services Practicum	9
SD101	Fundamentls of Speech	3	PY291	Group Counseling	
SO225	Native Cultures of North America			*or*	3
	or	3	PY391	Family Therapy	
SO103	Cultural Diversity		SO344	Social Welfare System	3
	Electives	8			15
		17			

**May be taken fall or spring semester.*

Minor Courses of Study

Art Minor

Students must complete 20 semester hours of credit.

Required Courses:

AT110	Fundamentals of Drawing and Composition	3
AT111	Painting Composition and Design	3
AT210	Drawing, Painting and Composition	3
AT211	Graphic Arts, Watercolor and Mixed Media	3
AT250	Art History & Appreciation I	4
AT251	Art History & Appreciation II	4

Business French Minor

Students must complete 28 semester hours of credit.

Required Courses:

FR151	First Year French I	4
FR151	First Year French II	4
FR251	Second Year French I	4
FR252	Second Year French II	4
FR351	Advanced Conversation and Composition I	3
FR352	Advanced Conversation and Composition II	3
FR353	Business French I	3
FR354	Business French II	3

Child Development

Recommended for students in human services (and other fields) who plan to enter careers working on behalf of young children. It is particularly relevant for those anticipating agency work in areas such as adoptions, child custody and social work. The following 29 credit hours of courses must be completed:

ED101	Foundations of Early Childhood Education	3
ED105	Child Guidance & Welfare	3
ED110	Curriculum Development and Teaching Practices	3
ED111	Infants and Toddlers: Developmentally Appropriate Practices	3
ED220	Early Childhood Literature	3
ED260	Practicum I	4
PY155	Lifespan Development	3
PY301	Exceptional Child and Adolescent	3
HE104	Nutrition for Early Childhood	3
HE181	First Aid	1

Communications Minor

Students must complete 22 semester hours of credit in addition to basic requirements of composition and speech (SD101). This minor may be used as a teaching minor.

Required Courses:

SD201	Small Group Communication	
	or	3
SD225	Interpersonal Communication	
SD211	Advanced Public Speaking	
	or	3
SD210	Business & Professional Speaking	
SD302	Argumentation & Advocacy	3
SD307	Classical/Contemporary Rhetoric	
	or	3
EN321	Rhetoric & Composition Theory	
SD308	Communication Theory	3
SD325	Organizational Communications	3
SD416	Communication in Leadership	3

Counseling Minor

The skill minor in counseling provides introductory training in individual, group and family counseling. Students generally seek employment in government agencies, social service agencies, hospice care, employment programs, youth services, child welfare agencies and agencies serving the mentally ill. The minor does not provide certification as a school counselor.

Practicum placement may be completed locally or in any approved setting. Practicum students must be able to meet the personal and ethical requirements of workers in their practicum site and must be good role models for the clients they serve.

Total Credits Required: 21

Required Courses:

PY155	Lifespan Development	3
PY201	Communication Skills in Counseling	3
PY396	Tests and Measurements*	3
SO344	Social Welfare Systems	3
HM250	Human Services Practicum	3
BL105	Function of the Human Body**	4
PY259	Abnormal Psychology***	
	or	3
SO338	Deviance***	
PY291	Group Counseling	
	or	3
PY391	Family Therapy	
PY240	Behavioral Management	
	or	3
PY385	Health Psychology	

**Because of prerequisite to PY396, students must choose one of the following as part of coordinating minor or electives:*

PY210	Statistics (already required by PY minors)	3
SO302	Argumentation & Advocacy (counts toward SO minors)	3
MA207	Prin. of Statistical Methods	3

***May count toward general education.*

****May count toward SO/PY minor.*

Students seeking the B.S. in human services degree who select both this minor and the substance abuse minor will note that there is a great deal of overlap between the minors. Therefore, these students must select three courses (two at the 300-400 level) from the following list of courses:

HM480	Grantwriting	3
PY217	Social Psychology	3
PY228	Organizational Behavior	3
PY240	Behavior Management	3
PY259	Abnormal Psychology	3
PY311	Learning & Motivation	3
PY357	Personality Theory	3
PY383	Industrial Psychology	3
PY385	Health Psychology	3
PY457	Cognition	3
PY459	Physiological Psychology	3
SO214	Criminology	3
SO103	Cultural Diversity	3
SO242	Sociology of Sex	3
SO321	Sociology of Women	3
SO327	Sociology of Dying & Death	3
SO338	Deviance	3

English Language and Literature Minor

Students must complete 21 semester hours of credit in addition to the general education requirements of composition and speech.

Required Courses:

EN233	English Literature I	3
EN234	English Literature II	3

Fifteen (15) additional credits from the following courses:

EN220	Advanced Composition	3
EN221	Creative Writing	3
EN231	American Literature I	3
EN232	American Literature II	3
EN235	Survey of Native American Literature	3
EN320	Responding to Writing	3
EN321	Rhetoric and Composition Theory	3
EN322	Structure of the English Language	3
EN330	Development of the Novel in England & America I	3
EN331	Development of the Novel in England & America II	3
EN332	The Short Story	3
EN333	Studies in the Drama: The Genre and Theatre in Context	3
EN334	Approach to Poetry	3
EN335	Children's Literature	3
EN420	History of the English Lanaguage	3
EN421	History of Literary Criticism	3
EN430	Chaucer	3
EN431	Milton and the Metaphysical Poets	3
EN432	Shakespeare	3
EN433	Seminar in Major American & English Writers	3
EN450	Directed Individual Study	3
HU256	Introduction to Film: Images Of our Culture	3

English Language and Literature Teaching Minor

Students must complete 21 semester hours of credit in addition to the general education requirements of composition and speech.

Required Courses:

EN231	American Literature I	3
	and	
EN232	American Literature II	3
	or	
EN233	English Literature I	3
	and	
EN234	English Literature II	3

Fifteen (15) additional credits from the following courses:

Six credits from:

EN220	Advanced Composition	3
EN221	Creative Writing	3
EN320	Responding to Writing	3
EN321	Rhetoric and Composition Theory	3
EN322	Structure of the English Language	3
EN420	History of the English Language	3

Nine credits from:

EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3
EN235	Survey of Native American Literature	3
EN330	Development of the Novel in England & America I	3
EN331	Development of the Novel in England & America II	3
EN332	The Short Story	3
EN333	Studies in the Drama: The Genre and Theatre in Context	3
EN334	Approach to Poetry	3
EN335	Children's Literature	3
EN430	Chaucer	3
EN432	Shakespeare	3

French Language and Literature Minor

This minor may be used as a teaching minor.

Students must complete 28 semester hours of credit.

Required Courses:

FR151	First Year French I	4
FR152	First Year French II	4
FR251	Second Year French I	4
FR252	Second Year French II	4
FR351	Advanced Conversation and Composition I	3
FR352	Advanced Conversation and Composition II	3
FR355	Survey of French Literature I	3
FR356	Survey of French Literature II	3

Geography Minor

This minor meets the needs of students aspiring to professional careers in business, government or planning agencies, or who wish to do university graduate work. It is strongly suggested that students pursuing professional careers complete MA207 statistical methods.

Total Credits Required: 20

Geography (15-17 credits)

GG106	Physical Geography: Landforms	4
GG108	Physical Geography: Meteorology and Climatology	4
GG302	Economic Geography	4
GG306	Cultural Geography	3
GG492	Individualized Studies in Geography	2-4

Geography electives to total 20 credits:

GG201	World Regional Geography	4
GG321	Geography of Europe and Great Britain	4
GG322	Geography of South America, Central America and the Caribbean Region	4
GG323	Geography of East and Southeast Asia	4
GG325	Regional Geography of North America	4
GG360	Historical Geography of Eastern North America	4

Geography Teaching Minor

Students must complete 21 semester hours of credits.

Required Courses:

NS105	Physical Geography: Earth, Sun and Water	3
NS107	Physical Geography Landforms and Soil	3
GG201	World Regional Geography	4
GG306	Cultural Geography	3

At least two courses from:

GG302	Economic Geography	4
GG321	Geography of Europe and Great Britain	4

GG322	Geography of South America, Central America and the Caribbean Region	4
GG323	Geography of East and Southeast Asia	4
GG325	Regional Geography of North America	4

Gerontology Minor

A minor course of study is offered in gerontology. This minor provides an educational foundation upon which the physiological, sociological and psychological changes that occur during the aging process are understood. This skill minor in gerontology provides students who are majoring in recreation management, therapeutic recreation, human services or other majors with course specialization in working with the aged in nursing homes, retirement homes, retirement villages and in community programs.

Total Credits Required: 23

Required Courses:

BL105	Function of the Human Body	4
PY155	Lifespan Development	3
RC101	Intro. to Recreation and Leisure Services	3
RC105	Program Development and Leadership in Recreation Leisure Services	3
RC295	Practicum	1
RC370	Recreation for the Elderly	3
SO326	The Sociology of Aging & Aged	3
SO327	The Sociology of Dying & Death	3

History Minor

Students are required to complete 21-22 semester hours of credit.

Required Courses:

HS101	History of World Civilization I	4
	and	
HS102	History of World Civilization II	4
	or	
HS131	United States History I	4
	and	
HS132	United States History II	4
HS496	Historical Methods	2
HS	300/400-Level History Elective	8

One Course from:

GG306	Cultural Geography	3
GG321	Geography of Europe and Great Britain	4
GG322	Geography of South America, Central America and the Caribbean Region	4
GG323	Geography of East and Southeast Asia	4
GG325	Regional Geography of North America	4
GG360	Historical Geography of Eastern North America	4

History Teaching Minor

Students are required to complete 22 semester hours of credits.

Required Courses:

HS101	History of World Civilization I	4
HS102	History of World Civilization II	4
HS131	United States History I	4
HS132	United States History II	4
HS440	The Declaration of Independence and the Constitution	4
HS496	Historical Methods	2

Suggested Additional Courses:

HS202	Renaissance, Reformation and Baroque Europe	4
HS230	Survey of American Indian History	4
HS310	Russia: From Underdeveloped State to Superpower	4
HS346	Canadian History	4
HS361	Latin America	4
HS371	Far East Civilization 1850-present	4
GG306	Cultural Geography	3
NS105	Physical Geography: Earth, Sun and Weather	3
NS107	Physical Geography: Landforms and Soils	3
PS130	Intro. to State and Local Government	4

Human Services Administration Minor

This skill minor in human services administration offers training and experience in management, fiscal control, staff supervision and marketing in human service agencies. The minor recognizes that many agencies, especially in rural areas, are small and that

service providers may also share administrative tasks. Also, service providers in larger agencies may wish to prepare for advancement into administrative positions. Practicum placements may be completed outside the local area. Depending on the student's skill and interests, placements are available at state/provincial social services offices, child care centers, counseling agencies, tribal/band offices, treatment centers, family support agencies, corrections settings, etc.

Total Credits Required: 23

Required Courses:

SO344	Social Welfare Systems	3
MN365	Human Resource Management	3
DP	Elective	3
PS201	Intro. to Public Administration *or*	3
PY228	Organizational Behavior	
HM250	Human Services Practicum	3
AC230	Fundamentals of Accounting	4
MK281	Marketing Principles and Strategy	4

Humanities Minor

Students are required to complete 24 semester hours of credits.

Required courses:

HU251	Humanities I	4
HU252	Humanities II	4

Select 16 credits from the areas of study listed below; at least six, but not more than eight credits, must be taken in a single discipline, with no more than three credits in studio or performing classes. The remaining credits are to be distributed among at least three of the following areas: Spanish literature in translation (class is taught in English), history of drama, music, mythology, philosophy, art, world literature, film, second year of a foreign language (provided it is not used to satisfy any other requirement).

Japanese Study Minor

Students must complete the full-year program at the Japan Center for Michigan Universities. Enrollment in the program is based upon the requirement that the student be a full-time, tuition-paying student of LSSU. The center is located in Hikone, Japan, and it is their staff and resources that provide the courses for this minor. The minor consists of the following courses, totaling 24 semester hours: JS105-JS302. This sequence shall fulfill the one-year of foreign language required for a bachelor of arts degree. Students are strongly advised to take GG323.

Journalism Minor

This minor may be used as a teaching minor.

Students are required to complete 20 semester hours of credit.

Required courses:

JR210	Writing for the Mass Media	3
JR211	Print Newswriting	3
JR310	Electronic Editing and Production	3
JR410	Broadcast Newswriting	3
JR411	Broadcast Editing and Production	3

Elective Courses:

JR311	Supervising School Publications	3
EN220	Advanced Composition	3
EN221	Creative Writing	3
MK387	Advertising Theory and Practice	3
JR413	Directed Individual Studies	2

Journalism Writing Minor

Students are required to complete 24 semester hours of credits.

Required Courses:

EN220	Advanced Composition	3
EN221	Creative Writing	3
SD307	Classical/Contemporary Rhetoric	3
JR210	Writing for the Mass Media	3
JR211	Print Newswriting	3

Elective Courses:

JR410	Broadcast Newswriting	3
JR411	Broadcast Editing and Production	3
JR311	Supervising School Publications	3
EN320	Responding to Writing	3

JR310	Electronic Editing and Production	3
JR413	Directed Individual Studies	2

Legal Assistant Studies Minor

Students are required to complete 26 semester hours of credit.

Required Core Courses:

LA102	Legal Research and Case Analysis	3
LA202	Legal Writing & Analysis	3
LA125	Civil Litigation and Procedure	4
LA150	The Legal Assistant Profession & Ethical Considerations	3
OA119	Accounting Procedures *or*	4
PS110	Intro. to American Government and Politics	

Electives: Minimum of nine credits from the following courses (with six credits selected from 300-400 level courses):

LA140	Personal Injury Litigation & Investigative Techniques	3
LA250	Law Office Managemment, Systems & Technology	3
LA300	Seminar in Legal Assistant Studies	1-4
LA320	Real Estate Law	3
LA321	Family Law	2
LA322	Probate Law & Procedure	3
LA401	Evidence & Trial Practice	3
LA405	No-Fault Automobile Law	3
LA406	Worker's Disability Compensation Law	2
CJ319	Substantive Criminal Law	3
CJ409	Procedural Criminal Law	3
BA254	Business Law I	3
BA255	Business Law II	3

Native American Studies Minor

A minor is offered in Native American studies, requiring a minimum of 23 credits.

The Native American studies minor is appropriate for students majoring in a wide variety of disciplines who may or may not be Native American themselves. Students intending to eventually work in a Native American setting or who may often work with Native Americans are likely to benefit from the information and new perspectives gained from the experiences provided by the minor. The Native American studies minor is also appropriate for students who are simply interested in and wish to explore the Native American culture of our area. Individual courses within the Native American studies minor may be of interest and value to both full- and part-time students across the campus community.

Approximately 25 percent of the population in the local service area of Lake Superior State University is Native American. There is also a substantial number of Native Americans in the broader service region of the University, both in Michigan and Ontario. The Native American studies minor is designed to provide valuable background and current information about Native American culture and society.

The courses in the Native American studies minor reflect the Native American experience across time and throughout North America, but have a particular focus on issues which are of particular importance to Native Americans living in the Great Lakes area. Course content will include the study of Native American history, culture and literature. In addition, courses within the Native American studies minor will introduce students to the structure and operation of tribal governments and tribal law, as well as various current Native American issues and concerns.

The faculty for the Native American studies program may be contacted for further information.

This minor consists of the following courses:

Required Credits: 23

NA/SO225	Native Cultures of North America	3
SO103	Cultural Diversity	1
NA/HS230	Survey of American Indian History	4
NA/EN235	Survey of Native American Literature	3
NA/LA305	Tribal Law & Government	3
NA320	Contemporary Native American Issues	3

NA310	Seminar in Native American Studies	
	or	3
Approved Internship Course		

Elective Credit: 1

Political Science Minor

The student is required to complete 28 hours of credit.

PS110	Intro. to American Government & Politics	4
PS211	Political Science Research & Statistics	4

A minimum of one course in each of the following areas:13-16
American Politics
(PS325, 364, 367, 467)
Comparative Politics
(PS160, 331, 334)
International Relations
(PS241, 411, 420)
Political Philosophy
(PS351, 352)

Additional political science electives must be taken to reach 28 credits. A minimum of 12 credits must be at the 300/400 level. 4-7

Political Science Teaching Minor

Students are required to complete 20 semester hours of credit.

Required Course:

PS110	Intro. to American Government & Politics	4

Minimum of one course from each of the following areas: 15-16

American Government:

PS120	Intro. to Legal Processes	3
PS130	Intro. to State and Local Government	4
PS201	Intro. to Public Administration	3
PS301	Policy Analysis & Evaluation	4
PS325	Politics and Media	3
PS357	Politics of Violence	3
PS364	Political Parties, Interest Groups and Public Opinion	3
PS367	Congress and the Presidency	4
PS401	Prin. of Public Administration	3
PS467	Constitutional Law and Civil Liberties	4

Political Philosophy:

PS351	Political Philosophy I	4
PS352	Political Philosophy II	4

Comparative Politics:

PS160	Intro. to Canadian Government & Politics	3
PS331	Comparative Politics of Western Europe and Russia	4
PS334	Middle East Politics	3

International Relations:

PS241	Intro. to International Relations	4
PS247	Model United Nations	1
PS411	U.S. Foreign Policy I	3
PS420	Politics of the World Economy	4

Electives to Total: 21

A minimum of nine credits must be at the 300/400 level. Social Science majors must complete 21 credits beyond the required political science credits for their major anc PS211 political research and statistics is required.

Psychology Minor

The psychology minor provides students with a knowledge base for understanding and studying behavior.

Total credits Required: 22

Required Courses:

PY101	Introduction to Psychology	4
PY210	Statistics	3
PY212	Experimental Psychology	3
PY	Electives	6
PY	Elective at 300+ level	3
PY357	Personality Theory	
	or	
PY396	Tests & Measurements	
	or	3
PY457	Cognition	
	or	
PY459	Physiological Psychology	

Psychology Teaching Minor

The student is required to complete 22 semester hours of credit.

Required Courses:

PY101	Foundation of Psychology	4
PY210	Statistics	3
PY212	Experimental Psychology	3
PY357	Personality Theory	3
PY396	Tests & Measurements	3
PY457	Cognition	3
PY459	Physiological Psychology	3

ublic Administration linor

he student is required to complete 28 semester hours of credit.

Required Courses:

PS110	Intro. to American Government & Politics	4
PS130	Intro. to State and Local Government	4
PS201	Intro. to Public Administration	3
PS301	Policy Analysis & Evaluation	4
PS401	Prin. of Public Administration	3
PS499	Political Science/Public Administration Internship	3
EC201	Prin. of Macroeconomics	3
PS211	Political Science Research & Statistics	4

Public Relations Minor

The student is required to complete 21 semester hours of credit.

Required Courses:

SD202	Informative Speaking	
	or	3
SD302	Argumentation & Advocacy	
SD307	Classical/Contemporary Rhetoric	
	or	3
SD308	Communication Theory	
SD320	Public Relations	3
SD325	Organizational Communications	3
PS325	Politics & Media	3
JR210	Writing for the Mass Media	3
SD161	Probles in Speech/Drama	3

Recreation Studies Skill Minor

The student is required to complete 23-31 semester hours of credit.

Required Courses:

RC101	Intro. to Recreation and Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC295	Practicum	2-4
RC370	Recreation for the Elderly	3

Cognate Requirements:

ES140	Health and Fitness	3
PY155	Lifespan Development	3
SO327	Sociology of Aging & Aged	3
HM250	Human Services Practicum	3-9

Sociology Minor General

The student is required to complete 20 semester hours of credit.

Required Courses:

SO101	Introduction to Sociology	3
SO238	Social Psychology	3

Additional sociology courses to total a minimum of 20 hours, among which at least six hours are 300- or 400-level courses. 14

Sociology Social Work Minor

The student is required to complete 21-24 semester hours of credit.

The practicum may be taken for six or nine credits; nine credits are required when application for social work technician registration with State of Michigan is desired.

Required Courses:

SW110	Introduction to Social Work	3
SW201	Communication Skills in Counseling	3
SW250	Social Work Practicum	6-9
SW310	Clinical Practice and Diagnosis	3
SW344	Social Welfare Systems	3

One elective course from the following:

SW202	Social Research Methods	3
SW338	Deviance	3
SW341	Addiction	3

Sociology Teaching Minor

The student is required to complete 21 semester hours of credit.

Required Courses:

SO101	Introduction to Sociology	3
SO103	Cultural Diversity	3
SO102	Social Problems	3
SO238	Social Psychology	3

Choose one of the following:

SO325	Social Stratification	3
SO403	Development of Sociological Theory	3
SO302	Statistics for Social Science	4

Additional sociology electives to total 21 semester hours. At least nine credits must be at the 300/400 level.

Speech and Drama Minor

Students must complete 20 semester hours of credit in addition to composition and speech (SD101) from speech and drama offerings, or their equivalents. Those who wish both a major in English language and literature and a minor in speech and drama must take additional credit in English for any of the advanced courses which overlap in both programs.

Substance Abuse Counseling Minor

This skill minor prepares students to work in substance abuse settings and provides invaluable background for students planning to work in law enforcement, domestic violence or corrections settings. Students choosing this minor must be good role models for clients confronting and recovering from substance abuse problems. Students must obtain a Michigan Apprentice Counseling Certificate by successfully completing the Michigan Office of Substance Abuse Counseling Examination before applying for a practicum. Applicants for substance abuse counseling practicum must meet all ethical and personal qualifications for employment in a substance abuse prevention or treatment program.

Total Credits Required: 21

Required Courses:

HM204	Fundamentals of Drug Abuse	3
HM250	Human Services Practicum	3
HM292	Alcohol Abuse Prevention and Treatment	3
SO341	Addiction	3
PY201	Communication Skills in Counseling	3
PY396	Tests and Measurements*	3
PY291	Group Counseling *or*	3
PY391	Family Therapy	
BL105	Function of the Human Body**	4
PY259	Abnormal Psychology*** *or*	3
SO338	Deviance***	

**Because of prerequisite to PY396, students must choose one of the following as part of coordinating minor or electives:*

PY210	Statistics	3
	(already required by PY minors)	
SO302	Statistics for Social Science	4
	(counts toward SO minors)	
MA207	Prin. of Statistical Methods	3

***May count toward general education.*
****May count toward SO/PY minor.*

Students seeking the B.S. in human services degree who select both this minor and the counseling minor will note that there is a great deal of overlap between the minors. Therefore, these students must select three courses (two at the 300-400 level) from the following list of courses.

HM480	Grantwriting	3
PY217	Social Psychology	3
PY228	Organizational Behavior	3
PY240	Behavior Management	3
PY259	Abnormal Psychology	3
PY311	Learning and Motivation	3
PY357	Personality Theory	3
PY383	Industrial Psychology	3
PY385	Health Psychology	3
PY457	Cognition	3
PY459	Physiological Psychology	3
SO214	Criminology	3
SO103	Cultural Diversity	3
SO242	Sociology of Sex	3

SO321	Sociology of Women	3
SO327	The Sociology of Dying and Death	3
SO338	Deviance	3

Teaching Minor

Students are required to complete 21 semester hours of credit.

Required Courses:

TE150	Reflections on Learning	3
TE250	Human Diversity, Power and Opportunity in Social Institutions	3
TE301*	Learners, Learning, and Teaching in Context	4
TE401*	Teaching of Subject Matter to Diverse Learners	5
TE402*	Crafting Teaching Practice	6

**Subject to approval.*

Writing Minor

Students are required to complete 20 semester hours of credit.

Required Courses:

EN220	Advanced Composition	3
EN221	Creative Writing	3
EN321	Rhetoric & Composition Theory	3
JR210	Writing for the Mass Media	3
JR211	Print Newswriting	3

Elective Courses:

JR413	Directed Individual Studies	2
JR310	Electronic Editing and Production	3
EN320	Responding to Writing	3
MK387	Advertising Theory and Practice	3

Bachelor of Arts: Fine Art Studies

Offered in conjuntion with Algoma University College and Sault College of Applied Arts and Technology.

The bachelor of arts in fine art studies is an interdisciplinary program that relies on courses offered at Lake Superior State University as well as at Algoma University College and Sault College of Applied Arts and Technology. The program utilizes the faculty members, courses, and studio and research facilities of the three institutions to provide an integrated fine arts curriculum. The curriculum consists of six concentrations: music, writing, visual art, Native arts and culture, theatre, and advertising art and graphic design. These concentrations involve a sequence of a minimum of 21 credits to a maximum of 36 credits, beyond the first-year prerequisites, in which related subject matter is studied to develop a knowledge of a particular discipline.

The fine arts studies program requires the students to complete:

- 78 credit hours in at least three of the fine arts concentrations that form the constituent parts of this program
- two of the fine arts concentrations
- no more than 30 credits in studio and/or performance courses with no more than 15 in any one discipline
- FINA 4005E Student Project, which is intended to allow the student, with the approval of the supervising professor, the opportunity to integrate or synthesize some aspects of the refine arts in a single project

This degree will prepare graduates:

- for further studies in professional schools specializing in fine arts training
- for employment in the rapidly expanding arts, entertainment and communications industries; or
- to apply their enhanced talents as working artists.

LSSU students will remain enrolled in this University during their program of studies and will be eligible for financial aid. Participants in this program will be able to schedule courses at any of the participating institutions and earn credit at their home institution. The general education requirement applies to this program.

Additional information may be obtained from the School of Arts, Letters and Social Sciences.


SCHOOL OF BUSINESS

MASTER

Business Administration

BACCALAUREATE

Accounting
Business Administration
Finance and Economics

ASSOCIATE

Business Administration
Office Administration
Personal Computer Specialist
Technical Accounting

CERTIFICATE

Information Processing
Personal Computer Specialist

MINORS

Accounting-Finance
Economics
Economics-Finance
General Business
Health Care Administration
Human Resource Management
Marketing
Office Administration
Personal Computer Specialist

School of Business and Economics

Faculty: Professors Bruce T. Harger, Ann B. Marinoni, Madan Saluja; Associate Professors John Erkkila (chair), Robert C. Gaertner, John S. Hudson, Jean Lundin, Charles Meiser, Daniel Mugavero, Lynn Ryckman, Karl (Jim) Sherman; Assistant Professors Robert Marsh, Annette Ryckman, Linda Schmitigal, Scott Suneson.

Mission Statement

This department services students in identifying and achieving their goals. We do this by offering courses, programs of study, and advising. We serve traditional first-time-in-college and transfer students, as well as non-traditional students, on campus and at off-campus sites.

Students receive individual attention through academic advising and small class size. We teach and demonstrate ethical business conduct, business foundations, and current business concepts, technologies, trends and practices. Students learn skills in research, communications and critical thinking. We promote continuing professional development and association with professional and community groups.

Outcomes

- Graduates will demonstrate knowledge of business-core subjects. Graduates will know specific functional areas of business and how these areas are integrated. They will understand the economic, legal, political and global environment of business.
- Graduates will hold positions, including graduate study, in a field related to their educational goals.
- Graduates will demonstrate skills in research, communication and critical thinking.
- Graduates will demonstrate personal growth: a desire for lifelong learning, adaptation to change and curiosity.
- Graduates will demonstrate involvement in professional and community affairs.
- Graduates will demonstrate effective interpersonal skills.
- Graduates will lead moral and ethical lives.
- Graduates will appreciate the work ethic.

Master of Business Administration

Mission Statement

The master of business administration program offers general business education to students from diverse academic backgrounds. The program develops and enhances leadership skills for early and mid-career managers. Cultural

and international diversity characterizes the students. Students benefit from this diversity.

MBA faculty members believe that a quality program reflects the dynamic nature of business in a global economy. They continually assess and improve program focus and quality.

Outcomes

- Graduates will demonstrate knowledge of the common professional component. They will understand the economic, legal, political, cultural and global environment of business.
- Graduates will demonstrate skills in research, communication, teamwork and critical thinking.
- Graduates will advance in their professions.
- Graduates will demonstrate involvement in professional and community affairs.
- Courses will be offered at times convenient to students and consistent with program integrity.
- The MBA faculty will produce an annual assessment report.

Admission Requirements

Admission to the MBA program will be based on the following requirements:

1. possession of a recognized baccalaureate degree, comprising a minimum of 120 semester credits, from an accredited college or university.
2. two letters of recommendation, one preferably from an academic source and one required from an employer or supervisor.
3. completion of the application form.
4. official transcripts of all previous post-secondary work, with certified translations for non-English transcripts, from which an undergraduate grade point average (GPA) can be computed.
5. minimum points from Formula 1 or Formula 2 (next page), with additional restrictions on verbal and quantitative scores. All applicants must have scores reported for the Graduate Management Admissions Test (GMAT) taken within the past five years.
6. For students whose primary language is not English, the University may require the Test of English as a Second Language (TOEFL) as a diagnostic. English as a Second Language (ESL) support services will be made available to students who require additional English speaking, listening or reading skills.

Formula 1

Applicants must have a minimum of 1000 points using Formula 1 based on the GPA (4.0 scale) from the last 60 semester credits of undergraduate work [200 x GPA + GMAT score >= 1000].

Formula 2

Applicants must have a minimum of 950 points using Formula 2 based on the GPA (4.0 scale) for all undergraduate work [200 x GPA + GMAT score >= 950].

For full admission, minimum scores of 28 for the quantitative GMAT score

and, for candidates whose first language is English, 25 for the verbal GMAT score are required. Applicants who do not receive the minimum quantitative or verbal scores will be required to complete additional preparatory work for full admission.

Applicants who are denied admission may appeal to the Graduate Admissions Committee.

Application Procedure

Those seeking admission into the MBA program must complete the following steps.

1. Complete an application for admission and submit it with a $25 nonrefundable application fee (U.S. funds) to the Admissions Office.
2. Official transcripts of all undergraduate and graduate work should be requested to be sent to the Admissions Office directly by the institution from which credit was earned.

Those seeking admission must send the following to the Admissions Office:

3. Official copies of GMAT (Graduate Management Admission Test) scores, taken within the past five years.
4. Two letters of recommendation, one required from an employer.
5. For students whose first language differs from English, an official copy of the TOEFL (Test of English as a Foreign Language) score.

MBA Degree Requirements

Students must complete preparatory courses at the 500 level, or their undergraduate equivalents, and 36 semester credits at the 600 level to obtain the master of business administration degree. Consult with the School of Business to determine if an undergraduate course will meet a preparatory course requirement.

Preparatory Courses		**Credits**
EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
MB503	Business Law	3
MB508	Statistical Analysis	3
MB521	Financial Accounting	3
MB525	Business Finance	3
MB561	Organizational Theory	3
MB581	Marketing Concepts Applications	3
Total Preparatory Courses		**24**

600-Level Courses		**Credits**
MB604	Managerial Economics	3
MB608	Research Techniques	3
MB621	Managerial Accounting & Control	3
MB625	Financial Management	3
MB659	Administrative Policy	3
MB660	Organizational Behavior	3
MB681	Marketing Management	3
Total Common Prof. Component		**21**
600-Level Electives		15
Total 600-Level Requirement		**36**

Approved list of undergraduate courses acceptable as substitutes for 600-level electives up to a maximum of four credits.

EC304	Money & Banking	3
EC408	International Economics	3
MK381	Consumer Behavior	3
MK384	Physical Distribution	3
MK486	International Marketing	3
MN365	Human Resource Management	3

Course substitutions, waivers, transfer credit: Waivers of requirements and course substitutions can only be granted by the coordinator of the MBA program. Students should retain copies of waiver/substitution documentation for their

records. Waivers of preparatory courses are normally granted at the time of admission to the MBA program.

A maximum of 12 semester credits may be transferred from other institutions to meet 600-level course requirements. The credits must be at the graduate level, from an accredited institution, with a grade of 3.0 or higher, applicable to the MBA program, and have been earned within the six-year period prior to the student's admission. The coordinator of the MBA program must approve the transfer of credit. Students should provide course descriptions or syllabi when requesting transfer credit evaluations. Copies of documentation should be retained by students.

Program Length

All degree requirements must be completed within eight years from date of admission.

Grades

The following grades are awarded to MBA students:

A+	=	4.0	C-	=	1.7
A	=	4.0	D+	=	1.3
A-	=	3.7	D	=	1.0
B+	=	3.3	D-	=	0.7
B	=	3.0	F	=	0.0
B-	=	2.7	N	=	0.0
C+	=	2.3	I	=	0.0
C	=	2.0	Z	=	0.0

A minimum overall grade point of 3.00 (4.00 basis) is required with no more than six credits of "C" grades.

Students who earn a "D" or "F" grade will be immediately referred to the MBA Standards and Policy Committee for review. Courses with grades of "D" or "F" must be repeated or the student will not be eligible to graduate.

Guest Students

Students who have not been accepted formally into the MBA program are classified as guest students and may enroll in classes provided they have the necessary prerequisites. Students who wish to use credit earned as a guest student toward the executive MBA degree must apply and be accepted into the program. A maximum of six credits earned as a guest student may be applied toward the degree requirements. **No exceptions to this maximum will be allowed.**

Registration and Scheduling Information

Course registration and scheduling begins upon receipt of the scheduling bulletin each trimester. All registration and scheduling is processed through the Community Services and Development Office.

Drop/Refund Policy

Withdrawal: Students withdrawing from the University must complete a Withdrawal Form in the Fletcher Center to initiate a refund. Authorized refunds apply only to tuition and special course fees. For students on approved University financial aid, or aid through other agencies that mandate recovery of financial assistance, refunds will be in accordance with related requirements. Withdrawing students should check with the director of Financial Aid. Refunds are made according to the following: During the first six days of the semester 100 percent refund on withdrawals. Students withdrawing from all classes between the end of the 100 percent refund period and the first 10 percent of the semester will receive a 90 percent refund. Students withdrawing from all classes between the end of the 90 percent refund period and the 25 percent point of the semester will receive a 50 percent refund. Students withdrawing from all classes between the end of the 50 percent period and the 50 percent point of the semester will receive a 25 percent refund.

A Drop Slip must be processed through the Registrar-Scheduling Office. Courses dropped by the end of the eighth week of the semester will be assigned an N grade on the academic transcript.

Non-Credit Option

If desired, students may sign up for a course on a non-credit basis (without letter grade). Tuition remains at the same rate as the credit basis. This option must be selected at scheduling time and cannot be changed once the course has begun. Courses taken under this option do not count toward the MBA degree requirements. They do not affect the grade point average. Students who complete courses under the non-credit option may request a certificate of completion by contacting the Community Services and Development Office. This may be a practical option for guest students who are not taking the course for degree credit, but rather professional and/or personal development.

For more information, please contact the Community Services and Development Office.

Bachelor of Science: Accounting

The discipline of accounting provides financial and other information essential to the efficient conduct and evaluation of the activities of any organization. The information which accounting provides is essential for:

1. effective planning, control and decision-making by management, and
2. discharging the accountability of organizations to investors, creditors, government agencies, taxing authorities, association members, contributors to non-profit institutions and others.

Accounting includes the development and analysis of data, the testing of their validity and relevance, and the interpretation and communication of the resulting information to intended users. The data may be expressed in monetary or other quantitative terms, or in symbolic or verbal forms. This program is primarily for those students who may desire:

1. to enter the field of public accounting, or
2. a more intensive study of accounting.

The public accounting track meets the State of Michigan educational requirements qualifying students to sit for the certified public accountant's examination.

Department Requirements (61 credits)

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
AC232	Intermediate Accounting I	4
AC233	Intermediate Accounting II	4
AC332	Cost Accounting I	4
AC333	Cost Accounting II	4
AC334	Accounting Information Systems	3
BA211	Business Statistics	3
BA231	Business Communications	3
BA254	Business Law I	3
BA255	Business Law II	3
BA466	Business Policy	3
EC201	Prin. of Macroeconomics*	3
EC202	Prin. of Microeconomics*	3
FN341	Managerial Finance	4
MK281	Marketing Principles and Strategy	3
MN365	Human Resource Management	3
MA111	College Algebra**	3

**May count toward social science general education requirement.*
***May count toward B.S. degree requirement*

Students must complete an occupational focus in one of the following:

Public/CPA (18 credits)

AC421	Federal Taxation I	3
AC422	Federal Taxation II	3
AC427	Auditing	4
AC432	Advanced Accounting I	3
AC433	Advanced Accounting II	3
DP151	Lotus 1-2-3	2

Industrial/CMA (17-18 credits)

AC421	Federal Taxation I	3
AC427	Auditing	4
BA403	Business, Government and Society	3
DP151	Lotus 1-2-3	2
DP225	Word Processing Techniques	2
	or	
OA111	Keyboarding/Document Formatting I	3
MN464	Organizational Behavior	3

DP/Accounting (24-25 credits)

DP151	Lotus 1-2-3	2
DP151	dBase	2
DP160	Personal Computer Workstation Operating System	3
DP163	Troubleshooting and Repair of Personal Computers	3
DP225	Word Processing Techniques	2
	or	
OA111	Keyboarding/Document Formatting I	3
DP241	Desktop Publishing	3
DP260	Personal Computers Network Operating Systems	3
DP263	Storage, Protection & Recovery of Personal Computer	3
MN464	Organizational Behavior	3

150-Hour Program (34-35 credits)

AC421	Federal Taxation Accounting I	3
AC422	Federal Taxation Accounting II	3
AC427	Auditing	4
AC432	Advanced Accounting I	3
AC433	Advanced Accounting II	3
BA403	Government, Business & Society	3
DP151	Lotus 1-2-3	2
DP151	dBase	2
DP225	Word Processing Techniques	2
	or	
OA111	Keyboarding/Document Formatting I	3
DP241	Desktop Publishing	3
MN464	Organizational Behavior	3
MN360	Principles of Management	3
MN464	Organizational Behavior	3

General education requirements and sufficient elective credits must be completed so that at least 128 semester credits have been earned.

Bachelor of Science: Accounting (Public Accounting)
(sample schedule)

FALL			SPRING		
First Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
MA111	College Algebra	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition*	3	NS	Elective	3
DP151	Lotus 1-2-3	2	HU	Elective	4
NS	Elective	3	Soc Sci	Elective	3
		15			17
Second Year					
AC232	Intermediate Accounting I	4	AC233	Intermediate Accounting II	4
BA254	Business Law I	3	BA255	Business Law II	3
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN210	Research Paper Process		BA231	Business Communications	3
	*or**	3	BA211	Business Statistics	3
EN215	Intro. to Literature & Research				16
HU	Elective	4			
		17			
Third Year					
AC332	Cost Accounting I	4	AC333	Cost Accounting II	4
FN341	Managerial Finance	4	MN365	Human Resource Management	3
MK281	Marketing Principles and		AC334	Accounting Information Systems	3
	Strategies	3	NS/MA/SS Elective		4
NS	Elective	3		Electives	3
		14			17
Fourth Year					
AC421	Fedederal Taxation Accounting I	3	AC422	Federal Taxation Accounting II	3
AC432	Advanced Accounting I	3	AC433	Advanced Accounting II	3
AC427	Auditing	4	BA466	Business Policy	3
	Electives	6		Electives	7
		16			16

**English composition may be taken either fall or spring semester.*

Bachelor of Science: Accounting (Industrial Accounting)
(sample schedule)

FALL			SPRING		
First Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
MA111	College Algebra	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition*	3	NS	Elective	3
DP151	Lotus 1-2-3	2	HU	Elective	4
NS	Elective	3	DP225	Word Processing Techniques	2
		15			16

Second Year

AC232	Intermediate Accounting I	4	AC233	Intermediate Accounting II	4
BA254	Business Law I	3	BA255	Business Law II	3
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN210	Research Paper Process		BA231	Business Communications	3
	*or**	3	BA211	Business Statistics	3
EN215	Intro. to Literature & Research				16
HU	Elective	4			
		17			

Third Year

AC332	Cost Accounting I	4	AC333	Cost Accounting II	4
FN341	Managerial Finance	4	MN365	Human Resource Management	3
MK281	Marketing Principles &		AC334	Accounting Information Systems	3
	Strategies	3	NS/MA/SS	Elective	3
NS	Elective	3	Soc Sci	Electives	3
	Elective	2			16
		16			

Fourth Year

AC421	Federal Taxation & Accounting I	3	MN464	Organizational Behavior	3
BA403	Business, Government & Society	3	BA466	Business Policy	3
AC427	Auditing	4		Electives	10
	Electives	6			16
		16			

**English composition may be taken either fall or spring semester.*

Bachelor of Science: Accounting (Data Processing and Accounting) *(sample schedule)*

FALL			SPRING		
First Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
MA111	College Algebra	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition*	3	NS	Elective	4
DP151	Lotus 1-2-3	2	DP225	Word Processing Techniques	2
DP160	Personal Computers Work-		DP163	Troubleshooting and Repair	
	station Operating Systems	3		of Personal Computers	3
		15			16
Second Year					
AC232	Intermediate Accounting I	4	AC233	Intermediate Accounting II	4
BA254	Business Law I	3	BA255	Business Law II	3
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN210	Research Paper Process		DP263	Storage, Protection & Recovery	
	*or**	3		of Personal Computer	3
EN215	Intro. to Literature and Research		BA211	Business Statistics	3
DP260	Personal Computers Network				16
	Operating Systems	3			
		16			

Third Year

AC332	Cost Accounting I	4	AC333	Cost Accounting II	4
FN341	Managerial Finance	4	NS	Elective	4
MK281	Marketing Principles & Strategy	3	AC334	Accounting Information Systems	3
DP241	Desktop Publishing	3		Elective	3
DP151	Computer Applications	2	BA231	Business Communications	3
		16			17

Fourth Year

HU	Elective	4	HU	Elective	4
MN365	Human Resource Management	3	MN464	Organizational Behavior	3
NS/MA/SS	Electives	4	BA466	Business Policy	3
Soc Sci	Electives	3		Electives	6
	Elective	2			16
		16			

**English composition may be taken either fall or spring semester.*

Bachelor of Science: Accounting (150 Hour Program)
(sample schedule)

FALL			SPRING		
First Year					
AC132	Principles Accounting I	4	AC133	Principles of Accounting II	4
MA111	College Algebra	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition*	3	NS	Elective	4
DP151	Lotus 1-2-3	2	DP151	Computer Applications	2
NS	Elective	4		Elective	3
		16			16
Second Year					
AC232	Intermediate Accounting I	4	AC233	Intermediate Accounting II	4
BA254	Business Law I	3	BA255	Business Law II	3
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN210	Research Paper Process		BA231	Business Communications	3
	*or**	3	BA211	Business Statistics	3
EN215	Intro. to Literature & Research	3			16
MK281	Marketing Principles & Strategy	3			
		16			
Third Year					
AC332	Cost Accounting I	4	AC333	Cost Accounting II	4
FN341	Managerial Finance	4	MN365	Human Resource Management	3
HU	Elective	4	AC334	Accounting Information Systems	3
MN360	Principles of Management	3	Soc Sci	Elective	3
		15	DP225	Word Processing Techniques	2
					15
Fourth Year					
BA403	Government, Business & Society	3	HU	Elective	4
AC432	Advanced Accounting I	3	AC433	Advanced Accounting II	3
MN464	Organizational Behavior	3	NS/MA/SS	Elective	4
	Electives	3		Electives	3
DP241	Desktop Publishing	3			14
		15			

Fifth Year

AC421	Federal Taxation Accounting I	3	AC422	Federal Taxation Accounting II	3
AC427	Auditing	4	BA466	Business Policy	3
	Electives	6		Electives	8
		13			14

**English composition may be taken either fall or spring semester.*

Bachelor of Science: Business Administration

This degree requires successful completion of a four-year curriculum of 128 semester hours as prescribed in the following pages. The degree in business administration provides the student with a broad background in business administration. Students are encouraged to complete a minor, a specialty or an internship.

Common Professional Component (54 Credits)

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
BA211	Business Statistics	3
BA231	Business Communications	3
BA254	Business Law I	3
BA255	Business Law II	3
BA403	Business, Government & Society	3
BA466	Business Policy	3
DP151	Computer Applications	3
EC201	Prin. of Macroeconomics*	3
EC202	Prin. of Microeconomics*	3
FN341	Managerial Finance	4
MK281	Marketing Principles & Strategy	3
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN464	Organizational Behavior	3
MA111	College Algebra**	3

General education requirements and sufficient elective credits must be completed so that at least 128 credits have been earned.

Students are encouraged to use free electives to complete a minor, a specialty or an internship.

** May count toward social science general education requirement.*

*** May count toward B.S. degree requirement.*

Bachelor of Science: Business Administration
(sample schedule)

FALL **SPRING**

First Year

AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
MA111	College Algebra	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition*	3	NS	Elective	4
NS	Elective	4	BA211	Business Statistics	3
DP151	Computer Applications	3		Elective	3
		17			17

Second Year					
MK281	Marketing Principles & Strategy	3	HU	Electives	4
BA254	Business Law I	3	BA255	Business Law II	3
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN210	Research Paper Process		BA231	Business Communications	3
	*or**	3		Elective	3
EN215	Intro. to Literature & Research	3			16
HU	Elective	4			
		16			
Third Year					
SS	Elective	3	MN365	Human Resource Management	3
FN341	Managerial Finance	4	SS/NS/MA	Elective	4
MN360	Principles of Management	3		Electives	9
	Electives	6			16
		16			
Fourth Year					
BA403	Business, Government & Society	3	BA466	Business Policy	3
MN464	Organizational Behavior	3		Electives	12
	Electives	9			15
		15			

**English composition may be taken either fall or spring semester.*

Specialties

Requirements for specialties in management and marketing are listed below. Students may use free electives to complete a specialty or a minor. Internship experiences are also valued and should be considered (see course descriptions for BA299 and BA399). In addition to the minors in business outlined at the end of this section, minors in other departments are attractive and should be considered. Examples include business French, communications, computer science, legal assistant studies, Native American studies, public administration and public relations. A complete listing of minors is located at the front of this Catalog.

Management Specialty

Total Credits Required: 15
Required Courses:

MN451	Labor Law	4
MN461	Management Simulation	3
MN469	Collective Bargaining	3
MN471	Production & Operations Management: Models, Methods and Applications	5

Marketing Specialty

Total Credits Required: 18
Required Courses:

MK381	Consumer Behavior	3
MK387	Advertising	3
MK480	Marketing Research	3
MK481	Marketing Management	3
MK486	International Marketing	3
MK	Elective	3

Bachelor of Science: Finance and Economics

The study of finance and economics affords an opportunity for the student to acquire a general knowledge of business and economic systems. Specialized courses are included to develop ability in the use of the tools of economic and financial theory and analysis. To deal with the advances in sophistication and rigor in this discipline, students are required to take calculus. The program prepares students for careers in business, government service, education and graduate study.

Business Core (44 Credits)

AC132	Principles of Accounting	4
AC133	Principles of Accounting II	4
BA211	Business Statistics	3
BA231	Business Communications	3
BA254	Business Law I	3
BA466	Business Policy	3
DP151	Computer Applications	3
EC201	Prin. of Macroeconomics*	3
EC202	Prin. of Microeconomics*	3
FN341	Managerial Finance	4
MK281	Marketing Principles & Strategy	3
MN365	Human Resources Management	3
MA111	College Algebra**	3

Major Requirements (41 credits)

BA255	Business Law II	3
EC304	Money, Banking and Monetary Policy*	3
EC305	Public Finance	3
EC408	International Economics**	3
EC308	Intermediate Microeconomics	3
EC309	Intermediate Macroeconomics	3
FN446	Financial Analysis and Policy	4
FN448	Investment Strategy	4
MA112	Calculus for Business and Life Sciences**	4
EC/FN/AC	Electives	11

**May count toward social science general education requirement.*
***May count toward B.S. degree requirement.*

General education requirements and sufficient elective credits must be completed so that at least 124 semester credits have been earned.

Bachelor of Science: Finance and Economics
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fundamentals of Speech	3
MA111	College Algebra	3	MA112	Calculus for Business & Life Sciences	4
NS	Elective	4	NS	Elective	4
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	3
	Elective	3		Elective	3
		17			17
Second Year					
EN210	Research Paper Process *or**	3	BA211	Business Statistics	3
EN215	Intro. to Literature & Research		HU	Elective	4
HU	Elective	4	EC202	Prin. of Microeconomics	3
EC201	Prin. of Macroeconomics	3	BA255	Business Law II	3
BA254	Business Law I	3		Elective	3
DP151	Computer Applications	3			16
		16			

Third Year

FN341	Managerial Finance	4
EC309	Intermediate Macroeconomics	3
BA231	Business Communications	3
	Electives	6
		16

	Free Elective	4
EC304	Money, Banking & Monetary Policy	3
MK281	Marketing Principles & Strategy	3
EC/FN/AC	Elective	4
	Elective	3
		17

Fourth Year

EC308	Intermediate Microeconomics	3
EC408	International Economics	3
MN365	Human Resource Management	3
EC/FN/AC	Elective	3
FN448	Investment Strategy	4
		15

EC305	Public Finance	3
FN446	Financial Analysis & Policy	4
BA466	Business Policy	3
EC/FN/AC	Elective	4
		14

**English composition may be taken either fall or spring semester.*

Associate Degree: Business Administration

This program prepares students for entry-level positions in industry and government requiring two years of college-level business preparation. The program is oriented toward marketing and should be of special interest to individuals seeking careers in marketing or as management trainees in retail organizations. The degree program is transferable into a four-year program in business administration.

General Education Requirements

EN110	Freshman Composition	3
EN210	Research Paper Process *or*	3
EN215	Intro. to Literature & Research	
SD101	Fundamentals of Speech	3
PY101	Introduction of Psychology *or*	3-4
PY228	Organizational Behavior	
EC202	Principles of Microeconomics	3

Departmental Requirements

AC132	Principles of Accounting I *or*	4
AC230	Fundamentals of Accounting	4
BA231	Business Communications	3
BA254	Business Law I	3
BA255	Business Law II	3
FN245	Principles of Finance *or*	3-4
FN341	Managerial Finance	
MK281	Marketing Principles and Strategy	4
MK283	Principles of Selling	3
MK285	Retail Management	3
MK387	Advertising Theory and Practice	3
MN365	Human Resource Management	3
BA105	Business Mathematics	3
DP151	Computer Applications	3

Sufficient elective credits must be completed so that at least 62 semester credits have been earned.

Associate in Business Administration *(sample schedule)*

FALL			SPRING		
First Year					
AC132	Principles of Accounting I		SD101	Fundamentals of Speech	3
	or	4	MK283	Marketing Principles & Strategy	3
AC230	Fundamentals of Accounting		MK285	Retail Management	3
EN110	Freshman Composition*	3	EC202	Prin. of Microeconomics	3
PY101	Introduction to Psychology		DP151	Computer Applications	3
	or	3-4			15
PY228	Organizational Behavior				
BA105	Business Mathematics	3			
	Elective	3			
		16-17			
Second Year					
MK283	Principles of Selling	3	MN365	Human Resource Management	3
BA254	Business Law I	3	MK387	Advertising Theory & Practice	3
EN210	Research Paper Process		BA255	Business Law II	3
	*or**	3	BA231	Business Communications	3
EN215	Intro. to Literature & Research			Elective	3-4
EN245	Principles of Finance	3			15-16
	Elective	3			
		15			

**English composition may be taken either fall or spring semester.*

Associate Degree: Office Administration

This program is designed for students seeking careers as an administrative assistant, word processor, corresponding secretary or office supervisor. Good basic writing skills are required.

General Education Requirements

EN110	Freshman Composition	3
EN210	Research Paper Process	
	or	3
EN215	Intro. to Literature & Research	
SD101	Fundamentals of Speech	3
General Education Electives		6

Departmental Requirements

BA226	Records Management	3
BA231	Business Communications	3
BA121	Introduction to Business	3
BA105	Business Mathematics	3
DP160	Personal Computer Work-Station Operating Systems	3
DP151	Lotus 1-2-3	2
DP151	dBase	2
DP241	Desktop Publishing	3
DP225	Word Processing Techniques	2
OA111	Keyboarding/Document Formating I	3
OA112	Keyboard Skillbuilding	2-4
OA113	Document Formatting II	3
AC132	Principles of Accounting I	
	or	4
OA119	Accounting Procedures	
OA235	Automated Office Systems	3

Business Electives (2-4) From

MN365	Human Resource Management	3
MK281	Marketing Principles & Strategy	3
BA261	Business Skills	1-3
FN245	Principles of Finance	3
BA254	Business Law I	3

Sufficient elective credits must be completed so that at least 64 semester credits have been earned.

Associate Degree: Office Administration
(sample schedule)

FALL			SPRING		
First Year					
OA111	Keyboarding/Document Formatting I	3	OA112	Keyboard Skillbuilding	2
BA121	Introduction to Business	3	OA113	Document Formatting II	3
DP160	Operating Systems	3	DP151	Computer Applications	2
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
BA105	Business Mathematics	3		Elective	3
DP151	Lotus 1-2-3	2	Designated BusinessElective		3
		17			16
Second Year					
EN210	Research Paper Process *or**	4	BA231	Business Communications	3
EN215	Intro. to Literature & Research		OA235	Automotated Office Systems	3
DP225	Word Processing Techniques	2	BA226	Records Management	3
OA119	Accounting Procedures *or*	4	Designated Business Elective		1
AC132	Principles of Accounting I		General Education Elective		3
DP241	Desktop Publishing	3		Elective	3
General Education Elective		3			16
		15			

Associate Degree: Personal Computer Specialist

Personal computer specialists are in tune with the direction of the industry. The personal computer of today outperforms the mainframe computers of a generation ago at a fraction of the cost. This associate degree trains individuals to assist personal computer users. They will be able to assemble, upgrade, maintain, troubleshoot and repair personal computers; install and maintain both peer-to-peer and client-server local area networks (LANs); as well as configure systems for achieving maximum efficiency of the systems. They will be able to install and operate user application software packages, also. These skills are combined with general education and business courses.

General Education Requirements

EN110	Freshman Composition	3
EN210	Research Paper Process *or*	
EN215	Intro. to Literature & Research	3
SD101	Fundamentals of Speech	3
PY228	Organizational Behavior	3
General Education Electives		3

Department Requirements

OA119	Accounting Procedures (*or* AC132 and AC133)	4
BA231	Business Communications	3
BA254	Business Law I	3
MK281	Marketing Principles & Strategy	3
OA111	Keyboarding/Document Formatting I	3
	or	
DP225	Word Processing Techniques	2
DP160	Pesonal Computers Work-station Operating Systems	3
DP163	Troubleshooting & Repair of Personal Computers	3
DP260	Personal Computers Network Operating Systems	3
DP263	Storage, Protection & Recovery of PC	3
DP151	Lotus 1-2-3	2
DP151	Computer Applications	2
DP241	Desktop Publishing	3
	Electives	12

62 Credits Required for Degree

Associate Degree: Personal Computer Specialist
(sample schedule)

FALL			SPRING		
First Year					
OA111	Keyboarding/Document Formatting I	3	DP163	Troubleshooting and Repair of Personal Computers	3
	or		DP160	Personal Computer Workstation Operating Systems	3
DP225	Word Processing Techniques	2	DP151	dBase	2
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
PY228	Organizational Behavior	3		Elective	6
DP151	Lotus 1-2-3	2			17
BA254	Business Law I	3			
		13-14			
Second Year					
EN210	Research Paper Process		BA231	Business Communications	3
	or	3	DP260	Personal Computers Network Operating Systems	3
EN215	Intro. to Literature & Research		DP263	Storage, Protection and Recovery of Personal Computer	3
MK281	Marketing Principles & Strategy	3		Elective	6
OA119	Accounting Procedures				15
	or	4			
AC132	Principles of Accounting I				
DP241	Desktop Publishing	3			
General Education Elective		3			
		16			

Associate Degree in Technical Accounting

This program is designed for the student who does not plan to go to college for four years but desires a working knowledge in the field of accounting. The program provides students with knowledge in the accounting techniques used in modern business. Emphasis is on business administration courses in addition to accounting courses such as economics, business law, data processing and business communications. After completing this program, the student may transfer to the four-year program without loss of credit.

General Education Requirements

EN110	Freshman Composition	3
SD101	Fundamentals of Speech	3
EN210	Research Paper Process	
	or	3
EN215	Intro. to Literature & Research	
MA092	Intermediate Algebra	
	or	3
MA111	College Algebra	
EC201	Prin. of Macroeconomics	
	or	3
EC202	Prin. of Microeconomics	
General Education Elective		3

Departmental Requirements

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
AC232	Intermediate Accounting I	4
AC233	Intermediate Accounting II	4
AC332	Cost Accounting I	3
BA231	Business Communication	3
BA254	Business Law I	3
AC421	Federal Taxation Accounting I	3
DP151	Computer Applications	3
FN245	Principles of Finance	
	or	3-4
FN341	Managerial Finance	

Sufficient elective credits must be completed so that at least 64 semester credits have been earned.

Associate: Technical Accounting *(sample schedule)*

FALL			SPRING		
First Year					
AC132	Principles Accounting I	4	BA254	Business Law I	3
EN110	Freshman Composition	3	AC133	Principles of Accounting II	4
	Electives	3	SD101	Fundamentals of Speech	3
MA111	College Algebra*	3		Elective	6
DP151	Computer Applications	3			16
		16			
Second Year					
AC232	Intermediate Accounting I	4	AC233	Intermediate Accounting II	4
AC332	Cost Accounting I	4	BA231	Business Communications	3
AC421	Federal Taxation Accounting I	3	EC201	Prin. of Macroeconomics	
EN210	Research Paper Process			*or*	3
	or	3	EC202	Princ. of Microeconomics	
EN215	Intro. to Literature & Research			General Education Elective	3
FN245	Principles of Finance	3		Electives	2
		17			15

**College Algebra recommended; intermediate algebra required; MA092 credit does not apply toward 64 credits for degree.*

Certificate: Information Processing

This program prepares students for entry-level office positions as word processors or receptionists. The program develops other fundamental skills in communications, computer applications and records management.

(sample schedule)

FALL			SPRING		
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
BA105	Business Mathematics	3	OA235	Automated Office Systems	3
OA111	Keyboarding/Document		BA226	Records Management	3
	Formatting I	3	OA112	Keyboard Skillbuilding	2
DP225	Word Processing Techniques	2	OA113	Document Formatting II	3
	Elective	3	DP151	Lotus 1-2-3	2
		14	DP151	dBase	2
					18

Certificate: Personal Computer Specialist

This program provides the skills necessary to assist personal computer users as described under the associate degree program. With additional courses in general education and business, holders of this certificate can obtain the associate degree.

(sample schedule)

FALL		
DP160	Personal Computers Workstation Operating Systems	3
DP151	Lotus 1-2-3	2
DP151	dBase	2
OA119	Accounting Procedures	4
EN110	Freshman Composition	3
OA111	Keyboarding/Document Formatting I	
	or	2-3
DP225	Word Processing Techniques	
		16-17

SPRING		
DP163	Troubleshooting and Repair of Personal Computers	3
DP260	Personal Computers Network Operating Systems	3
DP241	Desktop Publishing	3
PY228	Organizational Behavior	3
DP263	Storage, Protection and Recovery of Personal Computer	3
		15

Minor Courses of Study

Nine minors are offered in the Department of Business and Economics. Course requirements are set out below. Elective courses are to be chosen in consultation with advisors.

Accounting-Finance Minor

Total Credits Required: 24
Required Courses:

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
FN341	Managerial Finance	4
AC and FN Electives		12

Economics Minor

Total Credits Required: 21
Required Courses:

EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
EC308	Intermediate Microeconomics	3
EC309	Intermediate Macroeconomics	3
EC	Electives	9

Economics-Finance Minor

Total Credits Required: 28
Required Courses:

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
FN341	Managerial Finance	4
EC or FN Electives		10

General Business Minor

Total Credits Required: 22-23
Required Courses:

AC132	Principles of Accounting I	
	or	4
OA119	Accounting Procedures	
MN360	Principles of Management	3
MK281	Marketing Principles & Strategy	3
EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
FN245	Principles of Finance	
	or	3-4
FN341	Managerial Finance	
BA231	Business Communication	3

Health Care Administration

Total Credits Required: 30
Required Courses:

AC230	Fundamentals of Accounting	4
FN245	Principles of Finance	3
MN365	Human Resource Management	3
MN469	Collective Bargaining	3
ES140	Health & Fitness	3
HE208	Nutrition	2
HE210	Intro. to Health Care Concepts	3
HE352	Health Issues of Aging Populations	3
BA354	Legal & Financial Issues in Health Care Administration	3
ID399	Internship	3

Human Resource Management Minor

Total Credits Required: 31
Required Courses:

EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
BA254	Business Law I	3
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN451	Labor Law	4
MN469	Collective Bargaining	3
PY228	Organizational Behavior	3
PY396	Tests and Measurements	3
PY201	Communication Skills in Counseling	
	or	3
PY383	Industrial Psychology	

Marketing Minor

Total Credits Required: 21
Required Courses:

MK281	Marketing Principles & Strategy	3
MK283	Principles of Selling	3
MK387	Advertising Theory & Practice	3
MK481	Marketing Management	3
MK486	International Marketing	3
MK	Electives	3
EC202	Prin. of Microeconomics	3

Office Administration Minor

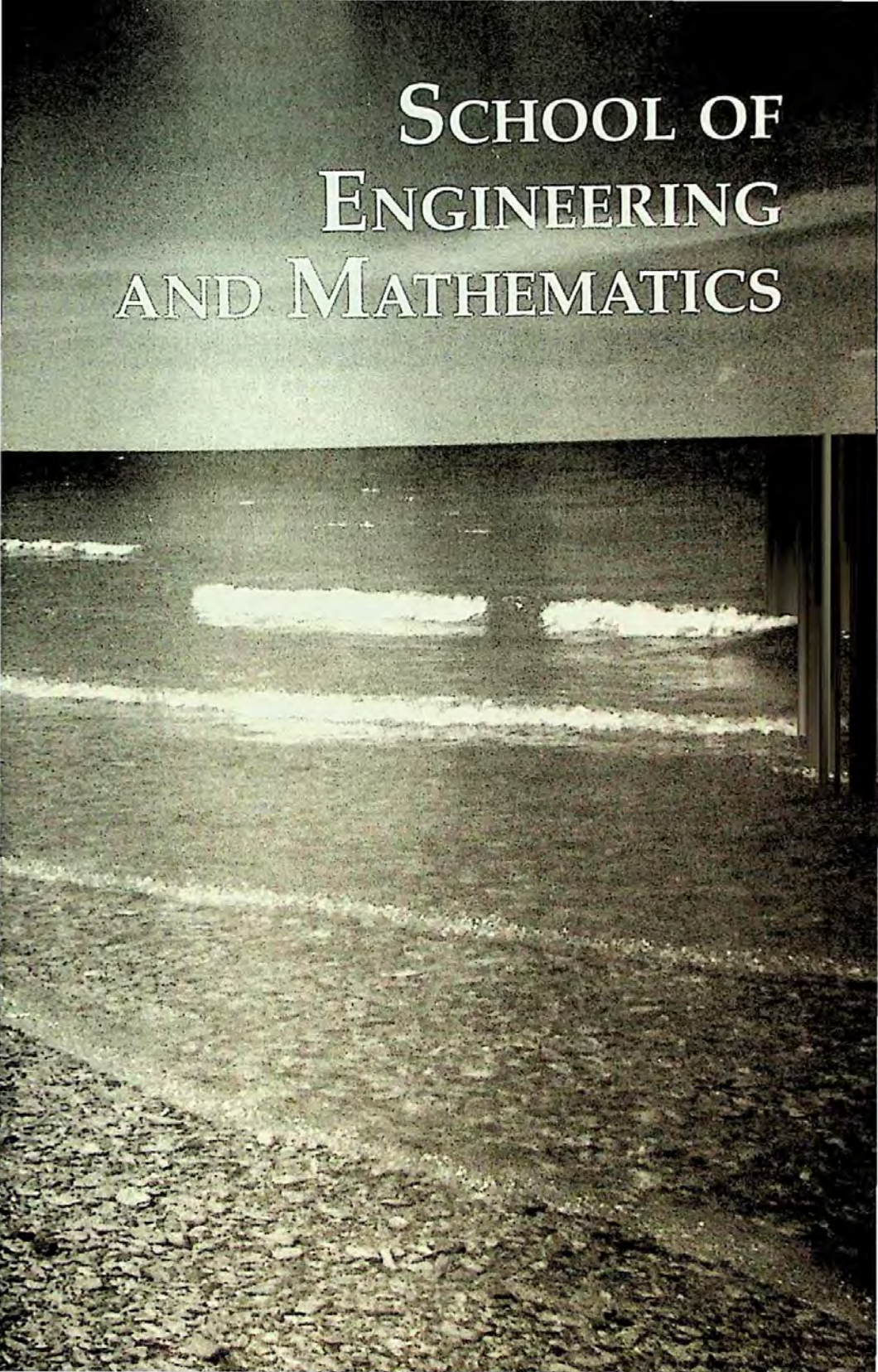
Total Credits Required: 23
Required Courses:

DP160	Operating Systems	3
DP151	Lotus 1-2-3 or dBase	2
DP241	Desktop Publishing	3
DP225	Word Processing Techniques	2
BA226	Records Management	3
OA235	Automated Office Systems	3
BA121	Introduction to Business	3
OA119	Accounting Procedures	
	or	4
AC132	Principles of Accounting I	

Personal Computer Specialist Minor

Total Credits Required: 20
Required Courses:

DP160	Personal Computer Work-station Operating Systems	3
DP163	Troubleshooting and Repair of Personal Computers	3
DP260	Personal Computers Network Operating System	3
DP263	Storage, Protection & Recovery of Personal Computers	3
DP/CS/AM	Electives	8


SCHOOL OF
ENGINEERING
AND MATHEMATICS

BACCALAUREATE

Computer and Mathematical Sciences
Electrical Engineering
Engineering Management
Environmental Engineering Technology
Manufacturing Engineering Technology
Mathematics
    Elementary and Secondary Teaching
Mechanical Engineering

ASSOCIATE

General Engineering
General Engineering Technology
Manufacturing Engineering Technology
Telecommunications Engineering Technology

MINORS

Computer Science
Mathematics
Mathematics Elementary Teaching
Mathematics Secondary Teaching

SCHOOL OF ENGINEERING AND MATHEMTICS

Faculty: Associate Professor Ray Adams, Dean of School of Engineering and Mathematics, Professors Bernard Arbic, David M. McDonald, Thomas Mickewich, Gary Thesing, Paul Wilson; Associate Professors Thomas Boger, Lawrence H. Bolio, James Devaprasad, Paul R. Duesing, Mieczyslaw Gutowski, John T. Madl, Mohamad Qatu, and Charles L. Weber; Assistant Professors Steven Gerrish, Janina Gutowska, Galen Harrison, Ajay Mahajan, Alan D. Niemi, Keith E. Schwiderson, Lester Spencer, Randall Suggitt, Mark Terwilliger and Maurice Walworth; Instructor Sherilyn Duesing.

Mission and Philosophy

The School of Engineering and Mathematics offers challenging undergraduate programs that focus on a personal approach to education which results in the development of students as contributing citizens, viable professionals and fulfilled, caring individuals. The school's focus has been education in the fundamentals for lifelong careers and education that promotes an image of positive, caring faculty with satisfied graduates who are employed or prepared for advanced study in their chosen fields. The fundamental concepts used by the school in developing programs and courses are quality, personal attention and added value.

All bachelor of science degrees in engineering, and the bachelor of science and associate degrees in technology, are designed to be accreditable by the Accreditation Board for Engineering and Technology (ABET). An industrial advisory board actively participates in the development of programs and curriculum. Engineering and engineering technology programs emphasize the application of theory to real world engineering. All programs are laboratory intensive and structured to maximize student use of equipment under faculty supervision and guidance.

Mathematics and computer science degree programs are designed to address curriculum recommendations of the most influential professional organizations of the disciplines, such as the Association for Computing Machinery and the Committee on the Undergraduate Program in Mathematics. Upper division mathematics and computer science major courses have average enrollments of 10-15 students and provide close interaction between faculty and students.

A wide range of academic programs and degree levels is offered by the school. Resources and special programs are available to optimize the student's success, educational experience and professional options. These include the University Learning Center, work study, senior design experience, cooperative education, summer internships, student organizations and faculty/student research.

Senior Design Experience: Baccalaureate programs in engineering and engineering technology include a senior design experience that prepares students for the transition from college to employment. These courses incorporate lectures and laboratory exercises in team building skills, peer evaluation, scheduling and time lines, ethics and creative problem solving. Most involve multi-disciplinary

teams of students working on large-scale industrial projects which could be product or process design and build, or product or process research. Students are required to develop and manage a budget, establish methods of purchasing items, and regularly interface with an industrial project contact.

Cooperative education and summer internships: Students are encouraged to participate in the cooperative education programs and summer internships. Through these experiences, students gain valuable industrial experience that can lead to greater job opportunities upon graduation and higher starting salaries. Some examples of participating employers include General Motors, Delco Electronics, Ford, Mead Paper, Michigan Scientific and Dura Automotive.

Related Professional Opportunities

Student organizations: Memberships in student chapters of professional student organizations are available to further enhance the educational opportunities for students. Organizations include the American Society of Mechanical Engineers (ASME), Institute for Electrical Electronic Engineers (IEEE), Mathematics Club, Association of Computing Machinery, Society of Automotive Engineers (SAE), Society of Manufacturing Engineers (SME), Society of Women Engineers (SWE) and Tau Alpha Pi Honor Society.

Faculty/student applied research: The autonomous systems laboratory serves as a research center as well as an undergraduate laboratory for courses such as dynamics, automatic control and sensor technology. The focus of the laboratory is research in robotics, controls and intelligent sensors, as well as the integration of modern technology in the undergraduate curriculum. Student participation in the applied research projects of the ASL is encouraged.

Admission Requirements

Freshman: Please refer to the section on Admissions for further details. The school does not have additional entrance requirements.

Transfer Students: Articulation agreements exist with many other institutions. An evaluation of all previous course work will be made upon acceptance to the University. After evaluation of course work, an individualized plan of study will be developed by the department chair or faculty advisor. Please refer to the section on Admissions for further details.

Department of Electrical Engineering

Assistant Professor Maurice Walworth, Chair

Bachelor of Science: Electrical Engineering

Electrical engineering combines principles from science and mathematics to develop solutions to computer- and electrical-related problems. Professional career opportunities cover a broad spectrum of engineering in such areas as hardware and software design, analysis, testing and development, robotics, research, and manufacturing.

The electrical engineering program at Lake Superior State University is designed to prepare graduates with knowledge and skills for a rewarding engineering career. The program is especially focused to provide students with an applications orientation to electrical engineering. The curriculum offers strong fundamentals in electronic network analysis, digital circuits, electronic devices, electrical-mechanical systems, control systems, and microcontroller programming and interfacing. Students can select specific options in digital systems design, robotics and control systems or electrical-mechanical systems. The digital systems design option is structured to prepare individuals for careers in digital electronics and computer systems. The robotics and control systems option is structured to prepare individuals for careers in robotics, automated manufacturing or control systems engineering. The electrical-mechanical systems option combines electrical and mechanical course work to prepare individuals for careers in electrical-mechanical systems and product design. All three options provide students with a strong foundation in fundamentals with an emphasis on the application of engineering theory to real-world problems.

The curriculum contains a strong laboratory emphasis that provides the student with practical design applications of theoretical concepts. During the senior design courses, electrical engineering students will work on cross-disciplinary design teams with other engineering and technology students on solicited projects from industry. Computer applications, technical problem-solving, teamwork and communication skills are reinforced throughout the course work.

During their course of study, students will work in modern, state-of-the-art laboratories in electronics, digital systems, robotics, automated manufacturing systems and electrical-mechanical systems. Students will also have direct contact with expert professors in both the lecture and laboratory components of their courses. Cooperative education opportunities exist for those students who wish to interlace professional work opportunities with their engineering studies.

To complete the bachelor of science in electrical engineering, students must complete the course requirements listed below and demonstrate writing proficiency. A grade of C (2.0) or better must be achieved in all courses listed as department requirements.

Bachelor of Science: Electrical Engineering (126 credits)

Departmental Requirements (97 Credits)

Mathematics

MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA207	Prin. of Statistical Methods	3
MA208	Stat.Appl.for Qual.Control	1
MA243	Calculus and Linear Algebra for Engineers	4
MA343	Differential Equations for Engineers	4

Sciences

CH108	Applied Chemistry	4
PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Engineering

EE101	Intro. to Electrical Engineering	2
EE105	Fabrication Fundamentals	1
EE125	Digital Fundamentals	4
EE210	Circuits and Machines	4
EE250	Micro-controller Fundamentals	4
EE310	Network Analysis I	5
EE315	Network Analysis II	3
EE330	Electro-Mechanical Systems	4
EE370	Electronics I	4
EE375	Electronics II	4
EE440	Electromagnetic Fields	3
EG265	"C" Programming	3
EG490	Engineering Design Project I	3
EG495	Engineering Design Project II	3
EM220	Statics	3
RS460	Control Systems	4

Engineering Electives for Digital Systems Option

EE355	Micro-controller Systems	4
EE420	Digital Design	4
EE425	Digital Signal Processing	3

Engineering Electives for Robotics and Control Systems Option

RS385	Robotics Engineering	3
RS430	Systems Integration and Machine Vision	4
RS435	Automated Manufacturing Systems	4

Engineering Electives for Electrical-Mechanical Systems Option

ME225	Strength of Materials	3
ME275	Engineering Materials	3
EM320	Dynamics (Required)	4
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3

General Education Requirements
(29 Credits)

Lower Division Courses

EN110	Freshman Composition	3
EN205	Technical Report Writing	3
UN101	University Seminar I	1
UN102	University Seminar II	1
UN103	University Seminar III	1
UN104	University Seminar IV	1
	Humanities or Aesthetics	4/3
SD101	Fundamentals of Speech	3

Upper Division Courses

	Humanities or Aesthetics	4/3
	Natural or Social Science	4/3
SO103	Cultural Diversity	3
	Social Science	4

Bachelor of Science: Electrical Engineering
(sample schedule)

Fall

First Year

UN101-2	University Seminar I & II	2
EN110	Freshman Composition	3
	Humanities or Aesthetics	4/3
EE101	Intro. to Electrical Engineering	2
MA150	PreCalculus Mathematics (if needed)	(4)
		14

Second Year

MA144	Calculus for Engineering II	4
PH231	Applied Physics for Engineers & Scientists I	4
EE210	Circuits and Machines	4
EE250	Micro-controller Fundamentals	4
		16

Third Year

MA343	Differential Equations for Engineers	4
EE310	Network Analysis I	5
EE330	Electro-Mechanical Systems	4
EE370	Electronics I	4
		17

Spring

UN103-4	University Seminar III & IV	2
EN205	Technical Report Writing	3
CH108	Applied Chemistry	4
EE125	Digital Fundamentals	4
EE105	Fabrication Fundamenals	1
MA143	Calculus for Engineering I	4
		18

MA243	Calculus and Linear Algebra for Engineers	4
PH232	Applied Physics for Engineers & Scientists II	4
EM220	Statics	3
SD101	Fundamentals of Speech	3
EG265	"C" Programming	3
		17

MA207	Prin. of Statistical Methods	3
MA208	Stat. Appl. for Qual. Control	1
EE315	Network Analysis II	3
EE375	Electronics II	4
	Engineering Elective	4
		15

Fourth Year

EG490	Engineering Design Project I	3	EG495	Engineering Design Project II	3
EE440	Electromagnetic Fields	3		Humanities or Aesthetics	4/3
RS460	Control Systems	4		Cultural Diversity	3
	Natural or Social Science Elect.	4/3		Engineering Elective	3
	Engineering Elective	4		Social Science	4
		17/18			16/17

Students must complete one of the following options.

Digital Systems Engineering Electives

EE355	Micro-controller Systems	4
EE420	Digital Design	4
EE425	Digital Signal Processing	3

Robotics and Control Engineering Electives

RS385	Robotics Engineering	3
RS430	Systems Integration and Machine Vision	4
RS435	Automated Manufacturing Systems	4

Electrical-Mechanical Engineering Electives (Select EM320 and 3 others)

ME225	Strength of Materials	3
ME275	Engineering Materials	3
EM320	Dynamics (Required)	4
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3

Department of Manufacturing Engineering Technology

Associate Professor James Devaprasad, Chair

Bachelor of Science: Manufacturing Engineering Technology

Manufacturing engineering technology (MfgET) is a multi-disciplinary field integrating basic knowledge from fields such as mechanical engineering, electrical/electronics engineering, computer science, management and economics. MfgET is that specialty in the engineering profession that provides expertise to plan the practices of manufacturing, to research and develop the tools, processes, machines and equipment, and to integrate the facilities, personnel and systems for producing quality products with optimal expenditures.

Graduates with a B.S. degree in MfgET could be involved in a wide range of areas from applied research to technical management. Whether it be a single gear or a complete automobile engine, the logical set of events that results in a finished product is planned and implemented by a manufacturing engineer.

The B.S. degree program in MfgET at LSSU is accredited nationally by TAC/ABET (Technology Accreditation Commission of the Accreditation Board for Engineering and Technology). The program emphasis is in the application of robotics, automation, computer-aided manufacturing and intelligent sensors to modern manufacturing. Job titles of graduates from the MfgET program could include: Applications engineer, robotics engineer, systems engineer, industrial technologist, automation engineer, production technologist, and manufacturing engineer.

As with all engineering technology programs, the focus of the MfgET program is the applied/ implementation aspect of engineering. Therefore, unlike accredited engineering programs that require four or more calculus courses (or advanced mathematics courses), the MfgET program requires only one calculus course and one statistics course as necessary background for applied engineering.

In addition to the traditional training facilities such as manufacturing processes lab, materials lab, electronics lab and digital/microprocessor lab, LSSU is home for a state-of-the-art automated manufacturing lab consisting of several industrial robots, programmable logic controllers (PLCs), machine vision/sensor systems and material handling systems. Class and lab sizes in the technical courses are kept small to allow effective learning and interaction between students and faculty. Communication, teamwork and interpersonal skills are reinforced throughout the curriculum. Cooperative education opportunities exist for those students interested in integrating professional work experience with their engineering technology studies. The culmination of the education in manufacturing engineering technology is a senior design project where the students work in multi-disciplinary teams on projects from industry.

Entrance requirements for freshmen students into the program are the same as the general entrance policy into any program at the University. Students can also transfer into the MfgET program after completing an associate degree in a related field from a community college. Such students can typically complete the B.S. degree in MfgET in two more years at LSSU. Please refer to the section on Admissions for further details.

Robotics and Automation: Students have the option to complete the B.S. degree in MfgET with a special emphasis in robotics and automation. In order to get this emphasis, students are required to take three specific courses in place of three elective courses already required in the curriculum. Students who meet the requirements for this emphasis will be identified as such on their transcripts.

A scientific "high technology" basis in the field of manufacturing engineering technology is evolving. The MfgET program is designed to place LSSU students at the leading edge of this evolution.

Bachelor of Science: Manufacturing Engineering Technology (127 credits)

Departmental Requirements (102 Credits)

Mathematics

MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
MA143	Calculus for Engineering I	4
MA207	Prin. of Statistical Methods	3
MA208	Stat.Appl.for Qual.Control	1

Sciences

CH108	Applied Chemistry	4
PH221	Elements of Physics I	4

Engineering

EE125	Digital Fundamentals	4
EE250	Micro-controller Fundamentals	4
ET110	Applied Electricity and PLC	4
ET175	Applied Electronics	4
EG490	Engineering Design Project I	3
EG495	Engineering Design Project II	3
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME275	Engineering Materials	3
MT215	Design for Manufacturing	4
MT225	Statics and Strength of Materials	3
MT315	NC/CNC Manufacturing Process	3
RS280	Robotics Technology	3
RS365	Programmable Logic Controllers	3
RS480	Control Systems & Automation	4
TC110	Industrial Safety	2

Support Courses

CS101	Intro. to Microcomputer Appl.	3
CS105	Intro. Computer Programming	3
MN360	Principles of Management	3
	Cooperative Education	2
	MA/Science Elective	3
	Technical Elective	3
	Free Electives	6

General Education Requirements
(25 Credits)

Lower Division Courses

EN110	Freshman Composition	3
EN205	Technical Report Writing	3
	Humanities or Aesthetics	4/3
SD101	Fundamentals of Speech	3

Upper Division Courses

	Humanities or Aesthetics	4/3
	Natural or Social Science	4/3
SO103	Cultural Diversity	3
	Social Science (Economics)	3

Bachelor of Science: Manufacturing Engineering Technology
(sample schedule)

FALL

First Year

MA092	Intermediate Algebra*	(4)
	or	
	Humanities or Aesthetics	4/3
ME110	Manufacturing Processes I	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD & GD&T)	4
EN110	Freshman Composition	3
CS101	Intro. to Microcomputer Appl.	3
		16/17

Second Year

PH221	Elements of Physics I	4
ET110	Applied Electricity & PLC	4
MA207	Prin. of Statistical Methods	3
MA208	Stat. Appl. for Qual. Control	1
RS280	Robotics Technology	3
		15

Third Year

MA143	Calculus for Engineering I	4
MT315	NC/CNC Manufacturing Process	3
CS105	Intro. to Computer Programming	3
TC110	Industrial Safety	2
MN360	Principles of Management	3
		15

Summer

	Cooperative Education++	2

Spring

ME115	Manufacturing Processes II	3
EN205	Technical Report Writing	3
MA140	Algebra for Technologists	4
MA109	Trigonometry and Vectors	2
CH108	Applied Chemistry	4
		16

MT225	Statics & Strength of Materials	3
ME275	Engineering Materials	3
SD101	Fundamentals of Speech	3
ET175	Applied Electronics	4
ET125	Digital Fundamentals	4
		17

Total credits requried to complete associate degree = 64

MT215	Design for Manufacturing	4
	Free Elective+	3
RS365	Programmable Logic Controllers	3
	Free Elective+	3
	MA or Science Elective+	3
		16

Fourth Year

EE250	Microcontroller Fundamentals	4
EG491	Engineering Desing Project I	3
RS480	Control Systems & Automation	4
	Technical Elective**	3
	Natural or Social Science Elect.	3
		17

EG495	Engineering Design Project II	3
SO103	Cultural Diversity	3
	Humanities or Aesthetics	4/3
	Social Science (Economics)	3
		13/14

Total credits required to complete BS degree = 127

* Students placed in MA092 should take natural/social science elective in the summer or later in the curriculum.
** To be approved by department chair.
\+ For robotics and automation emphasis EG265 "C" Programming, RS430 Systems Integration and Machine Vision, and MA143 Calculus for Engineering I are required.
++If cooperative education opportunity is not available, a technical elective approved by department chair may be substituted.

Associate Degree: Manufacturing Engineering Technology

Departmental Requirements (64 Credits)

Engineering and Engineering Technology Courses

EE125	Digital Fundamentals	4
ET110	Appl. Electricity & PLC	4
ET175	Applied Electronics	4
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME275	Engineering Materials	3
MT225	Statics and Strength of Materials	3
RS280	Robotics Technology	3

Mathematics and Science Courses

MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
MA207	Prin. of Statistical Methods	3
MA208	Stat. Appl. for Qual. Control	1
PH221	Elements of Physics I	4
CH108	Applied Chemistry	4

Support Courses

CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
SD101	Fundamentals of Speech	3
	Humanities or Aesthetics	4/3

Associate Degree: Manufacturing Engineering Technology *(sample schedule)*

FALL

First Year

MA092	Intermediate Algebra*	(4)
	or	
	Humanities or Aesthetics	4/3
ME110	Manufacturing Processes I	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
EN110	Freshman Composition	3
CS101	Intro. to Microcomputer Appl.	3
		16/17

SPRING

ME115	Manufacturing Processes II	3
EN205	Technical Report Writing	3
MA140	Algebra for Technologists	4
MA109	Trigonometry and Vectors	2
CH108	Applied Chemistry	4
		16

Second Year

PH221	Elements of Physics I	4	MT225	Statics & Strength of Materials	3
ET110	Applied Electricity & PLC	4	ME275	Engineering Materials	3
MA207	Prin. of Statistical Methods	3	SD101	Fundamentals of Speech	3
MA208	Stat. Appl. for Qual. Control	1	ET175	Applied Electronics	4
RS280	Robotics Technology	3	EE125	Digital Fundamentals	4
		15			17

Total credits required to complete associate degree = 64

Department of Mathematics and Computer Sciences

Mark Terwilliger, Chair

In recent years, a quiet revolution has taken place. The computer has moved out of the back room of large corporations and research institutions into the front offices and living rooms of modern society. Computer scientists work at the leading edge of this revolution, developing software systems that allow us to utilize the electronic hardware the engineers have built. The work is challenging, and often frustrating, but is ultimately very rewarding.

The department offers a bachelor of science in computer and mathematical sciences that combines a study of digital computing with the study of mathematical concepts. The resulting program provides students with considerable versatility and potential for future endeavors in which practical quantitative skills are important. A *minor* in computer science is also available to provide excellent support and value to most majors offered at the University. This minor is an approved teaching minor for students planning to teach at the secondary level.

Entrance requirements: To qualify for admission to the program in computer and mathematical sciences, applicants must satisfy University admission requirements as described in the Admissions section of this Catalog. (This information is also included in the Viewbook.)

Secondary school academic subjects should include: Three units of English, two units of algebra and one unit of geometry. It is strongly recommended that applicants have a fourth unit of college-preparatory mathematics that includes one-half unit of trigonometry. A unit of chemistry or physics is also recommended.

For incoming students with college-level achievement, the opportunity will be offered, by means of examination, to obtain course credit or placement into an advanced course.

Bachelor of Science: Computer and Mathematical Sciences
Quantitative Emphasis

Departmental Requirements (70 credits)

CS101	Intro. to Microcomputer Appl.	3
CS105	Intro. to Computer Programming	3
CS121	Survey of Computer Science	3
CS201	Data Structures and Algorithms	3
CS205	Computer Organization and Architecture	3
CS211	Database Applications	3
CS221	Computer Networks	3
CS290	Independent Study in Computer Science	3
CS312	File and Database Management	3
CS321	Computer Graphics	3
CS333	Systems Programming	3
CS334	Operating Systems Concepts	3
CS418	Software Engineering	3
CS490	Research Topics in Computer Science	4
MA143, 144	Calculus for Engineering I, II	
	or	8
MA151, 152	Calculus I, II	
MA215	Fundamental Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA261	Intro. to Numerical Methods	3
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	4
MA351	Graph Theory	3

Elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

Bachelor of Science: Computer and Mathematical Sciences
Quantitative Emphasis (sample schedule)

FALL			SPRING		
First Year					
MA150	Pre-Calculus Math. (or Elective)	4	MA151	Calculus I	4
CS101	Intro. to Microcomputer Appl.	3	CS121	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3		Science Course	3-4
EN110	Freshman Composition	3	UN103	University Seminar III	1
UN101	University Seminar I	1	UN104	University Seminar IV	1
UN102	University Seminar II	1		Elective	3
		15			15-16
Second Year					
MA215	Fund. Concepts of Mathematics	3	MA216	Discrete Mathematics and Problem Solving	3
MA152	Calculus II	4	CS211	Database Applications	3
CS201	Data Structures and Algorithms	3	SD101	Fundamentals of Speech	3
EN210	Research Paper Process	3		Science Course	4
	Elective	3	CS290	Independent Study in Computer Science	3
		16			16

Third Year

	Upper-Division Aesthetics	3	MA351	Graph Theory	3
MA308	Probability and Mathematical Statistics	4	CS334	Operating Systems Concepts	3
CS205	Computer Organization and Architecture	3	CS221	Computer Networks	3
CS333	Systems Programming	3		Ethics Course	3
	Elective	3		Elective	3
		16			15

Fourth Year

MA261	Intro. to Numerical Methods	3	SO103	Cultural Diversity	3
MA305	Computational Linear Algebra	3		Aesthetics Course	3
CS418	Software Engineering	3	CS321	Computer Graphics	3
	Upper-Level Science Course	3	CS490	Research Topics in Computer Science	4
CS312	File & Database Management	3		Elective	3
		15			16

Total Credits: 124

Bachelor of Science: Computer and Mathematical Sciences
Systems Emphasis

Departmental Requirements (58 credits)

CS101	Intro. to Microcomputer Appl.	3
CS105	Intro. to Computer Programming	3
CS121	Survey of Computer Science	3
CS201	Data Structures and Algorithms	3
CS205	Computer Organization and Architecture	3
CS211	Database Applications	3
CS221	Computer Networks	3
CS290	Independent Study in Computer Science	3
CS312	File and Database Management	3
CS321	Computer Graphics	3
CS333	Systems Programming	3
CS334	Operating Systems Concepts	3
CS418	Software Engineering	3
CS490	Research Topics in Computer Science	4
MA109	Trigonometry and Vectors	2
MA111	College Algebra	3
MA112	Calculus for Business and Life Science	4
MA207	Prin. of Statistical Methods	3
MA305	Computational Linear Algebra	3

Other Requirements (11 credits)

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
BA121	Introduction to Business	3

Total Credits: 124

Bachelor of Science: Computer and Mathematical Sciences
Systems Emphasis (sample schedule)

FALL			SPRING		
First Year					
	Elective (or MA092*)	4	MA111	College Algebra	3
CS101	Intro. to Microcomputer Appl.	3	CS121	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3		Science Course	4
EN110	Freshman Composition	3	UN103	University Seminar III	1
UN101	University Seminar I	1	UN104	University Seminar IV	1
UN102	University Seminar I	1	MA109	Trigonometry & Vectors	2
		15			14

Second Year

MA112	Calculus for Business and Life Sciences	4	MA305	Computational Linear Algebra	3
AC132	Principles of Accounting I	4	CS211	Database Applications	3
CS201	Data Structures and Algorithms	3	SD101	Fundamentals of Speech	3
EN210	Research Paper Process	3	AC133	Principles of Accounting II	4
	Elective	3	CS290	Computer Science Project	3
		17			16

Third Year

	Science Course	3	BA121	Introduction to Business	3
MA207	Prin. of Statistical Methods	3	CS334	Operating Systems Concepts	3
CS205	Computer Organization and Architecture	3	CS221	Computer Networks	3
				Ethics Course	3
CS333	Systems Programming	3		Elective	3
	Elective	4			15
		16			

Fourth Year

	Upper-Division Aesthetics	3		Aesthetics Course	3
CS418	Software Engineering	3	CS321	Computer Graphics	3
	Upper-Level Science Course	3	CS490	Research Topics in Computer Science	4
	Upper-Division Elective	3			
CS312	File & Datebase Management	3	SO103	Cultural Diversity	3
		15		Upper-Division Elective	3
					16

Total Credits: 124

** If MA092 is taken, four additional elective credits are necessary.*

MATHEMATICS

A most productive tool: Mathematics is the foundation of the sciences and the technology largely responsible for our present standard of living. Mathematics is one of the most-productive tools yet discovered for unraveling the mysteries of our universe. In some instances, it is the only language in which some ideas can be expressed. Courses offered in this discipline provide the foundation for future work in mathematics. Our teaching objectives are twofold: To give students an understanding of mathematics, and to impart an understanding of the many ways in which this tool may be used.

Career opportunities: Mathematicians are employed as teachers in secondary schools, colleges and universities. Many work for government agencies such as the Department of Defense, National Aeronautics and Space Administration and the Department of Commerce. Companies providing computer and data processing services, educational and testing services, and management and actuarial services also employ mathematicians.

Graduate study improves opportunities for mathematicians, and students are encouraged and supported in their graduate school plans and placement. Graduate study in numerous fields related to mathematics is possible.

Entrance Requirements: To qualify for admission to the program in mathematics, applicants must satisfy University admission requirements as described in the Admissions section of the Catalog. (This information is also included in the Viewbook.)

Secondary school academic subjects should include: Three units of English, two units of algebra and one unit of geometry. It is strongly recommended that applicants have a fourth unit of college-preparatory mathematics that includes one-half unit of trigonometry. A unit of chemistry or physics is also recommended.

For incoming students with college-level achievement, the opportunity will be offered, by means of examination, to obtain course credit or placement into an advanced course.

Bachelor of Science: Mathematics

Departmental Requirements (56 credits)

MA151	Calculus I	4
MA152	Calculus II	4
MA251	Calculus III	4
MA215	Fundamental Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA261	Intro. to Numerical Methods	3
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	4
MA309	Applied Statistics	3
MA310	Differential Equations	4
MA341	Abstract Algebra I	3
MA351	Graph Theory	3
MA401	Mathematical Modeling	3
MA411	Advanced Calculus	3
MA490	Research Topics in Mathematics	3

Choose any two (2) of the following 6

CS101	Intro. to Microcomputer Applications
CS105	Intro. to Computer Programming
CS121	Survey of Computer Science

Other Requirements (4 credits)

PH231	Applied Physics for Engineers and Scientists I	4

Free electives and general education requirements must be completed so that at least 124 semester credits have been earned.

Bachelor of Science: Mathematics

FALL			SPRING		
First Year					
MA151	Calculus I	4	MA152	Calculus II	4
EN110	Freshman Composition	3	CS105	Intro. to Computer Programming	
UN101	University Seminar I	1		*or*	3
UN102	University Seminar II	1	CS121	Survey of Computer Science	
CS101	Intro. to Microcomputer Appl.		SD101	Fundamentals of Speech	3
	or	3	UN103	University Seminar III	1
CS105	Intro. to Computer Programming		UN104	University Seminar IV	1
	Elective	3-4	SO103	Cultural Diversity	3
		15-16			15
Second Year					
(Possibly MA 152)		4	MA251	Calculus III	4
MA215	Fundamental Concepts of Mathematics	3	MA216	Discrete Mathemtics and Problem Solving	3
MA261	Intro. to Numerical Methods	3		Ethics	3
EN210	Research Paper Process	3		Electives	3-6
PH231	Applied Physics for Engineers and Scientists I	4			13-16
		13-17			

Third Year

MA308	Probability and Mathematical Statistics	4
MA310	Differential Equations	
	or	3-4
MA305	Computational Linear Algebra	
HU	(Aesthetics)	4
MA341	Abstract Algebra I	
	or	3
MA401	Mathematical Modeling	
		14-15

MA309	Applied Statistics	3
MA351	Graph Theory	
	or	3
MA411	Advanced Calculus	
HU	(Aesthetics)	3-4
	Electives	4-6
		13-16

Fourth Year

	Science Course	3
MA305	Comutatonal Linear Algebra	
	or	3-4
MA310	Differential Equations	
MA401	Mathematical Modeling	
	or	3
MA341	Abstract Algebra I	3
	Electives	3-6
		12-15

MA490	Research Topics in Mathematics	3
MA411	Advanced Calculus	
	or	3
MA351	Graph Theory	
	Electives	8-10
		14-16

Total Credits: 124

Bachelor of Science: Mathematics
Actuarial and Business Applications

Departmental Requirements (53 credits)

MA151	Calculus I	4
MA152	Calculus II	4
MA251	Calculus II	4
MA215	Fundamental Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	4
MA309	Applied Statistics	3
MA310	Differential Equations	4
MA341	Abstract Algebra I	3
MA351	Graph Theory	3
MA401	Mathematical Modeling	3
MA411	Advanced Calculus	3
MA490	Research Topics in Mathematics	3

Choose any two of the following 6

CS101	Intro. to Microcomputer Appl.	
CS105	Intro. Computer Programming	
CS121	Survey of Computer Science	

Other Requirements (7 credits)

EC201	Prin. of Macroeconomics	3
FN341	Managerial Finance	4

A student choosing this emphasis will complete a minor in accounting-finance.

Total Credits: 124

This is a sample program leading to a major in mathematics with actuarial and quantitative business applications. It contains a minor in accounting-finance. A student should be prepared to take the first actuarial examination in the spring of his/her junior year and the second examination the following spring. (A student following this program should see the department chair for the following substitutions; EC201 will be substituted for PH231 and AC332 will be substituted for MA261).

Bachelor of Science: Mathematics
Actuarial and Business Applications (sample schedule)

FALL			SPRING		
First Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
EN110	Freshman Composition	3	CS105	Intro. to Computer Programming	
MA151	Calculus I	4		*or*	3
CS101	Intro. to Microcomputer Appl.		CS121	Survey of Computer Science	
	or	3	EC201	Principles of Macroeconomics	
CS105	Intro. to Computer Programming			*or*	3
UN101	University Seminar I	1	EC202	Principles of Microeconomics	
UN102	University Seminar II	1	MA152	Calculus II	4
		16	UN103	University Seminar III	1
			UN104	University Seminar IV	1
					16
Second Year					
SD101	Fundamentals of Speech	3	EC201	Principles of Macroeconomics	
	Science Course	3		*or*	3
BA254	Business Law I	3	EC202	Principles of Microeconomics	
EN210	Research Paper Process	3		Science Course	3
MA215	Fundamental Concepts of		MA216	Discrete Mathematics and	
	Mathemtics	3		Problem Solving	3
		15	MA251	Calculus III	4
				Electives	3
					16
Third Year					
AC332	Cost Accounting I	4	FN341	Managerial Finance	4
MA308	Probability and Mathematical		MA309	Applied Statistics	3
	Statistics	4	MA351	Graph Theory	
MA310	Differential Equations			*or*	3
	or	3-4	MA411	Advanced Calculus	
MA305	Computational Linear Algebra		HU	(Aesthetics)	4
	Ethics	3			14
MA341	Abstract Algebra I				
	or	3			
MA401	Mathemtical Modeling				
		17-18			
Fourth Year					
FN448	Investment Strategy	4	FN443	Insurance	3
	Electives	4	MA490	Research Topics in Mathemtics	3
MA305	Computational Linear Algegra		MA411	Advanced Calculus	
	or	3-4		*or*	3
MA310	Differential Equations		MA351	Graph Theory	
MA401	Mathematical Modeling			Electives	6-8
	or	3			15-17
MA341	Abstract Algebra I				
		14-15			

Total Credits: 124

Bachelor of Science: Mathematics
Elementary Teaching Option

Departmental Requirements
(37 or 38 credits)

CS101	Intro. to Microcomputer Appl.	3
CS105	Introduction to Computer Programming	3
MA103	Number Systems and Problem Solving	4
MA104	Geometry and Measurement	4
MA151	Calculus I	4
MA152	Calculus II	4
MA215	Fundamental Concepts of Mathematics	3
MA305	Computational Linear Algebra	3
MA207	Prin. of Statistical Methods	3
	or	
MA308	Probability and Mathematical Statistics	4
MA321	History of Mathematics	3
MA325	College Geometry	3

Other Requirements

Professional Education	21
Elementary Breadth Requirements (English, Science, Social Science)	41-42

Total Credits: 124

Bachelor of Science: Mathematics
Elementary Teaching Option (sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	CS101	Intro. to Microcomputer Applic.	3
MA151	Calculus I	4	MA152	Calculus II	4
PY101	Introduction to Psychology	4	SD101	Fundamentals of Speech	3
TE150	Reflections on Learning	3	PS110	Introduction to American Government and Politics	4
UN101	University Seminar I	1	UN103	University Seminar III	1
UN102	University Seminar II	1	UN104	University Seminar IV	1
		16			16
Second Year					
EN215	Intro. to Literature & Research	3	EN232	American Literature II	3
HS101	History of World Civilization I	4	HS102	History of World Civilization II	4
MA103	Number Systems and Problem Solving	4	MA104	Geometry and Measurement	4
MA215	Fund. Concepts of Mathematics	3	CS105	Intro. to Computer Programming	3
PY265	Child and Adolescent Development	3	TE250	Human Diversity, Power and Opportunity in Social Instit.	3
		17			17
Third Year					
MA321	History of Mathematics	3	CH108	Applied Chemistry	4
HU	(Aesthetics)	3-4	HU	(Aesthetics)	3-4
NS101	Conceptual Physics	3	MA325	College Geometry	3
GG201	World Regional Geography	4	BL105	Function of the Human Body	
	Ethics	3		*or*	4
		16-17	NS103/104	Environmental Science/ Environmental Science Lab	
					14-15
Summer					
GE114	Field Excursions in Earth Science	3			
TE 301	Learners, Learning and Teaching in Context	4			
		7			

Fourth Year

EN320	Responding to Writing	3
SO103	Cultural Diversity	3
MA305	Computational Linear Algebra	3
TE401	Teaching of Subject Matter to Diverse Learners	5
		14

EN335	Children's Literature	3
MA207	Prin. of Statistical Methods *or*	3-4
MA308	Probability and Mathematical Statistics	
TE402	Crafting Teaching Practice	6
	Interdisciplinary Science Course	3
		15-16

Fifth Year (Internship Year, MSU Graduate Courses)

TE501	Internship in Teaching Diverse Learners I	6
TE801	Professional Role and Teaching Practice I	3
TE802	Reflection and Inquiry in Teaching Practice I	3
		12

TE502	Internship in Teaching Diverse Learners II	6
TE803	Professional Role and Teaching Practice II	3
TE804	Reflction and Inquiry in Teaching Practice II	3
		12

Total Credits: 124

Bachelor of Science: Mathematics
Secondary Teaching Option

Departmental Requirements (44 credits)

CS105	Introduction to Computer Programming *or*	3
CS121	Survey of Computer Science	
MA151	Calculus I	4
MA152	Calculus II	4
MA215	Fundamental Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA251	Calculus III	4
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	4
MA310	Differential Equations	4
MA321	History of Mathematics	3
MA325	College Geometry	3
MA341	Abstract Algebra I	3
MA401	Mathematical Modeling	3

Other Requirements:

	Professional Education	21
	Academic Minor	20-25
	Completion of	
CH115	General Chemistry I *and*	5
CH116	General Chemistry II *or*	4
PH231	Applied Physics for Engineers and Scientists I *and*	4
PH232	Applied Physics for Engineers and Scientists II	4

Total Credits: 124

Bachelor of Science: Mathematics
Secondary Teaching Option (sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	MA152	Calculus II	4
MA151	Calculus I	4	SD101	Fundamentals of Speech	3
CS101	Intro. to Microcomputer Appl.		SO103	Cultural Diversity	3
	or	3		Elective (Minor)	3
CS105	Intro. to Computer Programming		UN103	University Seminar III	1
TE150	Reflections on Learning	3	UN104	University Seminar IV	1
UN101	University Seminar I	1			15
UN102	University Seminar II	1			
		15			
Second Year					
EN210	Research Paper Process**	3	MA216	Discrete Mathematics and Problem Solving	3
MA310	Differential Equations	4	MA251	Calculus III	4
MA215	Fund. Concepts of Mathematics	3	TE250	Human Diversity, Power and Opportunity in Social Instit.	3
CH115	General Chemistry I		CH116	General Chemistry II	
	or	4		*or*	4
PH231	Applied Physics for Engineers and Scientists I		PH232	Applied Physics for Engineers and Scientists	
	Elective (Minor)	3			14
		17			
Third Year					
HU	(Aesthetics)	3-4	HU	(Aesthetics)	3-4
MA308	Probability and Mathematical Statistics	4	MA325	College Geometry	3
MA321	History of Mathematics	3		Elective (Minor)	6
	Elective (Minor)	3		Interdisciplinary Science Course	3
	Ethics	3			
		16-17			
Summer					
TE301	Learners, Learning and Teaching in Context	4			
Fourth Year					
MA401	Mathematical Modeling	3	MA341	Abstract Algebra I	3
MA305	Computational Linear Algebra	3	TE402	Crafting Teaching Practice	6
TE401	Teaching of Subject Matter to Diverse Learners	5		Elective (Minor)	3
	Elective (Minor)	3		Elective	3
	Elective	3			15
		17			

Fifth Year (Internship Year, MSU Graduate Courses)

TE501	Internship in Teaching Diverse Learners I	6
TE801	Professional Role and Teaching Practice I	3
TE802	Reflection and Inquiry in Teaching Practice I	3
		12
		12

TE502	Internship in Teaching Diverse Learners II	6
TE803	Professional Role and Teaching Practice II	3
TE804	Reflction and Inquiry in Teaching Practice II	3
		12

Total Credits: 124

Minor Courses of Study

Computer Science Minor

For a minor in computer science a total of 21 semester credits must be selected as follows:

CS121	Survey of Computer Science	3
CS201	Data Structures & Algorithms	3
CS205	Computer Organization and Architecture	3
CS312	File & Database Management	3
Plus three additional CS courses at the 300 or 400 level		9

This is an approved teaching minor.

Mathematics Minor

For a minor in mathematics a total of at least 22 semester credits must be selected as follows:

MA143	Calculus for Engineering I	
	and	
MA144	Calculus for Engineering II	
	or	8
M151	Calculus I	
	and	
MA152	Calculus II	
MA207	Prin. of Statistical Methods	3
	or	
MA308	Probability and Mathematical Statistics	4

Plus additional mathematics courses numbered 215 or higher for a minimum of 22 credits.

Mathematics Secondary Teaching Option

For a minor in mathematics with a secondary teaching option a total of at least 23 credits must be selected as follows:

MA151	Calculus I	4
MA152	Calculus II	4
MA215	Fund. Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA207	Princ. of Statistical Methods	3
	or	
MA308	Probability and Mathematical Statistics	4
MA321	History of Mathemtics	3
MA325	College Geometry	3

Mathemtics Elementary Teaching Option

For a minor in mathematics with elementary teaching option a total of at least 21 credits must be selected as follows:

MA103	Number Systems and Problem Solving	4
MA104	Geometry & Measurement	4
MA151	Calculus I	4
MA207	Prin. of Statistical Methods	3
MA215	Fund. Concepts of Math	3
MA321	History of Mathematics	3

Department of Mechanical Engineering

Associate Professor Paul R. Duesing, Chair

Bachelor of Science: Mechanical Engineering

Individuals who choose a career in mechanical engineering will typically learn to apply the principles of science and mathematics to develop solutions to mechanically-related challenges or problems. Career opportunities include a broad spectrum in areas such as manufacturing, design, analysis, development, research, computer-aided drafting, maintenance and testing. Often these career choices move the individual toward engineering management as the time since graduation increases.

The mechanical engineering program at Lake Superior State University is designed to prepare the graduates with knowledge and skills for a rewarding, lifelong, engineering career. Class and lab sizes in the mechanical engineering department are kept small to allow effective interaction between students and faculty. The faculty place emphasis on, and are dedicated to, undergraduate teaching excellence. The curriculum offers two options: Design or robotics and control systems. The design option is structured to prepare individuals for careers in product and process design. The robotics and control systems option is structured to prepare individuals for careers in automated manufacturing. Both programs emphasize technical topics that are current in the engineering market and include a senior capstone design project, where the students work in multi-disciplinary teams on projects from industry.

The course work in both options is designed to provide the students with a solid foundation in the fundamentals and to provide an emphasis in the applications of engineering theory to real world problems. In the laboratories, the students work with manufacturing processes and materials testing. In the state-of-the-art automated manufacturing laboratories, emphasis is placed on the application of industrial robots, computer systems, programmable logic controllers, and vision/sensor systems for modern manufacturing. Communication, teamwork and interpersonal skills are reinforced throughout the curriculum.

Cooperative education opportunities exist for those students who wish to interlace professional work opportunities with their engineering studies.

To complete the bachelor of science in mechanical engineering, the student must complete the course requirements listed below and demonstrate writing proficiency. A grade of C (2.0) or better must be achieved in all courses listed as departmental requirements.

Bachelor of Science: Mechanical Engineering (125 credits)

Departmental Requirements (96 Credits)

Mathematics

MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA207	Prin. of Statistical Methods	3
MA208	Stat.Appl. for Qual.Control	1
MA243	Calculus and Linear Algebra for Engineers	4
MA343	Differential Equations for Engineers	4

Computer Science

EG265	"C" Programming	3

Sciences

CH108	Applied Chemistry	4
PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Engineering

EE210	Circuits and Machines	4
EE305	Analog and Digital Electronics	3
EG490	Engineering Design Project I	3
EG495	Engineering Design Project II	3
EM220	Statics	3
EM320	Dynamics	4
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME140	Computer-Aided Drafting & Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME225	Strength of Materials	3
ME275	Engineering Materials	3
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3
ME350	Machine Design I	4

Engineering Electives for Design Option

ME430	Thermodynamics II & Heat Transfer	4
ME442	Finite Element Analysis	4
ME455	Machine Design II *or*	4
ME425	Vibration	
RS365	Programmable Logic Controllers	3

Engineering Electives for Robotics & Control Systems Option

RS385	Robotics Engineering	3
RS430	Systems Integraton and Machine Vision	4
RS435	Automated Manufacturing Systems	4
RS460	Control Systems	4

General Education Requirements
(29 Credits)

Lower Division Courses

EN110	Freshman Composition	3
EN205	Technical Report Writing	3
UN101	University Seminar I	1
UN102	University Seminar II	1
UN103	University Seminar III	1
UN104	University Seminar IV	1
	Humanities or Aesthetics	4
SD101	Fundamentals of Speech	3

Upper Division Courses

	Humanities or Aesthetics	3
	Natural or Social Science	4/3
SO103	Cultural Diversity	3
	Social Science (Economics)	3

Bachelor of Science: Mechanical Engineering
(sample schedule)

FALL

First Year

MA150	Pre-Calculus (if needed)	(4)
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME110	Manufacturing Processes I	3
UN101-2	University Seminar I & II	2
EN110	Freshman Composition	3
		12-16

Second Year

MA144	Calculus for Engineering II	4
PH231	Applied Physics for Engineers and Scientists I	4
EG265	"C" Programming	3
EM220	Statics	3
EN205	Technical Report Writing	3
		17

SPRING

MA143	Calculus for Engineering I	4
CH108	Applied Chemistry	4
ME115	Manufacturing Process II	3
UN103-4	University Seminar III & IV	2
	Humanities or Aesthetics	4
		17

MA243	Calculus and Linear Algebra for Engineers	4
PH232	Applied Physics for Engineers and Scientists II	4
ME225	Strength of Materials	3
ME275	Engineering Materials	3
SD101	Fundamentals of Speech	3
		17

Third Year

MA343	Differential Equations for Engineers	4
EM320	Dynamics	4
ME350	Machine Design I	4
EE210	Circuits and Machines	4
		16

MA207	Prin. of Statistical Methods	3
MA208	Stat. Appl. for Qual. Control	1
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3
EE305	Analog & Digital Electronics	3
	Engineering Electives	3
		16

Fourth Year

	Natural/Social Science	3
EG491	Engineering Design Project I	3
	Engineering Electives	8
		14

EG495	Engineering Desing Project II	3
	Engineering Electives	4
	Humanities/Aesthetics	4
	Social Science (Econoics)	3
	Cultural Diversity	3
		17

Total Credits: 125

Students must complete one of the following options.

Mechanical Design Engineering Electives

ME442	Finite Element Analysis	4
ME430	Thermodynamics II & Heat Transfer	4
ME425	Vibration	
	or	4
ME455	Machine Design II	

RS365	Programmable Logic Controllers	3

Robotics & Control Systems Engineering Electives

RS460	Control Systems	4
RS430	System Integration and Machine Vision	4
RS385	Robotics Engineering	3
RS435	Automated Manufacturing Systems	4

Department of Engineering Technology/General Engineering

Professor David McDonald, Chair

Bachelor of Science: Engineering Management

The B.S. in engineering management degree program is designed to help prepare technical students for management opportunities. The program prepares students for a variety of management careers such as business, accounting, management, marketing, economics and manufacturing. This degree will not only expand the technical education of the individual, but also provide business skills which could qualify for advancement in industry. Upon receipt of this degree, the student would also have the option of pursuing a master of business administration (MBA) degree. Entry into the program requires an approved technical associate degree of 62 semester credits, minimum.

Bachelor of Science: Engineering Management

Required Courses

School of Business **(28-29 Credits)**

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
AC332	Cost Accounting	4
EC302	Managerial Economics	4
FN245	Principles of Finance	3
	or	
FN341	Managerial Finance	4
MN360	Principles of Management	3
MN471	Production Management	3
BA	Elective*	3

School of Engineering and Mathematics (24-25 Credits)

MA143	Calculus for Engineering I	4
MA207	Prin. of Statistical Methods	3
MA208	Stat.Appl. for Qual.Control	1
MT225	Statics & Strength of Materials	3
	or	
EE210	Circuits and Machines	4
RS365	Programmable Logic Controllers	3
RS280	Robotics Technology.	3
RS435	Automated Manufacturing Systems	4
	Technical Elective*	3

**Elective must be approved by an advisor in the appropriate school.*

General Education* (13 Credits)

	Humanities or Aesthetics	7
	Natural or Social Science Elective	3
SO103	Cultural Diversity	3

** Students must satisfy all University general education requirements.*

Bachelor of Science: Engineering Management
(sample schedule)

FALL			SPRING		
Third Year					
AC132	Principles Accounting I	4	AC133	Principles of Accounting II	4
MT225	Statics & Strength of Materials	3	RS365	Programmable Logic Controllers	3
	or		BA	Elective	3
EE210	Circuits and Machines	4	MA207	Prin. of Statistical Methods	3
MN360	Principles of Management	3	MA208	Stat. Appl for Qual. Control	1
MA143	Calculus for Engineering I	4		Technical Elective	3
	Natural or Social Science Elec.	3			17
		17-18			
Fourth Year					
AC332	Cost Accounting	4	RS435	Automated Manufacturing Systems	4
FN245	Principles of Finance	3	EC302	Managerial Economics	4
	or		SO103	Cultural Diversity	3
FN341	Managerial Finance	4		Humanities or Aesthetics	4/3
RS280	Robotics Technology	3			15/16
MN471	Production Management	3			
	Humanities or Aesthetics	4/3			
		17/18			

Technical and BA elective must be approved by faculty advisor.

Bachelor of Science: Environmental Engineering Technology

The B.S. in environmental engineering technology is a broad-based program that is designed to build strong foundations in environmental science, chemistry, engineering and engineering technology. The program will prepare the engineering technologist to manage environmental problems in air, water and solid waste pollution. The graduate will be able to assist engineers in designing products or processes that generate less waste and pollutants, plan and conduct studies to measure the chemical makeup and concentration of pollutants and map out a strategy for reducing them, assist companies with the growing maze of federal and state laws, and assist with municipal or industrial waste management.

In addition to the engineering technology components, both mechanical and electrical, the student will complete a strong science curriculum. By combining lecture classes and laboratory instruction, the student will gain an understanding of technical topics. There is a special emphasis on developing written and oral communication, teamwork and problem-solving skills.

Bachelor of Science: Environmental Engineering Technology

Required Courses

Engineering and Technology Courses		
EG490	Engineering Design Project I	3
MT225	Statics and Strength of Materials	3
ET110	Applied Electricity & PLC	4
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME430	Thermodynamics II & Heat Transfer	4
ME335	Fluid Mechanics	3
ET175	Applied Electronics	4
ME336	Thermodynamics I	3
	Technical Elective	4
Environmental Science Courses		
EV341	Environmental Chemistry I	3
EV313	Solid and Hazardous Waste	3
EV311	Environmental Law	2
EV425	Environmental System Analysis	3
Mathematics and Science Courses		
MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
CH115	General Chemistry I	5
PH221	Elements of Physics I	4
CH225	Organic Chemistry I	3
CH231	Quantitative Analysis	3
GE410	Engineering Geology	4
MA143	Calculus for Engineering I	4
CH116	General Chemistry II	4
NS103	Intro.to Environmental Science	3
NS104	Intro.to Environ.Science Lab	1
MA207	Prin. of Statistical Methods	3
MA208	Stat.Appl. for Qual.Control	1
MA144	Calculus for Engineering II	4
BL204	General Microbiology	4
CH342	Environmental Chemistry II	4
CH361	Physical Chemistry	4
Support Courses		
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
CS101	Intro. to Microcomputer Appl.	3
SD110	Fundamentals of Speech	3
EC302	Managerial Economics	4
General Education Courses		
UN101	University Seminar I	1
UN102	University Seminar II	1
UN103	University Seminar III	1
UN104	University Seminar IV	1
	Humanities or Aesthetics	7
	Natural or Social Science	3
SO103	Cultural Diversity	3
	Total Credits:	**133**

Bachelor of Science: Environmental Engineering Technology *(sample schedule)*

FALL			SPRING		
First Year					
MA109	Trigonometry and Vectors	2	MA143	Calculus for Engineering I	4
MA140	Algebra for Technologists	4	CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3	CH116	General Chemistry II	4
CH115	General Chemistry I	5	NS103	Intro. to Environmental Science	3
UN101-2	University Seminar I & II	2	NS104	Intro. to Environmental Science Lab	1
		17	UN103-4	University Seminar III & IV	2
					17
Second Year					
PH221	Elements of Physics I	4	MA207	Prin. of Statistical Methods	3
MT225	Statics and Strength of Materials	3	MA144	Calculus for Engineers II	4
CH225	Organic Chemistry I	3	BL204	General Microbiology	4
EN205	Technical Report Writing	3	SD101	Fundamentals of Speech	3
ET110	Applied Electricity & PLC	4	MA208	Stat. Appl. for Qual. Control	1
		17	SO103	Cultural Diversity	3
					18
Third Year					
	Technical Elective	4	EV311	Environmental Law	2
CH231	Quantitative Analysis	3	ME335	Fluid Mechanics	3
EV341	Environmental Chemistry I	3	ET175	Applied Electronics	4
	Natural/Social Science	3	ME336	Thermodynamics I	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4	CH342	Environmental Chemistry II	4
		17			16
Fourth Year					
EG490	Engineering Design Project I	3	EC302	Managerial Economics	4
	Humanities/Aesthetics	3		Humanities/Aesthetics	4
GE410	Engineering Geology	4	CH361	Physical Chemistry	4
EV313	Solid and Hazardous Waste	3	EV425	Environmental Systems Analysis	3
ME430	Thermodynamics II and Heat Transfer	4			15
		17			

Associate Degree: Telecommunications Engineering Technology

The telecommunications engineering technology degree program combines course work in electronics, communications systems and computer networking to prepare graduates for the exciting and fast growing telecommunications field. Telecommunications technicians are involved in the installation, testing and operation of various communications network systems including computer data systems, telephone systems, and television and radio systems.

The associate degree in telecommunications engineering technology program combines fundamental courses in English, mathematics and science with specialized technical courses. The technical instruction includes courses in electronics,

computer programming and networking, and modern communication systems. All engineering technology courses combine technical analysis in the lecture classes with "hands-on" applications in the laboratory sessions. Students will have direct contact with expert professors in both the lecture and laboratory.

Cooperative education employment and intern opportunities exist for students who wish to gain related professional work experience. Telecommunications graduates who are interested in additional education should consult with their faculty advisors to select appropriate elective courses. Graduates who are interested in the application of electronics and communications systems in an industrial environment can easily transfer into the B.S. manufacturing engineering technology program at LSSU. Those graduates who are interested in management positions within the telecommunications industry can pursue additional education in the B.S. engineering management program at LSSU.

To complete the associate degree in telecommunications engineering technology, the student must complete the course requirements listed below and demonstrate writing proficiency.

Associate Degree: Telecommunications Engineering Technology

Departmental Requirements

Engineering Technology		
ET110	Applied Electricity & PLC	4
	Technical Electives	7
ET240	Communications I	4
EE125	Digital Fundamentals	4
ET125	Electrical Drafting	3
ET175	Applied Electronics	4
ET255	Computer Networks	4
ET245	Communications II	4
MT265	Quality Engineering	2
	or	
MA207	Prin. of Statistical Methods	3
	Technical Electives	7

Mathematics and Science Courses		
MA140	Algebra for Technologists	4
MA109	Trigonometry and Vectors	2
PH221	Elements of Physics I	4
MA143	Calculus for Engineering I	4
Support Courses		
EN110	Freshman Composition	3
CS101	Intro. to Microcomputer Appl.	3
EN205	Technical Report Writing	3
SD101	Fundamentals of Speech	3
	Natural/Social Science Elective	3

Associate Degree: Telecommuncations Engineering Technology *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	EN205	Technical Report Writing	3
ET110	Applied Electricity & PLC	4	EE125	Digital Fundamentals	4
MA140	Algebra for Technologists	4	ET125	Electrical Drafting	3
MA109	Trigonometry & Vectors	2	SD101	Fundamentals of Speech	3
CS101	Intro. to Microcomputer Appl.	3	ET175	Applied Electronics	4
		16			17

Second Year

	Technical Elective*	4
PH221	Elements of Physics I*	4
MA143	Calculus for Engineering I	4
ET240	Communications I	4
		16

	Natural/Social Science Elective	3
	Technical Elective*	3
ET255	Computer Networks	4
ET245	Communications II	4
MT265	Quality Engineering	2
	or	
MA207	Prin. of Statistical Methods	3
		16-17

**For those students selecting engineering or manufacturing engineering technology track, replace the second year courses with appropriate courses for that degree.*

Associate Degree: General Engineering

This curriculum is for students who plan to transfer to engineering programs at other universities after two years at Lake Superior State University. Students who have not decided on an engineering major should also enroll in this program.

Departmental Requirements

Engineering Courses

EG265	"C" Programming	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4

Mathematics and Science Courses

CH115	General Chemistry I	5
CH116	General Chemistry II	4
MA151	Calculus I	4
MA152	Calculus II	4
MA251	Calculus III	4
MA310	Differential Equations	3
PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Support Courses

EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fundamentals of Speech	3
	Humanities or Aesthetics	4/3
RA	Electives	2
	Electives	4

Associate Degree: General Engineering

FALL

First Year

CH115	General Chemistry I	5
EN110	Freshman Composition	3
MA151	Calculus I	4
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
RA	Elective	1
		17

Second Year

EC201	Principles of Macroeconomics	3
EN210	Research Paper Process	3
MA207	Prin. of Statistical Methods	3
PH231	Applied Physics for Engineers and Scientists I	4
	Elective	4
		17

SPRING

EG265	"C" Programming	3
CH116	General Chemistry II	4
MA152	Calculus II	4
	Humanities/Aesthetics	4
RA	Elective	1
		16

EC202	Principles of Microeconomics	3
MA251	Calculus III	4
MA310	Differential Equations	3
PH232	Applied Physics for Engineers and Scientists II	4
SD101	Fundamentals of Speech	3
		17

Associate Degree: General Engineering Technology

Associate degree program in general engineering technology is a program intended for students who have decided to major in engineering technology but have not decided on a specific area. The student will receive extra advising and schedule courses in different areas to assist in determining career interests. As soon as an engineering technology major is chosen, the student will transfer to that program.

Departmental Requirements

Engineering and Engineering Technology Courses

ET101	Exploring Technology	4
ET110	Applied Electricity & PLC	4
MT225	Statics and Strength of Materials	3
	Technical Electives	3-4

Mathematics and Science Courses

MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
MA143	Calculus for Engineers I	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

Support Courses

CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
SD101	Fundamentals of Speech	3
	Social Science Elective	4

Associate Degree: General Engineering Technology
(sample schedule)

FALL

First Year

ET110	Applied Electricity & PLC	4
ET101	Exploring Technology	4
	Technical Elective[1]	3-4
MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
		17-18

Second Year

EN205	Technical Report Writing	3
PH221	Elements of Physics I	4
MT225	Statics & Strength	3
	Technical Electives[2]	4
		14

SPRING

	Technical Elective[1]	3-4
CS101	Intro. to Microcomputer Appl.	3
SD101	Fundamentals of Speech	3
MA143	Calculus for Engineering I	4
EN110	Freshman Composition	3
		16-17

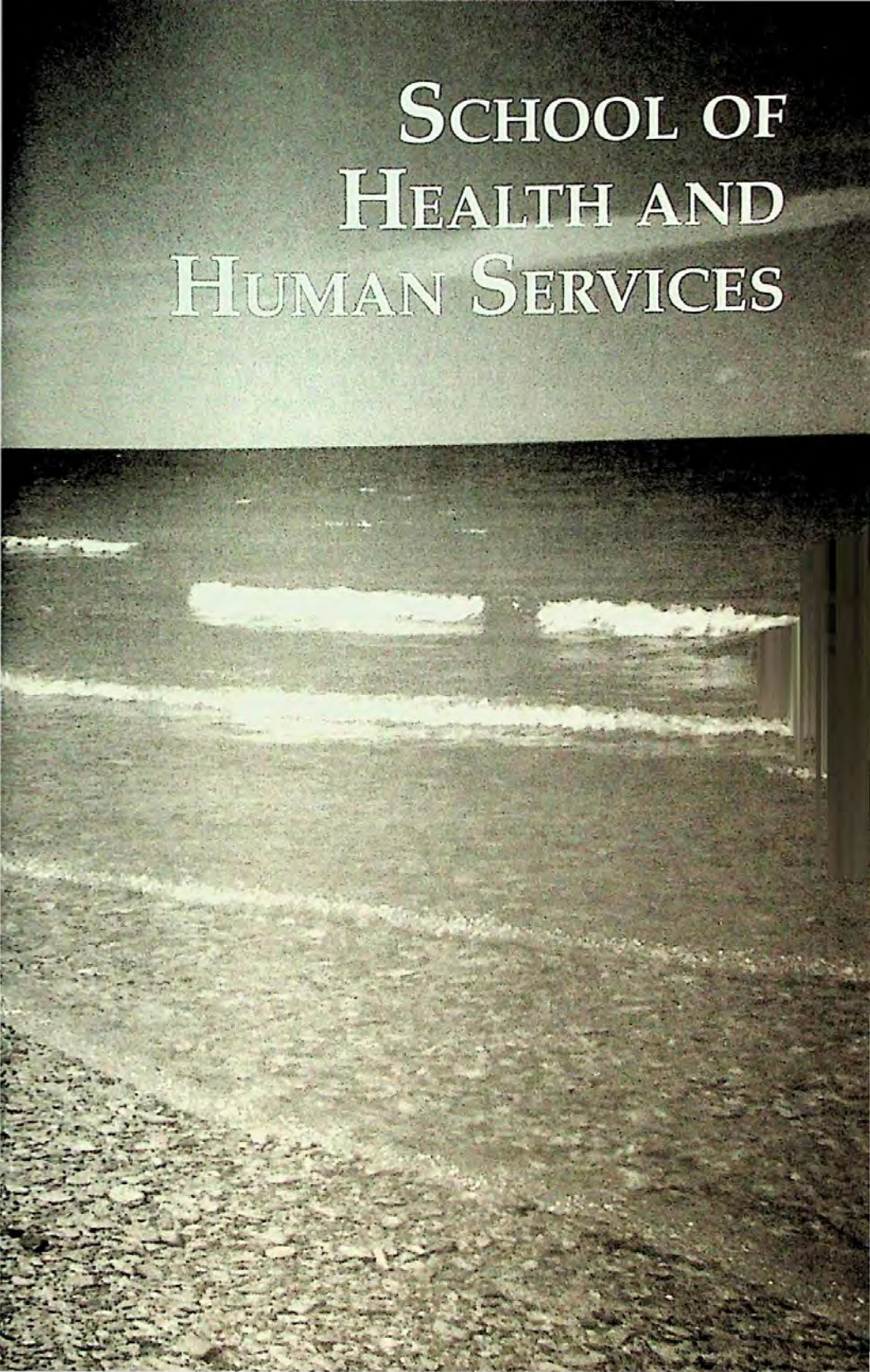
	Social Science Elective	4
PH222	Elements of Physics II	4
	Technical Electives[2]	8
		16

[1]*First year technical electives to be chosen from:*

ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME110	Manufacturing Processses I	3
ET175	Applied Electronics	4

[2]*Second year technical electives to be chosen from:*

RS280	Robotics Technology	4
ET175	Applied Electronics	4
ET240	Communications I	4
ET255	Computer Networks	4
ME110	Manufacturing Processes I	3
MT265	Quality Engineering	2
ME115	Manufacturing Processes II	3
MT215	Design for Manufacturing	4


SCHOOL OF
HEALTH AND
HUMAN SERVICES

BACCALAUREATE

Criminal Justice
Exercise Science
Fire Science
Nursing
Recreation Management
Therapeutic Recreation

ASSOCIATE

Criminal Justice
Fire Science
Health/Fitness Specialist

MINOR

Corrections
Fire Science
Health Care Administration
Institutional Loss Control
Law Enforcement
Loss Control
Recreation Studies

School of Health and Human Services

Department of Criminal Justice/ Fire Science

Faculty: Chair, Criminal Justice and Fire Science, Associate Professor James Blashill; Professor Terry Heyns; Associate Professors James Madden, Paige Ralph; Assistant Professors Elizabeth Foley, Houston Tucker, Dennis Holmes, Paige Ralph.

Programs include: Criminal justice baccalaureate degree with emphasis in: corrections, criminalistics, generalists, law enforcement, loss control and public safety; fire science baccalaureate degrees with emphasis in engineering technology, hazardous materials and generalists; and two-year associate degrees in corrections, fire science and law enforcement.

Michigan Law Enforcement Officers Training Council (MLEOTC) Certification: Students enrolled in the emphasis in criminalistics, law enforcement or public safety in the criminal justice baccalaureate degree may be eligible for MLEOTC certification. Upon graduation and the completion of the mini-academy, these students may be eligible for employment with local law enforcement agencies in Michigan without further training.

MLEOTC Mini-Academy: Students enrolled in the MLEOTC track will have to complete a seven-week mini-academy held after the end of the school year. Contained within the mini-academy are skill hours such as firearms, driving and defense tactics. Only students who are enrolled in the MLEOTC track at the beginning of their senior year will be eligible for enrollment in the mini-academy.

Michigan Corrections Officer Training Council Certification: Students enrolled in the associate or baccalaureate degree in corrections will also take the five courses necessary for this certification.

Canadian students may substitute CJ202 Canadian Criminal Law and CJ406 Advanced Canadian Jurisprudence for CJ319 Substantive Criminal Law and CJ409 Procedural Law. PS160 Introduction to Canadian Government may be substituted for PS110 Introduction to U.S. Government.

Entrance Requirements: To qualify for admission as freshmen, applicants must meet the minimum criteria of Lake Superior State University. Criminalistics and fire science students must have completed two units of algebra and at least one laboratory course, preferably chemistry, in high school.

Code of conduct: Majors in criminal justice and fire science will be required to sign a code of conduct. The code specifies certain behavior on the part of students and also states that violation of criminal laws and/or University regulations may end in the separation of the student from the criminal justice/fire science program.

Bachelor of Science: Criminal Justice
Corrections Emphasis

General Education Requirements
(25* credits)

Major Requirements (46 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ130	Client Relations in Corrections	3
CJ140	Correctional Client Growth and Development	3
CJ220	Institutional Corrections	3
CJ240	Community Based Corrections	3
CJ250	Correctional Law	3
CJ319	Substantive Criminal Law	3
CJ321	Ethical Issues in Public Safety	3
CJ330	Correctional Casework	3
CJ345	Statistics and Design for Public Safety	4
CJ355	Juvenile Justice	3
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9

Support Courses (20 credits)

PS110	Intro. to American Government & Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology**	3
SO214	Criminology**	3
SO103	Cultural Diversity**	3

Minor (20 credits)

Electives (13 credits)

**Eight hours included in support courses.*
***B.S. requirement.*

Bachelor of Science: Criminal Justice
Corrections Emphasis (sample schedule)

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3	SD101	Fundamentals of Speech	3
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
CJ110	Introduction to Corrections	3	CJ130	Client Relations in Corrections	3
EN110	Freshman Composition	3		Elective	5
	Elective	3			15
		15			
Second Year					
CJ140	Correctional Client Growth and Development	3	PS120	Intro. to Legal Processes	3
CJ240	Community Based Corrections	3	CJ220	Institututional Corrections	3
EN210	Research Paper Process	3	PY259	Abnormal Psychology	3
PY101	Introduction to Psychology	4	SO103	Cultural Diversity	3
	Elective	2		Natural Science Elective	4
		15			16
Third Year					
CJ250	Correctional Law	3	CJ330	Correctional Casework	3
SO214	Criminology	3	CJ321	Ethical Issues in Public Safety	3
	Natural Science Elective	4		Humanities Elective	4
	Elective	3	CJ345	Statistics & Design for Public Safety	4
	Minor	3	CJ355	Juvenile Justice	3
		16			17
Fourth Year					
CJ401	Senior Seminar	3	CJ402	Criminal Justice Internship	3
CJ319	Substantive Criminal Law	3		Humanities Elective	4
	Minor	9		Minor	8
		15			15

Bachelor of Science: Criminal Justice
Criminalistics Emphasis

General Education Requirements
(17* credits)

Major Requirements (36 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ201	Firearms Training	1
CJ243	Investigation	3
CJ313	Crisis Intervention of Deviant Behavior**	3
CJ319	Substantive Criminal Law**	3
CJ321	Ethical Issues in Public Safety	3
CJ345	Statistics and Design for Public Safety	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law**	3
CJ444	Criminalistics	4

Support Courses (60 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany***	2
CH115	General Chemistry I***	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3
CH351	Introductory Biochemistry	4
HE190	Prehospital Emergency Care & Crisis Intervention I**	3
HE191	Prehospital Emergency Care & Crisis Intervention II**	3
NS101	Conceptual Physics	3
PS110	Intro. to American Government and Politics	4
PY101	Intro to Psychology	4
PY259	Abnormal Psychology	3
RA197	Physical Fitness for Law Enforcement****	2
SO214	Criminology	3

Electives (11 credits)

**Sixteen hours included in support.*
***MLEOTC courses.*
****B.S. requirement.*
*****Repeated twice.*

Bachelor of Science: Criminal Justice
Criminalistics Emphasis (sample schedule)

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3	CH116	Principles of Chemistry II	4
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
CH115	Principles of Chemistry I	5	SD101	Fundamentals of Speech	3
EN110	Freshman Composition	3	BL109	General Biology	4
PY101	Introduction to Psychology	4			18
		18			
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3	CH232	Instrumental Analysis	3
BL110	Zoology	2	BL111	Botany	2
CJ201	Firearms	1	PY259	Abnormal Psychology	3
CJ243	Investigation	3	EN210	Research Paper Process	3
		13		Elective	2
					17
Third Year					
CH351	Biochemistry	4	NS101	Conceptual Physics	3
	Humanities Elective	4	SO214	Criminology	3
	Elective	7	CJ345	Statistics & Design for Public Safety	4
		15	CJ402	Criminal Justice Internship	3-9
				Humanities Elective	4
					17

Fourth Year

CJ319	Substantive Criminal Law*	3
	Electives	2
CJ401	Senior Seminar	3
HE190	Pre-Hospital Emergency Care & Crisis Intervention I*	3
RA197	Physical Fitness for Law Enforcement	1
		12

CJ321	Ethical Issues in Public Safety*	3
CJ313	Crisis Intervention of Deviant Behavior*	3
CJ444	Criminalistics*	4
CJ409	Procedural Criminal Law*	3
HE191	Prehospital Emergency Care & Crisis Intervention II*	3
RA197	Physical Fitness for Law Enforcement**	1
		17

**MLEOTC course.*
***MLEOTC students only.*

Bachelor of Science: Criminal Justice
Generalist Emphasis

General Education Requirements (25* credits)

Major Requirements (42 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Correction	3
CJ345	Statistics and Design for Public Safety	4
CJ401	Senior Seminar	3
	Other CJ Classes****	26

Support Courses** (20 credits)

PS110	Intro. to American Government and Politics	4
PS120	Legal Processes	3
PY101	Intro to Psych	4
PY259	Abnormal Psychology***	3
SO214	Criminology***	3
SO103	Cultural Diversity***	3

Electives (37 credits)

**Eight hours included in support courses.*
***At least 20 hours of support or electives at 300-400 level.*
****B.S. requirement.*
*****Minimum 19 credit hours at 300-400 level.*

Bachelor of Science: Criminal Justice
Generalist Emphasis (sample schedule)

FALL

First Year

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
EN110	Freshman Composition	3
CJ	Elective	3
	Elective	3
		15

Second Year

CJ110	Introduction to Corrections	3
EN210	Research Paper Process	3
PY101	Introduction to Psychology	4
	Humanities Elective	4
CJ	Elective	3
		17

SPRING

PS110	Intro. to American Government and Politics	4
PS120	Legal Process	3
SD101	Fundamentals of Speech	3
CJ	Elective	3
		13

PY259	Abnormal Psychology	3
	Humanities Elective	4
	Natural Science Elective	4
CJ	Elective	3
SO103	Cultural Diversity	3
		17

Third Year

	Elective	3	SO214	Criminology	3
CJ	Electives	6		Natural Science	4
	Elective	5	CJ345	Statistics & Design for Public Safety	4
		14		Electives	5
					16

Fourth Year

CJ401	Seminar	3	CJ	Electives	8
	Electives	12		Electives	9
		15			17

Bachelor of Science: Criminal Justice
Law Enforcement Emphasis

General Education Requirements (25* credits)

Major Requirements (48 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ201	Firearms Training	1
CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3
CJ243	Investigation	3
CJ313	Crisis Intervention of Deviant Behavior	3
CJ319	Substantive Criminal Law	3
CJ321	Ethical Issues in Public Safety	3
CJ345	Statistics for Design and Public Safety	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4
FS101	Introduction to Fire Science	3

Support Courses (20 credits)

PS110	Intro. to American Government and Politics**	4
PS120	Intro. to Legal Processes**	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology	3
SO214	Criminology	3
SO103	Cultural Diversity	3

Electives (31 credits)

**Eight hours included in support courses.*
***B.S. requirement.*

Bachelor of Science: Criminal Justice
LawEnforcement Emphasis (sample schedule)

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3	CJ	Elective	3
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
CJ110	Introduction to Corrections	3	PS120	Introduction to Legal Processes	3
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
	Elective	4	SO103	Cultural Diversity	3
		16			16
Second Year					
CJ201	Firearms	1	CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	1	PY259	Abnormal Psychology	3
EN210	Research Paper Process	3	SO214	Criminology	3
FS101	Introduction to Fire Science	3		Humanities Elective	4
PY101	Introduction to Psychology	4		Natural Science Elective	4
CJ243	Investigation	3			17
		17			

Third Year

	Elective	3	CJ313	Crisis Intervention of Deviant Behavior	3
	Humanities Elective	4	CJ321	Ethics	3
	Natural Science	4	CJ345	Statistics	4
	Elective	2		Elective	5
		13			15

Fourth Year

CJ401	Senior Seminar	3	CJ402	Criminal Justice Internship	3-9
CJ319	Substantive Criminal Law	3	CJ409	Procedural Criminal Law	3
	Electives	8	CJ444	Criminalistics	4
		14		Electives	6
					16

Certification: Criminal Justice
Law Enforcement Emphasis

General Education Requirements
(25* credits)

Major Requirements (48 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ201	Firearms Training	1
CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3
CJ243	Investigation	3
CJ313	Crisis Intervention of Deviant Behavior**	3
CJ319	Substantive Criminal Law**	3
CJ321	Ethical Issues in Public Safety**	3
CJ345	Statistics and Design for Public Safety	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law**	3
CJ444	Criminalistics**	4
FS101	Introduction to Fire Science	3

Support Courses (28 credits)

HE190	Prehospital Emergency Care & Crisis Intervention I**	3
HE191	Prehospital Emergency Care & Crisis Intervention II**	3
PS110	Intro. to American Government and Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology***	3
RA197	Physical Fitness for Law Enforcement****	2
SO214	Criminology***	3
SO103	Cultural Diversity***	3

Electives (23 credits)

**Eight hours included in support courses.*
***MLEOTC courses.*
****B.S. requirement.*
*****Repeated twice.*

Bachelor of Science: Criminal Justice
Certification in Law Enforcement (sample schedule)

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3	CJ	Elective	3
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
CJ110	Introduction to Corrections	3	PS120	Intro. to Legal Process	3
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
	Elective	3	PY101	Introduction to Psychology	4
		15			17

Second Year

CJ201	Firearms	1	CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3	PY259	Abnormal Psychology	3
EN210	Research Paper Process	3	SO214	Criminology	3
FS101	Introduction to Fire Science	3		Humanities Elective	4
CJ243	Investigation	3		Natural Science Elective	4
	Elective	3			17
		16			

Third Year

	Humanities Elective	4	CJ402	Criminal Justice Internship	3-9
	Natural Science	4	CJ345	Statistics & Design or Public Safety	4
SO103	Cultural Diversity	3		Electives	7
	Elective	4			14
		15			

Fourth Year

CJ319	Substantive Criminal Law*	3	CJ321	Ethical Issues in Public Safety*	3
	Electives	3	CJ313	Crisis Intervention of Deviant Behavior*	3
CJ401	Senior Seminar	3	CJ444	Criminalistics*	4
RA197	Physical Fitness for Law Enforcement I**	1	RA197	Physical Fitness for Law Enforcement I**	1
HE190	Pre-hospital Emergency Care and Crisis Intervention I*	3	CJ409	Procedural Criminal Law*	3
		13	HE191	Pre-hospital Emergency Care and Crisis Intervention II*	3
					17

**MLEOTC course.*
***MLEOTC students only.*

Three-Year Degree Plan for a Bachelor of Science Criminal Justice Following the NRT Degree

See Department of Biology

Students with a particular interest in state and federal laws enacted to protect our natural resources and federal restrictions on the use of our renewable resources should consider obtaining both an associate degree in natural resources technology (two years) and a bachelor of science degree in criminal justice (three additional years). The NRT degree will provide the student with a good general background in natural resources and the criminal justice degree will allow the student to be fully qualified for many different law enforcement opportunities. Jobs for conservation law officers are limited, but the above configuration of degrees prepares a student to be highly competitive for openings that do occur. Students selecting this course of study should work closely with their advisor in order to complete both degrees in the five-year span. After completing the two-year NRT associate degree, students would complete the following sequence of courses. This plan assumes MLEOTC certification and 91 additional hours following the NRT degree.

Bachelor of Science: Criminal Justice *(sample schedule)*

FALL			SPRING		
Third Year					
CJ101	Intro. to Criminal Justice	3		Electives	3
CJ102	Police Process	3	CJ206	Law Enforcement/Loss Control Internship	3
CJ110	Introduction to Corrections	3	SO214	Criminology	3
PS110	Intro. to American Government and Politics	4		Humanities Elective	4
	Humanities Elective	4			13
		17			
Fourth Year					
CJ201	Firearms Training	1	CJ345	Statistics & Design for Public Safety	4
CJ212	Loss Control	3	CJ402	Criminal Justice Internship	3
CJ243	Investigation	3	PS120	Intro. to Legal Process	3
FS101	Introduction to Fire Science	3	PY259	Abnormal Psychology	3
PY101	Introduction to Psychology	4	SO103	Cultural Diversity	3
		14			16
Fifth Year					
CJ319	Substantive Criminal Law*	3	CJ313	Crisis Intervention of Deviant Behavior	3
CJ401	Senior Seminar	3	CJ321	Ethical Issues in Public Safety*	3
HE190	Prehospital Emergency Care and Crisis Intervention I*	3	CJ409	Procedural Criminal Law*	3
RA197	Physical Fitness for Law Enforcement**	1	CJ444	Criminalistics*	4
	Elective	4	HE191	Prehospital Emergency Care and Crisis Intervention II*	3
		14	RA197	Physical Fitness for Law Enforcement**	1
					17

**MLEOTC course.*
***MLEOTC students only.*

Bachelor of Science: Criminal Justice
Loss Control Emphasis

General Education Requirements (25* credits)

Major Requirements (54 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ201	Firearms Training	1
CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3
CJ243	Investigation	3
CJ306	Security Systems	3
CJ319	Substantive Criminal Law	3
CJ341	Fire Cause & Arson Investigation	3
CJ345	Statistics	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS321	Industrial Fire Protection	3

Support Courses (32 credits)

CS101	Intro. to Microcomputer Appl.	3
MN365	Human Resource Management	3
MN451	Labor Law	4
PS110	Intro. to American Government and Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology**	3
SO214	Criminology**	3
SO103	Cultural Diversity**	3
TC110	Industrial Safety	2

Electives (13 credits)

**Eight hours included in support courses.*
***B.S. requirement.*

Bachelor of Science: Criminal Justice
Loss Control Emphasis (sample schedule)

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3	FS111	Hazardous Materials	3
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
CJ212	Loss Control	3	PS120	Introduction to Legal Process	3
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
PY101	Introduction to Psychology	4	SO214	Criminology	3
		16			16
Second Year					
CJ110	Introduction to Corrections	3	CJ206	Law Enforcement/Loss Control Internship	3
CJ201	Firearms Training	1	CS101	Intro. to Micromputer Appl.	3
FS101	Introduction to Fire Science	3	PY259	Abnormal Psychology	3
CJ243	Investigation	3		Humanities Elective	4
EN210	Research Paper Process	3		Natural Science Elective	4
TC110	Industrial Safety	2			17
		15			
Third Year					
SO103	Cultural Diversity	3	CJ306	Security Systems	3
	Humanities Elective	4	CJ341	Fire Cause & Arson Investigation	3
	Natural Science Elective	4		Electives	3
	Elective	3	FS321	Industrial Fire Protection	3
		14	CJ345	Statistics & Design for Public Safety	4
					16
Fourth Year					
CJ401	Senior Seminar	3	CJ402	Criminal Justice Internship	3-9
CJ319	Substantive Criminal Law	3	CJ409	Procedural Criminal Law	3
MN365	Human Resource Management	3	CJ444	Criminalistics	4
	Electives	4	MN451	Labor Law	4
		13		Electives	3
					17

Bachelor of Science: Criminal Justice
Public Safety Emphasis

General Education Requirements
(25* credits)

Major Requirements (54 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ201	Firearms Training	1
CJ206	Law Enforcement/Loss Control Internship	3
CJ243	Investigation	3
CJ313	Crisis Intervention and Deviant Behavior**	3
CJ319	Substantive Criminal Law**	3
CJ321	Ethical Issues in Public Safety	3
CJ345	Statistics & Design for Public Safety	4
CJ401	Criminal Justice Senior Seminar *or*	3
FS401	Fire Science Senior Seminar	
CJ402	CJ Internship *or*	3-9
FS403	Fire Science Internship	
CJ409	Procedural Criminal Law**	3
CJ444	Criminalistics	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics and Pumps	3
FS205	Fire Protection Systems & Equipment	3
FS211	Tactics & Strategy	3

Support Courses (28 credits)

HE190	Prehospital Emergency Care & Crisis Intervention I**	3
HE191	Prehospital Emergency Care & Crisis Intervention II**	3
PS110	Intro. to American Government and Poltics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology***	3
SO214	Criminology***	3
SO103	Cultural Diversity***	3
RA197	Physical Fitness for Law Enforcement****	2

Electives (17 credits)

**Eight hours included in support courses*
***MLEOTC courses*
****B.S. requirement*
*****Repeated twice*

Bachelor of Science: Criminal Justice
Public Safety Emphasis (sample schedule)

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3	PS110	Intro. to American Government and Politics	4
CJ102	Police Process	3	PS120	Intro. to Legal Process	3
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
FS101	Introduction to Fire Science	3		Natural Science Electives	4
	Elective	3	FS111	Hazardous Materials	3
		15			17
Second Year					
CJ201	Firearms Training	1	CJ206	Law Enforcement/Loss Control Internship	3
CJ243	Investigation	3	FS205	Fire Protection Systems Equipment	3
FS204	Fire Protection Hydraulics and Pumps	3	FS211	Tactics & Strategy	3
PY101	Introduction to Psychology	4	PY259	Abnormal Psychology	3
EN210	Research Paper Process	3		Humanities Elective	4
	Elective	3			16
		17			
Third Year					
	Humanities Elective	4	SO214	Criminology	3
	Natural Science Elective	4	CJ402	Criminal Justice Internship *or*	3-9
SO103	Cultural Diversity	3	FS403	Fire Science Internship	
	Electives	3	CJ345	Statistics & Design for Public Safety	4
		14		Electives	4
					14
Fourth Year					
CJ319	Substantive Criminal Law*	3	CJ321	Ethical Issues in Public Safety*	3
RA197	Physical Fitness for Law Enforcement**	1	CJ313	Crisis Intervention of Deviant Behavior*	3
CJ401	Criminal Justice Senior Seminar *or*	3	CJ444	Criminalistics*	4
FS401	Fire Science Senior Seminar		RA197	Physical Fitness for Law Enforcement*	1
	Electives	4	CJ409	Procedural Criminal Law*	3
HE190	Pre-hospital Emergency Care and Crisis Intervention I	3	HE191	Prehospital Emergency Care and Crisis Intervention II	3
		14			17

**MLEOTC course.* ***MLEOTC students only.*

FIRE SCIENCE

Bachelor of Science: Fire Science
Engineering Technology Emphasis

General Education Requirements (29* credits)

Major Requirements (38 credits)

CJ341	Fire Cause and Arson Investigation	3
CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics and Pumps	3
FS205	Fire Protection Systems & Equipment	3
FS211	Tactics & Strategy	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3-9
FS420	Fire Science Certification	4

Support Courses (43 credits)

CS101	Intro. to Microcomputer Appl.	3
MA109	Trigonometry & Vectors	2
MA140	Algebra for Technologists	4
MA143	Calculus for Engineering I**	4
MA144	Calculus for Engineering II**	4
MT225	Statics & Strength of Materials	3
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3
ME430	Thermodynamics II and Heat Transfer	4
PH221	Elements of Physics I	4
TC101	Construction I	3
TC102	Construction II	3
TC118	Drafting	3

Electives (14 credits)

**Four hours included in support courses.*
***B.S. requirement.*

Bachelor of Science: Fire Science
Engineering Technology Emphasis (sample schedule)

FALL			SPRING		
First Year					
FS101	Introduction to Fire Science	3	CS101	Intro. to Microcomputer Appl.	3
	Electives	3	TC102	Construction II	3
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
MA140	Algebra for Technologists	4	MA109	Trigonometry & Vectors	2
TC101	Construction I	3	FS111	Hazardous Materials	3
		16			14
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems & Equipment	3
EN205	Technical Report Writing		FS211	Tactics and Strategy	3
	or	3	MA144	Calculus for Engineering II	4
EN210	Research Paper Process		TC118	Drafting	3
MA143	Calculus for Engineering I	4		Humanities Elective	4
	Social Science Elective	4			17
		14			

Third Year

FS301	Code Enforcement Inspection and Fire Prevention	3
NS	Life Science Elective	4
PH221	Physics I	4
	Humanities Elective	4
		15

FS321	Industrial Fire Protection	3
CJ341	Fire Cause & Arson Investigation	3
MT225	Statics & Strength of Materials	3
ME335	Fluid Mechanics	3
CJ345	Statistics & Design for Public Safety	4
CJ345		16

Fourth Year

FS401	Senior Seminar	3
ME336	Thermodynamics	3
	Electives	6
	Social Science	4
		16

FS403	Fire Science Internship	3
FS420	Fire Management	4
ME430	Thermodynamics II and Heat Transfer	4
	Electives	5
		16

Bachelor of Science: Fire Science
Generalist Emphasis

General Education Requirements (33 credits)

Major Requirements (57 credits)

CJ341	Fire Cause & Arson Investigation	3
CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Prot ection Hydraulics & Pumps	3
FS205	Fire Protection System Equipment	3
FS211	Tactics & Strategy	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3-9
FS420	Fire Science Certification	4

Minor (20 credits)

Support Courses (6 credits)

TC101	Construction I	3
TC102	Construction II	3

Electives* (28 credits)

**Must include eight hours B.S. requirements.*

Bachelor of Science: Fire Science
Generalist Emphasis (sample schedule)

FALL			SPRING		
First Year					
FS101	Introduction to Fire Science	3		Social Science Elective	4
TC101	Construction I	3		Humanities Elective	4
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
	Elective	6	TC102	Construction II	3
		15	FS111	Hazardous Materials	3
					17
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems Equipment	3
EN205	Technical Report Writing		FS211	Tactics and Strategy	3
	or	3	BS	Requirement	4
EN210	Research Paper Process			Natural Science Elective	4
	Social Science Elective	4		Elective	3
	Natural Science Elective	4			17
		17			

Third Year

FS301	Code Enforcement Inpsection and Fire Prevention	3
BS	Requirement	4
	Humanities Elective	4
	Minor	4
		15

FS321	Industrial Fire Protection	3
CJ341	Fire Cause & Arson Investigation	3
	Minor	6
CJ345	Statistics for Design & Public Safety	4
		16

Fourth Year

FS401	Senior Seminar	3
	Minor	6
	Electives	6
		15

FS403	Fire Science Internship	3
FS420	Fire Science Certification	4
	Minor	4
	Electives	4
		15

Bachelor of Science: Fire Science
Hazardous Materials Emphasis

General Education Requirements (25* credits)

Major Requirements (38 credits)

CJ341	Fire Cause and Arson Investigation	3
CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics & Pumps	3
FS205	Fire Protection System Equipment	3
FS211	Tactics & Strategy	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3-9
FS420	Fire Science Certification	4

Support Courses (57 credits)

BL109	General Biology	4
BL110	General Zoology**	2
BL111	General Botany	2
BL230	Introduction to Soils	4
CH115	General Chemistry I	5
CH116	General Chemistry II**	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3
CH351	Introductory Biochemistry	4
GG108	Physical Geography: Meteorology & Climatology	4
NS102	Introduction to Geology	4
NS103	Environmental Science	3
NS104	Environmental Science Lab	1
TC101	Construction I	3
TC102	Construction II	3

Electives (4 credits)

**Eight hours included in support courses.*
***B.S. requirement.*

Bachelor of Science: Fire Science
Hazardous Materials Emphasis (sample schedule)

FALL

First Year

FS101	Introduction to Fire Science	3
	Electives	4
EN110	Freshman Composition	3
TC101	Construction I	3
CH115	Principles of Chemistry I	5
		18

SPRING

SD101	Fundamentals of Speech	3
CH116	Principles of Chemistry II	4
BL109	General Biology	4
FS111	Hazardous Materials	3
TC102	Construction II	3
		17

Second Year

FS204	Fire Protection Hydraulics and Pumps	3
CH225	Organic Chemistry I	4
CH231	Quantitative Analysis I	3
BL110	Zoology	3
EN205	Technical Report Writing	
	or	3
EN210	Research Paper Process	
		15

FS205	Fire Protection Systems Equipment	3
	Humanities Elective	4
CH226	Organic Chemistry II	4
CH232	Instrumental Analysis	3
BL111	Botany	2
		16

Third Year

GG108	Physical Geology	4
BL230	Soils	4
	Social Science Elective	4
	Humanities Elective	4
		16

FS321	Industrial Fire Protection	3
NS102	Geology	4
FS211	Tactics and Strategy	3
CJ345	Statistics & Design for Public Safety	4
		14

Fourth Year

FS401	Senior Seminar	3
CH351	Biochemistry	4
FS301	Code Enforcement Inspection and Fire Prevention	3
NS103	Environmental Science	3
NS104	Environmental Science Lab	1
		14

FS403	Fire Science Internship	3
FS420	Fire Management	4
CJ341	Fire Cause & Arson Investigation	3
	Social Science	4
		14

Associate Degree: Criminal Justice
Corrections Emphasis

Basic Requirements (9 credits)

Major Requirements (30 credits)

CJ101	Intro. to Criminal Justice	3
CJ110	Introduction to Corrections	3
CJ140	Correctional Client Growth & Development	3
CJ130	Client Relations in Correcitons	3
CJ220	Institutional Corrections	3
CJ240	Community Based Corrections	3
CJ250	Correctional Law	3
CJ319	Substantive Criminal Law	
	or	3
CJ202	Canadian Criminal Law	
CJ330	Correctional Casework	3
CJ355	Juvenile Justice	3

Support Courses (6 credits)

S0214	Criminology	3
PS120	Introduction to Legal Process	
	or	3
PS160	Intro. to Canadian Government and Politics	

Electives (17 credits)

Associate Degree: Criminal Justice
Corrections Emphasis (sample schedule)

FALL

First Year

CJ101	Intro. to Criminal Justice	3
CJ110	Introduction to Corrections	3
CJ140	Correctional Client Growth and Development	3
EN110	Freshman Composition	3
	Elective	4
		16

SPRING

SD101	Fundamentals of Speech	3
CJ130	Client Relations in Corrections	3
	Electives	6
PS120	Introduction to Legal Process	
	or	3
PS160	Intro. to Canadian Government and Politics	
		15

Second Year

CJ240	Community Based Corrections	3
CJ250	Correctional Law	3
CJ319	Substantive Criminal Law	
	or	3
CJ202	Canadian Criminal Law	
EN210	Research Paper Process	3
	Electives	4
		16

CJ220	Institutional Corrections	3
CJ330	Correctional Casework	3
SO214	Criminology	3
CJ355	Juvenile Justice	3
	Electives	3
		15

Associate Degree: Criminal Justice
Law Enforcement Emphasis

Basic Requirements (9 credits)

Major Requirements (16 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ201	Firearms Training	1
CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3
CJ243	Investigation	3

Support Courses (17 credits)

PS110	Introduction to American Government and Politics	4
PS120	Introduction to Legal Process	3
SO103	Cultural Diversity	3
S0214	Criminology	3
PY101	Introduction to Psychology	4

Electives (20 credits)

Associate Degree: Criminal Justice
Law Enforcement Emphasis (sample schedule)

FALL

First Year

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
EN110	Freshman Composition	3
SO214	Criminology	3
	Electives	3
		15

Second Year

CJ201	Firearms Training	1
CJ212	Loss Control	3
CJ243	Investigation	3
	Electives	8
	Electives	15

SPRING

PY101	Introduction to Psychology	4
PS110	Intro. to American Government and Politics	3
SD101	Fundamentals of Speech	3
SO103	Cultural Diversity	3
	Electives	3
		15

CJ206	Law Enforcement/Loss Control Internship	3
EN210	Research Paper Process	3
PS120	Introduction to Legal Process	3
	Electives	6
		15

Associate Degree: Fire Science

Basic Requirements (9 credits)

Major Requirements (21 credits)

CJ341	Fire Cause & Arson Investigation	3
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics & Pumps	3
FS205	Fire Protection Systems Equipment	3
FS211	Tactics & Strategy	3
FS321	Industrial Fire Protection	3

Support Courses (21 credits)

HE190	Prehospital Emergency Care & Crisis Intervention I	3
HE191	Prehospital Emergency Care & Crisis Intervention II	3
SO, PY or PS Electives		9
TC101	Construction I	3
TC102	Construction II	3

Electives (11 credits)
(FS420 required for MFFTC certification)

Associate Degree: Fire Science *(sample schedule)*

FALL			SPRING		
First Year					
FS101	Introduction to Fire Science	3	HE191	Prehospital Emergency Care and Crisis Intervention II	3
FS111	Hazardous Materials	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition	3	TC102	Construction II	3
TC101	Construction I	3	SO, PY or PS Electives		3
HE190	Prehospital Emergency Care and Crisis Intervention I	3		Electives	4
		15			16
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems Equipment	3
EN205	Technical Report Writing		FS211	Tactics & Strategy	3
	or	3	FS321	Industrial Fire Protection	3
EN210	Research Paper Process		CJ341	Fire Cause & Arson Investigation	3
SO, PY or PS Electives		6		Electives	4
	Electives	3			16
		15			

Minor Courses of Study

Corrections Minor

Total Credits Required: 21

Required Courses:

CJ110	Introduction to Corrections	3
CJ220	Institutional Corrections	3
CJ240	Community Based Corrections	3
CJ319	Substantive Criminal Law	3

Minimum of 9 hours from:
(At least one must be 300-400)

CJ101	Intro. to Criminal Justice	3
CJ130	Client Relations in Corrections	3
CJ140	Correctional Client Growth & Development	3
CJ243	Investigation	3
CJ250	Correctional Law	3
CJ330	Correctional Casework	3
CJ355	Juvenile Justice	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law	3

Fire Science Minor

Total Credits Required: 21

Required Courses:

FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics and Pumps	3
FS205	Fire Protection Systems Equipment	3

Minimum of 9 hours from:

FS211	Tactics and Strategy	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS321	Industrial Fire Protection	3
CJ341	Fire Cause & Arson Investigation	3
FS420	Fire Science Certification	4
TC101	Construction I	3
TC102	Construction II	3

Law Enforcement Minor

Total Credits Required: 21

Required Courses:

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3

Minimum of 15 hours from:

CJ202	Canadian Criminal Law	3
CJ206	Law Enforcement/Loss Control Internship	3
CJ243	Investigation	3
CJ313	Crisis Intervention of Deviant Behavior	3
CJ319	Substantive Criminal Law	3
CJ321	Ethical Issues in Public Safety	3
CJ406	Advanced Canadian Jurisprudence	3
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4

Loss Control Minor

Total Credits Required: 21

Required Courses:

CJ212	Loss Control	3
CJ306	Security Systems	3

Minimum of six hours from:

CJ202	Canadian Criminal Law	3
CJ319	Substantive Criminal Law	3
CJ406	Advanced Canadian Jurisprudence	3
CJ409	Procedural Criminal Law	3

Minimum of nine hours from:

MN365	Human Resource Management	3
CS101	Intro. to Microcomputer Appl.	3
MN451	Labor Law	4
MK281	Marketing Principles & Strategy	3
MN360	Principles of Management	3

Institutional Loss Control Minor

Total Credits Required: 21

Required Courses:

CJ212	Loss Control	3
CJ306	Security Systems	3
CJ341	Fire Cause & Arson Investigation	3
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS321	Industrial Fire Protection	3

This minor may not be used for fire science majors.

Department of Nursing

Faculty: Dr. Mae E. Markstrom, Dean of School of Health and Human Services; Dr. Judith J. Sadler, Associate Professor and Nursing Department Chair; Professor Carole Connaughton; Associate Professors Alice I. Halsey, Carol A. Campagna; Assistant Professors Donna M. Anleitner, Margaret R. Hanson, Ruth K. Johnston-Pike, Lynn M. Kabke, Diane K. Lewis, MaryAnne Shannon.

The Department of Nursing offers a bachelor of science degree in nursing which is based on the belief that nursing is goal-oriented, directed toward assisting human beings in health promotion, maintenance, restoration and rehabilitation. The program is based upon human needs theory throughout the life cycle and is built on a liberal arts foundation in the belief that all aspects of society must be considered influential factors in the health of human beings.

Accreditation: The bachelor of science in nursing program is approved by the Michigan Board of Nursing and is accredited by the National League for Nursing.

Courses: Courses offered by the department are in nursing and health sciences. Nursing courses provide the core content of the nursing major and are limited to students accepted into the nursing programs. Health science courses provide a wide range of knowledge and skills useful for preparation in related health careers and in the delivery of health services in the community.

Clinical experiences: The nursing program is unique in its international affiliation. Clinical nursing experience is obtained at hospitals and community agencies in Sault Ste. Marie, Ontario, as well as at health care and community agencies in Sault Ste. Marie, Michigan, and the surrounding area. The LSSU Wellness CARE Centers provide opportunities for practice in nurse-managed community nursing centers.

Bachelor of Science in Nursing

The Department of Nursing offers two curricular tracks to the bachelor of science degree in nursing: the four-year program and the two-year completion program for the registered nurse.

These programs provide students with the opportunity to acquire knowledge, values and skills necessary for the practice of professional nursing. They offer them the opportunity to:

Demonstrate skills of critical thinking and decision making in nursing practice. *Promote* the health of individuals, families, groups and communities in a variety of settings. *Assist* clients of all ages in their adaptation to actual and potential stressors. *Demonstrate* independent use of the nursing process in health promotion, maintenance, restoration and rehabilitation. *Integrate* professional values into nursing practice. *Practice* within the ethical, moral and legal parameters of the nursing profession. *Demonstrate* responsibility and accountability for evaluating the effectiveness of one's nursing practice. *Evaluate* nursing research findings for possible utilization in nursing practice. *Integrate* leadership and management skills into the nursing role. *Synthesize* theoretical/empirical knowledge from nursing, the physical and behavioral sciences, and humanities in nursing practice. *Collaborate* with the health care team and consumer to improve health care service, using knowledge of the political system. *Use* effective interpersonal communication skills as client advocate, caregiver, health educator and change agent.

Course distribution requirements facilitate development of liberal backgrounds in physical science, social science and humanities. The curriculum lays a scientific basis for expanding roles in nursing practice. The nursing curriculum provides an interdisciplinary major and does not require a minor to meet graduation requirements. Students interested in a minor should refer to the appropriate Catalog section. A total of 127 credits is required to complete a bachelor of science degree in nursing.

Bachelor of Science Nursing Four-Year Program

Pre-nursing entrance requirements: To qualify for admission to the pre-nursing program, applicants must satisfy University admission requirements described in the admission section of the Catalog. (This information is also included in the Viewbook.)

For students with college-level achievement, the opportunity will be offered, by means of examination, to obtain course credit or placement into an advanced course.

High school academic subjects include a minimum of one unit of biology, one of chemistry, three of English and two of algebra. Additional science and mathematics courses are highly recommended.

Entrance requirements to nursing: Following successful completion of the pre-nursing requirements, students will be admitted to the nursing program based upon academic achievement and competency in mathematics. Mathematics competency is required prior to the sophomore year. Entrance into nursing requires a cumulative grade point average of 2.5 or above in nursing, nursing support and English courses. Required academic courses are separated into two groups:

1. Nursing support courses (anatomy and physiology, microbiology, life chemistry, mathematics, psychology, sociology, nutrition, pharmacology, pathophysiology, computer applications in the health sciences and statistics;) and
2. General education requirements (English, humanities and speech).

A grade of C or above is required in all nursing, nursing support courses and English courses. A grade of D in other general education or elective courses is accepted. Students should file a Declaration of Intent to enter the nursing program in the departmental office by March 1. Students selected for nursing must complete all pre-nursing course requirements satisfactorily to remain on the accepted list. A maximum of 50 students with the highest grade point average will be accepted.

Transfer credit will be granted on an individual basis. Only those courses in which the student receives a grade of C or better are transferrable. Credits for baccalaureate nursing courses and pharmacology are transferable for five years.

Time requirements for program completion is four academic years; however, completion may require more than four years for students who do not meet all entrance requirements.

Progression and readmission policies are detailed in the Baccalaureate Nursing Student Handbook.

Students are responsible for transportation to and from clinical agencies, as well as additional costs incurred by enrollment in the nursing program. Costs, academic and general information are listed in the Baccalaureate Nursing Student Handbook.

Licensure: Graduates of this program are eligible to write the NCLEX-RN examination administered by the Michigan Board of Nursing for licensure as a registered nurse (R.N.). Canadian students must pass the NCLEX-RN examination prior to applying for licensure in Ontario.

Requirements for the bachelor of science degree in nursing four-year program are as follows:

Nursing (57 credits)		
NU110	Intro. to Professional Nursing I	1
NU211	Intro. to Professional Nursing II	3
NU212	Health Appraisal	3
NU213	Fundamentals of Nursing	5
NU325	Parent/Newborn Nursing	5
NU326	Parent/Child Nursing	6
NU327	Adult Nursing I	8
NU431	Adult Nursing II	8
NU432	Community Health Nursing	5
NU433	Mental Health Nursing	5
NU434	Nursing Research	3
NU435	Management in Nursing	3
NU436	Contemporary Issues in Nursing	2
Health Sciences (10 credits)		
HE208	Nutrition	2
HE209	Pharmacology	3
HE232	Pathophysiology	3
HE235	Computer Applications in Health Sciences	2
HE352	Health Issues of Aging Populations	3

Other Disciplines (16 credits)		
BL121	Human Anatomy & Physiology I	4
BL223	Clinical Microbiology	3
CH104	Life Chemistry I	3
MA207 or PY210	Prin. of Statistical Methods or Statistics	3
General Education (35 credits)		
PY101	Introduction to Psychology	4
PY155	Lifespan Development	3
SO101	Introduction to Sociology	3
BL122	Human Anatomy & Physiology II	4
CH105	Life Chemistry II	4
	Humanities Electives	8
EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fundamentals of Speech	3
General Electives (9 credits)		9
	Total credits:	**127**

A sample four-year schedule of courses for this program follows. The planned sequence of courses may be modified to meet the needs of individual students.

Bachelor of Science: Nursing
Four-Year Program (sample schedule)

FALL			**SPRING**		
First Year					
EN110	Freshman Composition	3		Humanities Electives	4
PY101	Introduction to Psychology	4	NU110	Intro. to Professional Nursing I	1
SO101	Introduction to Sociology	3	CH104	Life Chemistry I	3
SD101	Fundamentals of Speech	3	BL122	Human Anatomy & Physiology II	4
BL121	Human Anatomy & Physiology I	4	PY155	Lifespan Development	3
		17	HE208	Nutrition	2
					17
Second Year					
EN210	Research Paper Process	3	BL223	Clinical Microbiology	3
NU211	Intro. to Professional Nursing II	3		Humanities Elective	4
CH105	Life Chemistry II	4	NU213	Fundamentals of Nursing	5
NU212	Health Appraisal	3	HE209	Pharmacology	3
HE232	Pathophysiology	3			15
		16			

Third Year

HE352	Health Issues of Aging Population	3	PY210	Statistics	
NU325	Parent/Newborn Nursing	5		*or*	3
NU326	Parent/Child Nursing	6	MA207	Princ. of Statistical Methods	
	Elective	3	NU327	Adult Nursing I	8
		17	HE235	Computer Applications in Health Sciences	2
				Elective	3
					16

Fourth Year

NU431	Adult Nursing II	8	NU432	Community Health Nursing	5
NU434	Nursing Research	3	NU433	Mental Health Nursing	5
NU435	Management in Nursing	3	NU436	Contemporary Issues in Nursing	2
		14		Elective	3
					15

Bachelor of Science in Nursing: Completion Program for R.N. Students

Entrance requirements: To qualify for admission to the R.N. completion program, applicants must satisfy University admission requirements as described in the admission section of the Catalog. (This information is also included in the Viewbook.)

For students with college-level achievement, the opportunity will be offered, by means of examination, to obtain course credit or placement into an advanced course.

Applicants must be graduates of a state- or provincial-approved associate degree or diploma nursing program with a cumulative grade point average of 2.5 in all nursing, nursing support and English courses. Nursing support courses include: chemistry, mathematics, anatomy and physiology, microbiology, statistics, nutrition, pharmacology, pathophysiology, computer applications in health sciences, psychology and sociology courses. Credit may be granted for basic nursing courses, nutrition and pharmacology upon writing the required NLN challenge tests within five years prior to admission and achieving scores at the 50 percentile or above. NLN tests may be repeated once; students must enroll in the course if not successful on second writing. Psychomotor skills validation and mathematics competency are also required. Students may be admitted to the University at any point, but may not be admitted to nursing core courses until they have fulfilled the above requirements.

Required admission credentials: Submit to Admissions Office: standard LSSU admission application; transcripts from previous nursing school(s) and college(s). Submit to Department of Nursing: work experience and reference list; copy of current Michigan or Ontario professional nursing license; NLN test scores for Mobility Profile II (Book 1), Nursing of Childbearing Family, and Nursing of Children. All credentials must be on file preceding semester of entry.

Transfer credits: Transfer credit may be granted on an individual basis for equivalent general education and support courses. Only those courses in which students received a grade of C or better may be transferred. Credit for pharmacology and baccalaureate nursing courses are accepted for five years after completion of course. A maximum of 32 semester hours credit in basic nursing courses may be transferred. Partial credit for NU433 may be obtained by writing the Mental Health NLN test prior to the course and achieving a score at the 50 percentile or above.

Time required for completion will depend upon the number of transfer credits and credits received by examination. Most registered nurses can complete the program in two years.

Progression and readmission policies are detailed in the Baccalaureate Nursing Student Handbook.

Students are responsible for transportation to clinical agencies and additional costs incurred by enrollment in the nursing program. Costs, academic and general information are listed in the Baccalaureate Nursing Student Handbook.

Requirements for the bachelor of science degree in nursing (RN completion program) are as follows:

Nursing (57 credits)		
NU213	Fundamentals of Nursing**	5
NU325	Parent/Newborn Nursing**	5
NU326	Parent/Child Nursing**	6
NU327	Adult Nursing I**	8
NU431	Adult Nursing II**	8
NU360	Professional Nursing Concepts	4
NU363	Comprehensive Health Appraisal	3
NU432	Community Health Nursing	5
NU433	Mental Health Nursing	5
NU434	Nursing Research	3
NU435	Management in Nursing	3
NU436	Contemporary Issues in Nursing	2
Health Sciences (10 credits)		
HE208	Nutrition**	2
HE209	Pharmacology**	3
HE232	Pathophysiology**	3
HE235	Computer Applications in Health Sciences	2
HE352	Health Issues of Aging Populations	3

Other Disciplines (16 credits)		
BL121	Human Anatomy & Physiology I	4
BL223	Clinical Microbiology	3
CH104	Life Chemistry I	3
MA207	Prin. of Statistical Methods *or*	3
PY210	Statistics	
General Education (35 credits)		
PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	3
BL122	Human Anatomy & Physiology II	4
CH105	Life Chemistry II	4
EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fundamentals of Speech	3
	Humanities Electives	8
SO	Elective	3
General Electives		9
	Total credits:	**127**

***Challenge examinations available.*

A sample two-year schedule of courses for this program follows. The planned sequence of courses may be modified to meet individual needs.

Bachelor of Science: Nursing Completion Program for the Registered Nurse

Prerequisite courses for entrance to program:		
BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4
BL223	Clinical Microbiology	3
EN110	Freshman Composition	3
EN210	Research Paper Process	3
HE208	Nutrition	2
HE209	Pharmacology	3
PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	3
		29
NLN Challenge Exams		
NU213	Fundamentals of Nursing	5
NU325	Parent/Newborn Nursing	5
NU326	Parent/Child Nursing	6
NU327	Adult Nursing I	8
NU431	Adult Nursing II	8
		32

Bachelor of Science: Nursing Completion Program
(sample schedule)

FALL			SPRING		
First Year					
NU360	Professional Nursing Concepts	4	CH104	Life Chemistry I	3
NU363	Comprehensive Health Appraisal	3	HE235	Computer Applications in Health Science	2
HE232	Pathophysiology	3		Humanities Elective	4
SD101	Fundamentals of Speech	3		Social Science Elective	3
HE352	Health Issues of Aging Populations	3		Elective	3
		16			15
Second Year					
CH105	Life Chemistry II	4	NU434	Nursing Research	3
NU432	Community Health Nursing	5	NU435	Management in Nursing	3
NU433	Mental Health Nursing	5	NU436	Contemporary Issues in Nursing	2
PY210	Statistics			Humanities Elective	4
	or	3		Electives	6
MA207	Prin. of Statistical Methods				18
		17			

Minor Course of Study

Health Care Administration

Total Credits Required: 30

Required Courses:

AC230	Fundamentals of Accounting	4
FN245	Principles of Finance	3
MN365	Human Resource Management	3
MN469	Collective Bargaining	3
ES140	Health & Fitness	3
HE208	Nutrition	2
HE210	Intro. to Health Care Concepts	3
HE352	Health Issues of Aging Populations	3
BA354	Legal and Financial Issues in Health Care Administration	3
ID399	Internship	3

Department of Recreation Studies and Exercise Science

Faculty: Department Chair, Professor Sally Childs; Assistant Professors Lee Gardiner, Debra McPherson, Stephen Yanni; Instructor Joe Susi.

Bachelor of Science: Exercise Science

The exercise science major concentrates on developing an understanding of the physiological and psychological consequences of exercise in various populations, and applying this knowledge to fitness, clinical and research settings. The need for exercise science professionals is growing in each of these areas as exercise continues to occupy a prominent role in enhancing the quality of life and maintaining health; and, gains prominence in the treatment and prevention of lifestyle diseases such as cardiovascular disease, hypertension, obesity and diabetes. Employment opportunities for exercise science professionals are becoming more varied and requiring increased levels of expertise and technical skills. This major is designed to prepare students to meet these professional challenges through a skill-development approach in the critical areas of exercise testing and exercise prescription. The required 125 graduation credits emphasize course work in physiology, pathophysiology, sports medicine, laboratory procedures, research methods, exercise psychology and computer applications.

Exercise Science (38 credits)

ES141	Introduction to Movement	3
ES242	Sports Medicine	3
ES248	Psychology of Sport and Performance and Coaching	3
ES295	Practicum	2
ES342	Exercise Physiology	3
ES344	Kinesiology	3
ES348	Fitness Evaluation II — Laboratory Procedures	3
ES358	Research Methods in Exercise Science	3
ES390	Recreation Leader Apprenticeship	2
ES440	Exercise Physiology Seminar	2
ES444	Exercise Prescription	2
ES492	Internship	6
ES496	Selected Research Topics	3

Cognate Requirements (33 credits)

BL121	Anatomy & Physiology I	4
BL122	Anatomy & Physiology II	4
CH104	Life Chemistry I	3
CH105	Life Chemistry II	4
CS101	Intro. to Microcomputer Appl.	3
HE208	Nutrition	2
HE232	Pathophysiology	3
MA207	Princ. of Statistical Methods	3
PY101	Introduction to Psychology	4
PY385	Health Psychology	3

Departmental Electives (10 credits)

ES140	Health and Fitness	3
ES240	Techniques of Athletic Training	2
ES295	Practicum	2
ES349	Orthopaedic Assessment in Sports Medicine	3
ES390	Recreation Leader Apprenticeship	1
ES442	Electrocardiography in Exercise Science	2
ES481	Professional Development Seminar	1
RA211	Water Safety & Lifeguard Instructor	2
RC101	Intro. to Recreation & Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC212	Instructional Methods in Adapted Aquatics	2
RC240	Foundations of Therapeutic Recreation	3
RC482	Administration of Recreation and Leisure Services	4

Cognate Electives (12 credits)		
BL330	Animal Physiology	4
BL423	Immunology	4
HE190	Prehospital Emergency Care & Crisis Intervention I	3
HE191	Prehospital Emergency Care & Crisis Intervention II	3
HE209	Pharmacology	3
HM480	Grantwriting	3
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4
PY459	Physiological Psychology	3

Elective credits (approximately 11) and general education requirements must be completed so that at least 125 semester credits have been earned.

Bachelor of Science: Exercise Science
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	CH104	Life Chemistry I	3
ES/RC	Elective	3	CS101	Intro. to Microcomputer Appl.	3
	General Electives	5	ES141	Introduction to Movement	3
Soc Sci	Elective	2	PY101	Introduction to Psychology	4
		13			13
Second Year					
BL121	Human Anatomy & Physiology I	4	BL122	Human Anatomy & Physiology II	4
CH105	Life Chemistry II	4	EN210	Research Paper Process	3
ES242	Sports Medicine	3	ES295	Practicum	1
ES248	Psychology of Sport and Performance and Coaching	3		General Electives	3
	Humanities	4	HE208	Nutrition	2
		18		Humanities	4
					17
Third Year					
ES342	Exercise Physiology	3	ES344	Kinesiology	3
MA207	Statistics	3	ES348	Fitness Evaluation II — Laboratory Procedures	3
HE232	Pathophysiology	3	ES358	Research Methods in Exercise Science	3
ES/RC	Elective	3	ES390	Recreation Leader Apprenticeship	1
SD101	Fundamentals of Speech	3	ES/RC	Elective	2
		15		General Electives	3
					15
Fourth Year					
	Cognate Elective	6		Cognate Elective	6
ES440	Exercise Physiology Seminar	2	ES295	Practicum	1
ES444	Exercise Prescription	2	ES390	Recreation Leader Apprenticeship	1
ES496	Selected Research Topics	3	ES/RC	Elective	2
PY385	Health Psychology	3	Soc Sci	Elective	1
		16			13
Summer					
ES492	Internship	6			
(following either 3rd or 4th year)					

Athletic Training Concentration

A person who receives a degree concentration in athletic training, which is also referred to as sports medicine, will become a highly skilled professional who deals directly with injuries that occur to athletes. The athletic trainer works closely with physicians and other health care professionals in order to provide today's athletes with the best medical care possible. Those who pursue a career in athletic training may seek employment on the high school, college or professional sport level. In addition, the athletic trainer may be employed in sports medicine and health fitness clinics, which have increased in numbers during the past decade. All of the above-mentioned positions usually require certification by the National Athletic Trainers' Association. Students completing the concentration at Lake Superior State University will be more marketable in the field of exercise science and eligible for a variety of graduate programs in athletic training and sports medicine throughout the country. Any student wishing to achieve eligibility to sit for the National Athletic Trainers' Association certification examination will receive individual guidance in that direction.

Exercise Science (38 credits)

ES141	Introduction to Movement	3
ES240	Techniques of Athletic Training	2
ES242	Sports Medicine	3
ES295	Practicum	2
ES342	Exercise Physiology	3
ES344	Kinesiology	3
ES348	Fitness Evaluation II — Laboratory Procedures	3
ES349	Orthopaedic Assessment in Sports Medicine	3
ES358	Research Methods in Exercise Science	3
ES440	Exercise Physiology Seminar	2
ES444	Exercise Prescription	2
ES492	Internship	6
ES496	Selected Research Topics	3

Cognate Requirements (45 credits)

BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4
CH104	Life Chemistry I	3
CH105	Life Chemistry II	4
HE190	Prehospital Emergency Care & Crisis Intervention I	3
HE191	Prehospital Emergency Care & Crisis Intervention II	3
HE208	Nutrition	2
HE209	Pharmacology	3
HE232	Pathophysiology	3
MA207	Prin. of Statistical Methods	3
PY101	Introduction to Psychology	4
PY201	Communication Skills in Counseling	3
PY240	Behavior Management	3
PY385	Health Psychology	3

Departmental Electives (9 credits)

ES140	Health and Fitness	3
ES248	Psychology of Sport and Performance and Coaching	3
ES295	Practicum	2
ES390	Recreation Leader Apprenticeship	1
ES442	Electrocardiography in Exercise Science	2
ES481	Professional Development Seminar	1
RA211	Water Safety and Lifeguard Instructor	2
RC101	Intro. to Recreation & Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC212	Instructional Methods in Adapted Aquatics	2
RC240	Foundations of Therapeutic Recreation	3
RC270	Sports Management	3
RC370	Recreation for the Elderly	3
RC482	Administration of Recreation and Leisure Services	4

Cognate Electives (9 credits)

BL220	Genetics	3
BL330	Animal Physiology	4
BL423	Immunology	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

Elective credits (approximately 11) and general education requirements must be completed so that at least 127 semester credits have been earned.

Bachelor of Science: Exercise Science
Athletic Training Concentration (sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	CH104	Life Chemistry I	3
	General Electives	6	ES140	Health and Fitness*	3
HE190	Prehospital Emergency Care & Crisis Intervention I	3	ES141	Introduction to Movement	3
		12	HE191	Prehospital Emergency Care & Crisis Intervention II	3
			PY101	Introduction to Psychology	4
					16
Second Year					
BL121	Human Anatomy & Physiology I	4	BL122	Human Anatomy & Physiology II	4
CH105	Life Chemistry II	4	ES349	Orthopaedic Assessment in Sports Medicine	3
ES242	Sports Medicine	3		Humanities	4
ES240	Techniques of Athletic Training	2	EN210	Research Paper Process	3
	Humanities	4		General Electives	3
		17			17
Third Year					
ES342	Exercise Physiology	3	ES358	Research Methods in Exercise Science	3
PY385	Health Psychology	3	ES344	Kinesiology	3
MA207	Princ. of Statistical Methods	3	ES348	Fitness Evaluation II — Laboratory Procedures	3
PY240	Behavior Management	3	ES390	Recreation Leader Apprenticeship*	1
SD101	Fundamentals of Speech	3	HE208	Nutrition	2
		15	PY201	Communication Skills in Counseling	3
					15
Summer					
ES492	Internship *(following 3rd year)*	6			
Fourth Year					
	Cognate Elective	3		Cognate Elective	6
ES440	Exercise Physiology Seminar	2	ES295	Practicum	2
ES444	Exercise Prescription	2	ES/RC	Elective	2
ES496	Selected Research Topics	3		General Electives	2
ES/RC	Elective	3	HE209	Pharmacology	3
HE232	Pathophysiology	3			15
		16			

**Suggested electives.*

Bachelor of Arts/Science: Recreation Management

The recreation management degree is a program of study designed to prepare those students seeking employment opportunities in the recreation/leisure field that demand sound management skills. Career choices abound within commercial, resort, industrial, military, municipal, state, federal government and voluntary recreation settings. The need for qualified leaders, supervisors and directors who possess management and recreation skills is increasing. Career specialization can be achieved by selecting recreation electives that promote a concentration, enhancing a degree with a built-in business minor.

Bachelor of Arts: Recreation Management

Department Requirements (29 credits)

ES140	Health and Fitness	3
RA	Recreational Activity	1
RA	Recreational Activity	1
RC101	Introduction to Recreation	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC295	Practicum	1
RC390	Recreation Leader Apprenticeship	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC436	Therapeutic Recreation and Leisure Science Research	2
RC481	Professional Development Seminarl	
RC482	Administration of Recreation and Leisure Services	4
RC492	Internship	6

Business Requirements (25 credits)

AC230	Fundamentals of Accounting	4
BA231	Business Communications	3
BA254	Business Law I	3
EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
FN245	Principles of Finance	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3

Cognate Requirements (20 credits)

BL105	Functions of the Human Body	4
CS101	Intro. to Microcomputer Appl.	3
HE181	First Aid	1
HM480	Grantwriting	3
PS130	Intro. to State and Local Government	4
	or	
PS160	Intro. to Canadian Government	3
PY101	Introduction to Psychology	4
	or	
PY155	Lifespan Development	3
PY210	Statistics	3

Department Electives (16 credits)

ES141	Introduction to Movement	3
ES240	Techniques of Athletic Training	2
ES242	Sports Medicine	3
ES248	Psychology of Sport and Perfromance and Coaching	3
ES342	Exercise Physiology	3
ES344	Kinesiology	3
ES348	Fitness Evaluation II — Laboratory Procedures	3
ES442	Electrocardiography in Exercise Science	2
ES444	Exercise Prescription	2
RC212	Instructional Methods in Adapted Aquatics	2
RC220	Methods in Arts & Crafts	3
RC240	Foundations of Therapeutic Rercreation	3
RC262	Outdoor Recreation	3
RC270	Sports Management	3
RC280	Readiness in Games, Activities and Sports	3
RC295	Practicum	1-3
RC320	Dance and Rhythmic Activities for Recreation	3
RC340	Program Development in Therapeutic Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disable Conditions	3
RC346	Clinical Issues and Practice in Therapeutic Recreation	3
RC362	Lan Management for Recreation Purposes	3
RC365	Expedition Management	3
RC370	Recreation for Elderly	3
RC390	Recreation Leader Apprenticeship	1
RC496	Selected Research Topics	1-3

Elective credits (approximately nine) and general education requirements must be completed so that at least 124 semester credits have been earned.

Bachelor of Arts: Recreation Management
(sample schedule)

FALL			SPRING		
First Year					
BL105	Functions of the Human Body	4	CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3	NS	Natural Sci Elective	4
ES140	Health and Fitness	3	PS130	Intro. to State and Local Government	4
PY101	Introduction to Psychology	4		or	
	or		PS160	Introduction to Canadian Government & Politics	3
PY155	Lifespan Development	3	RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC101	Intro. to Recreation and Leisure Services	3	SD101	Fundamentals of Speech	3
		16-17			16-17
Second Year					
AC230	Fundamentals of Accounting	4	BA Req	Foreign Language	4
BA Req	Foreign Language	4	EC201	Macroeconomics	4
EN210	Research Paper Process	3	FN245	Principles of Finance	3
RA	Elective	1	HE181	First Aid	1
RC295	Practicum	1	RA	Elective	1
RC	Restricted Elective	3	RC	Restricted Elective	3
		16	RC390	Recreation Leader Apprenticeship	1
					16
Third Year					
BA231	Business Communications	3	BA254	Business Law I	3
EC202	Microeconomics	3	HU	Humanities Elective	4
HU	Humanities Elective	4	MK281	Marketing Principles & Strategy	3
PY210	Statistics	3	MN360	Principles of Management	3
RC	Restricted Elective	3	RC	Restricted Elective	3
		16			16
Fourth Year					
	General Electives	2		General Electives	3
RC	Restricted Elective	4	HM480	Grantwriting	3
RC435	Problems and Issues in Therapeutic Recreation	3	RC436	Therapeutic Recreation and Leisure Science Research	2
RC481	Professional Development Seminar	1	RC492	Internship	6
RC482	Administration of Recreation and Leisure Services	4			14
		14			

Bachelor of Science: Recreation Management

Department Requirements (29 credits)

ES140	Health and Fitness	3
RA	Recreation Activity	1
RA	Recreation Activity	1
RC101	Introduction to Recreation & Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC295	Practicum	1
RC390	Recreation Leader Apprenticeship	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC436	Therapeutic Recreation and Leisure Science Research	2
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492	Internship	6

Business Requirements (25 credits)

AC132	Principles of Accounting I	4
BA231	Business Communications	3
BA254	Business Law I	3
EC201	Prin. of Macroeconomics	3
EC202	Prin of Microeconomics	3
FN245	Principles of Finance	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3

Cognate Requirements (20 credits)

BL105	Function of the Human Body	4
CS101	Intro. to Microcomputer Appl.	3
HE181	First Aid	1
HM480	Grantwriting	3
PS130	Intro. to State and Local Government	4
	or	
PS160	Intro. to Canadian Government	3
PY101	Introduction to Psychology	4
	or	
PY155	Lifespan Development	3
PY210	Statistics	3

Department Electives (16 credits)

ES141	Introduction to Movement	3
ES240	Techniques of Athletic Training	2
ES242	Sports Medicine	3
ES248	Psychology of Sport and Performance and Coaching	3
ES342	Exercise Physiology	3
ES344	Kinesiology	3
ES348	Fitness Evaluation II — Laboratory Procedures	3
ES442	Electrocardiography in Exercise Science	2
ES444	Exercise Prescription	2
RC212	Instructional Methods in Adapted Aquatics	2
RC220	Methods of Arts & Crafts	3
RC240	Foundations of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC270	Sports Management	3
RC280	Readiness in Games, Activities and Sports	3
RC295	Practicum	1-3
RC320	Dance and Rhythmic Activities for Recreation	3
RC340	Program Development in Therapeutic Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disabling Conditions	3
RC346	Clinical Issues & Practice in Therapeutic Recreation	3
RC362	Land Management for Recreation Purposes	3
RC365	Expedition Management	3
RC370	Recreation for Elderly	3
RC390	Recreation Leader Apprenticeship	1
RC496	Selected Research Topics	1-3

Elective credits (approximately nine) and general education requirements must be completed so that at least 124 semester credits have been earned.

Bachelor of Science: Recreation Management
(sample schedule)

FALL			SPRING		
First Year					
BL105	Function of the Human Body	4	CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3	NS	Natural Science Elective	4
ED140	Health & Fitness	3	PS130	Intro. to State and Local Government	4
PY101	Introduction to Psychology	4		or	
	or		PS160	Introduction to Canadian Government	3
PY155	Lifespan Development	3	RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC101	Intro. to Recreation and Leisure Services	3	SD101	Fundamentals of Speech	3
		16-17			16-17
Second Year					
AC132	Principles of Accounting I	4	EC201	Prin. of Macroeconomics	3
BS Degree Requirement		3	FN245	Principles of Finance	3
EN210	Research Paper Process	3		General Electives	3
RA	Elective	1	HE181	First Aid	1
RC	Restricted Elective	3	RA	Elective	1
RC295	Practicum	1	RC	Restricted Elective	3
		15	RC390	Recreation Leader Apprenticeship	1
					15
Third Year					
BA231	Business Communication	3	BA254	Business Law I	3
EC202	Prin. of Microeconomics	3	HU	Humanities	4
HU	Humanities	4	MK281	Marketing Principles & Strategy	3
PY210	Statistics	3	MN360	Principles of Management	3
RC	Restricted Elective	3	RC	Restricted Elective	3
		16			16
Fourth Year					
	General Electives	3		General Electives	2
RC	Restricted Elective	4	HM480	Grantwriting	3
RC435	Problems and Issues in Therapeutic Recreation	3	PY/SO	Elective	2
RC481	Professional Development Seminar	1	RC436	Therapeutic Recreation and Leisure Science Research	2
RC482	Administration of Recreation and Leisure Services	4	RC492	Internship	6
		15			15

Parks and Recreation Management Concentration

This is an in-house 2 + 2 degree. At the end of four years of study, the student will have earned an associate degree in natural resources technology and a baccalaureate degree in recreation management with a parks and recreation emphasis. Students who complete this degree will have acquired skills specific to land management and resource development. This person would be well qualified to pursue a wide variety of career options that include, but are not limited to, working with agencies such as the Department of Natural Resources or the National Park Service, working with municipal parks and recreation or working in outdoor education.

Recreation Requirements (26 credits)

RC101	Introduction to Recreation	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC262	Outdoor Recreation	3
RC362	Land Management for Recreational Purposes	3
RC365	Expedition Management	3
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492	Internship	6

Natural Resources Technology (14 credits)

RT102	Methods in Natural Resources	1
RT206	Wildlife Management Techniques	2
RT207	Biology and Management of Fishes	3
RT284	Principles of Forestry	4
RT286	Limnological Techniques	4

Cognate Requirements (47 credits)

AC230	Fundamentals of Accounting	4
BL130	Remote Sensing	3
BL230	Introduction to Soils	3
BL239	Wildlife Biology & Management	2
CH108	Applied Chemistry	4
CS101	Intro. to Microcomputer Appl.	3
HE181	First Aid	1
HM480	Grantwriting	3
ID300	Man and His Environment	3
MA109	Trigonometry & Vectors	2
MN365	Human Resource Management	3
NS103	Environmental Science	3
PS130	Intro. to State and Local Government	4
PY101	Introduction to Psychology	4
TC103	Surveying	3
TC111	Small Engine Mechanics	2

Elective credits (approximately nine) and general education requirements must be completed so that at least 126 semester credits have been earned.

Recreation Management: Parks Concentration
(sample schedule)

FALL			SPRING		
First Year					
CS101	Intro. to Microcomputer Appl.	3	BL130	Remote Sensing	3
EN110	Freshman Composition	3	CH108	Applied Chemistry	4
MA109	Trigonometry and Vectors	2	RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC101	Intro. to Recreation and Leisure Services	3	SD101	Fundamentals of Speech	3
Soc. Sci.	Elective	3	TC111	Small Engine Mechanics	3
RT102	Methods in Natural Resources	1			
		15			16

Second Year

RT207	Biology & Management of Fishes	3
BL230	Introduction to Soils	3
HE181	First Aid	1
RT284	Principles of Forestry	4
RT286	Limnological Techniques	4
		15
BL239	Biology & Wildlife Management	2
EN205	Technical Report Writing	3
ID300	Man & His Environment	3
NS103	Environmental Science	3
NS104	Environmental Science Lab	1
RT206	Wildlife Management Techniques	2
TC103	Surveying	3
		17

Third Year

AC230	Fundamentals of Accounting	4
HU	Humanities	4
RC262	Outdoor Recreation	3
PY101	Introduction to Psychology	4
		15
HM480	Grantwriting	3
	General Electives	2
HU	Humanities	4
MN365	Human Resource Management	3
PS130	Intro. to State and Local Government	4
		16

Fourth Year

	B.S. Requirements	3
	Electives	4
RC482	Administration of Recreation and Leisure Services	4
RC481	Professional Development Seminar	1
	General Elective	2
		14
RC362	Land Management for Recreation Purposes	3
	B.S. Requirements	4
Soc. Sci.	Requirements	2
RC365	Expedition Management	3
	General Electives	4
		16

Summer

RC492	Internship	6

Bachelor of Science: Therapeutic Recreation

With the advancement of the humanistic and holistic philosophy of health care, the development of therapeutic recreation as a profession has been tremendous. Using prescribed recreational activities as a modality, the therapeutic recreation specialist improves the physical, social, mental and emotional functioning of individuals with a variety of limiting conditions. Canadian and American students graduating with a bachelor of science in therapeutic recreation have been very successful in finding employment in a variety of settings, such as hospitals, homes for the aged, special recreation associations, prisons, municipal recreation programs and agencies providing services for the physically, mentally, and emotionally challenged. Completion of this degree will enable the student to become eligible to write the Therapeutic Recreation National Certification Exam.

Recreation Studies (46 credits)

ES141	Introducton to Movement	3
ES342	Exercise Physiology	3
RC101	Introduction to Recreation	3
RC105	Program Development & Leadership in Recreation & Leisure Services	3
RC220	Methods in Arts & Crafts	3
RC240	Foundations of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC340	Program Development in Therapeutic Recration	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disabling Conditions	3
RC346	Clinical Issues and Practice in Therapeutic Recreation	3
RC390	Recreation Leader Apprentice ship	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC436	Therapeutic Recreation and Leisure Science Research	2

RC481	Professional Development Seminar	1
RC492	Internship	6

Cognate Requirements (33 credits)

BL121	Human Anatomy & Physiolgoy I	4
BL122	Human Anatomy & Physiology II	4
CH104	Life Chemistry I	3
CS101	Intro. to Microcomputer Appl.	3
HM480	Grantwriting	3
PY101	Introduction to Psychology	4
PY155	Lifespan Development	3
PY201	Communication Skills in Counseling	3
PY210	Statistics	3
PY259	Abnormal Psycholgoy	3

Cognate Electives (9 credits)

BA121	Introduction to Business	3
HE190	Prehospital Emergency Care & Crisis Intervention	3
HE208	Nutrition	2
HE209	Pharmacology	3
HE232	Pathophysiology	3
HM204	Fundamentals of Drug Abuse	3
MN360	Principles of Management	3
PY217	Social Psychology	3
PY240	Behavior Management	3
PY291	Group Counseling	3
PY385	Health Psychology	3
PY391	Family Therapy	3
SO326	Sociology of the Aging/Aged	3
SO327	Sociology of Death & Dying	3

Departmental Electives (12 credits)

ES140	Health & Fitness	3
ES248	Psychology of Sport and Performance and Coaching	3
ES344	Kinesiology	3
ES349	Orthopaedic Assessment in Sports Medicine	3
RC212	Instructional Methods in Adapted Aquatics	2
RC270	Sports anagement	3
RC280	Readiness in Games, Activities and Sports	3
RC295	Practicum	2
RC320	Dance and Rhythmic Activities for Recreation	3
RC365	Expedition Management	3
RC370	Recreation for the Elderly	3
RC482	Administration of Recreation and Leisure Services	4
RC496	Selected Research Topics	1

Elective credits (approximately nine credits) and general education requirements must be completed so that at least 126 semester credits have been earned.

Bachelor of Science: Therapeutic Recreation
(sample schedule)

FALL

First Year

BL121	Human Anatomy & Physiology I	4
CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3
PY101	Introduction to Psychology	4
RC101	Intro. to Recreation and Leisure Services	3
		17

Second Year

EN210	Research Paper Process	3
	Humanities	4
RC220	Methods of Arts & Crafts	3
RC240	Foundation of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
		16

SPRING

BL122	Human Anatomy & Physiology II	4
CH104	Life Chemistry I	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
SD101	Fundamentals of Speech	3
		13

ES141	Introduction to Movement	3
	General Electives	3
	Humanities	4
PY155	Lifespan Development	3
PY201	Communications in Counseling	3
		16

Third Year

ES342	Exercise Physiology	3
	Department Elective	3
PY259	Abnormal Psychology	3
RC340	Program Development in Therapeutic Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
		15

	Department Elective	3
	General Elective	3
PY210	Statistics	3
RC344	Recreational Pursuits and Disabling Conditions	3
RC346	Clinical Issues and Practice in Therapeutic Recreation	3
RC390	Recreation Leader Apprenticeship	1
		16

Fourth Year

	Cognate Elective	3
	Department Elective	3
	General Elective	3
RC435	Problems and Issues in Therapeutic Recreation	3
RC481	Professional Development Seminar	1
		13

	Cognate Elective	6
	Department Elective	3
HM480	Grantwriting	3
RC436	Therapeutic Recreation and Leisure Science Research	2
		14

Summer

RC492	Internship	6

Associate Degree: Health/Fitness Specialist

This program will provide an entry-level awareness and understanding of the knowledge and skills specific to that of an informed exercise science/health fitness instructor. Upon successful completion of the degree, the individual will be qualified to become certified through the American College of Sports Medicine (ACSM) as a health fitness instructor.

General Education Requirements (19 credits)

EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fundamentals of Speech	3
PY101	Introduction to Psychology	4
CS101	Intro. to Microcomputer Appl.	3
	Elective	3

Departmental Requirements (29 credits)

ES140	Health Fitness	3
ES141	Introduction to Movement	3
ES240	Techniques of Athletic Training	2
ES242	Sports Medicine	3
ES248	Psychology of Sport and Performance and Coaching	3
ES262	Exercise Physiology I	3
ES268	Fitness Evaluation I - Field Tests	2
ES295	Practicum	1
ES295	Practicum	1
ES390	Recreation Leader Apprenticeship	1
RA150	Individual Physical Fitness	1
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC280	Readiness in Games, Activities and Sports	3

Required Support (14 credits)

BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4
CH104	Life Chemistry I	3
HE181	First Aid	1
HE208	Nutrition	2

Minimum Credits for Degree 62

Associate Degree: Health/Fitness Specialist
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
BL121	Human Anatomy & Physiology I	4	BL122	Human Anatomy & Physiology II	4
PY101	Introduction to Psychology	4	CH104	Life Chemistry I	3
CS101	Intro. to Microcomputer Appl.	3	ES141	Introduction to Movement	3
ES140	Health Fitness	3	ES295	Practicum	1
		17	RA150	Individual Physical Fitness	1
			HE181	First Aid	1
					16
Second Year					
EN210	Research Paper Process	3	RC280	Readiness in Games, Activities and Sports	3
ES262	Exercise Physiology I	3	ES268	Fitness Evaluation I - Field Tests	2
ES240	Techniques of Athletic Training	2	ES248	Psychology of Sport and Performance and Coaching	3
ES242	Sports Medicine	3	HE208	Nutrition	2
ES295	Practicum	1	RC105	Program Development and Leadership in Recreation and Leisure Services	3
	Elective	3	ES390	Recreation Leader Apprenticeship	1
		15			14

**English composition may be taken either fall or spring semester.*

Minor Course of Study

Recreation Studies

This minor includes 16 credits of required courses and nine credits of departmental electives.

Required: 16 credits

ES140	Health and Fitness	3
RC101	Intro. to Recreation and Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC295	Practicum	2
RC390	Recreation Leader Apprenticeship	1
RC482	Administration of Recreation and Leisure Services	4

Departmental Electives: (9 credits)
(Six credits from 300- and 400-level classes)

HM480	Grantwriting	3
RA210	Lifeguarding	2
RA211	Water Safety and Lifeguard Instructor	2
RC212	Instructional Methods in Adapted Aquatics	2
RC220	Methods in Arts & Crafts	3
RC240	Foundation of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC270	Sports Management	3
RC280	Readiness in Games, Activities and Sports	3
RC320	Dance & Rhythmic Activities for Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disabling Conditions	3
RC346	Clinical Issues in Therapeutic Recreation	3
RC362	Land Management for Recreational Purposes	3
RC365	Expedition Management	3
RC370	Recreation for the Elderly	3
RC435	Problems & Issues in Therapeutic Recreation	3
RC496	Selected Research Topics	1

Recreational Activity Courses

Lake Superior State University does not offer majors or minors in physical education. However, there is a wide variety of activity courses available. Students may select these courses as free electives.

The faculty offer a varied program of activities. Courses include badminton, basketball, bowling, volleyball, swimming, weight training, dance, backpacking, outdoor survival, rock climbing and rappelling, racquetball, jogging, orienteering, canoeing, soccer, self defense and individualized physical fitness. Recreation activity courses, intramurals and athletics play an important part in the lives of the students. Students are encouraged to participate in activities that will provide a carry-over into later life. Preparation for a lifetime of recreational activity is a major goal of the University.

The James Norris Physical Education Center and Taffy Able Arena provide facilities for intercollegiate basketball, hockey, volleyball, softball and tennis. The complex features an ice arena, three gymnasiums, swimming and diving pools, handball-racquetball courts, classrooms, dance studio, shooting range, weight training rooms, recreation studies, exercise science, criminal justice and fire science faculty and athletic staff. In addition the center contains steam, laundry, locker, equipment, and training rooms as well as an exercise physiology testing lab. Spectator capacities include 2,500 in the gymnasium, 420 in the pool area and 4,500 in the ice arena. Adjacent to the Norris Center are eight tennis courts, a soccer-touch football field, and a six-lane, all-weather, quarter-mile track.

School of Science and Natural Resources

BACCALAUREATE

Biology
    Elementary and Secondary Teaching
Clinical Laboratory Science
Environmental Chemistry
Environmental Science
Fisheries and Wildlife Management
Geology
    Elementary and Secondary Teaching

ASSOCIATE

Chemistry
Natural Resources Technology

MINORS

Biology
Chemistry
Environmental Science
Geology
Geology Earth Science Teaching

School of Science and Natural Resources

FACULTY: Jay Christofferson, Dean of School of Science and Natural Resources; William Haag, Department Chair Chemistry and Environmental Science; Lewis M. Brown, Department Chair Geology and Physics; Barbara I. Evans, Department Chair Biology; Professors Charles W. Jones, John W. Lehman, Charles R. Mullin, Steven J. Person, David L. Toppen and Richard J. Zabelka; Associate Professors Thomas A. Allan, Richard S. Furr, Dennis M. Merkel, John H. Roese, and Debra K. Stai; Assistant Professors Richard C. Back, Michael J. Chejlava, Paul R. Kelso, Nancy S. Kirkpatrick, David M. Myton, Trent M. Sutton, and Gregory M. Zimmerman; Instructor Brian C. King.

Honors Program

This program is a research sequence open to science majors with a minimum overall GPA of 3.5 through the first semester of the junior year. Majors electing this sequence will select an instructor as their supervisor. An undergraduate research project will be outlined in consultation with the supervising instructor and submitted to the department for approval. The outline must be approved before the first semester of the senior year. At the end of the seventh week of the spring semester during the senior year, the students will forward an abstract of their work to the department chair and during the tenth week of the same semester will submit the final copy of their research papers in publishable form for departmental approval. All grades for this sequence will be deferred until the final semester. Eight credit hours of honors credit will be substituted for eight hours of electives upon successful completion of the research sequence. The special problem sequence will not be open to students electing the honors program research sequence. The completed research may be used for senior thesis.

Independent Study

Students desiring to enroll in BL, CH, or EV independent study courses will be granted permission to take the course(s) provided the following conditions are in existence at the time of petition: (A) junior or senior standing; (B) overall GPA of at least 2.5; (C) no I grades on transcript. Students meeting these requirements must petition department faculty with a detailed one-page outline of work and date to be completed. Request for more than four hours will result in a proportionate reduction in a 17-hour load. The faculty preceptor must endorse the petition with a signature and the date the project is to be completed.

Department of Biology

Biological sciences prepare students for careers in research and in applied aspects of life sciences as well as providing a background in biology for a career or further studies in allied sciences. Programs offered include bachelor of science degrees in biology, fisheries and wildlife management, and clinical laboratory science; a bachelor of arts degree in biology; and an associate degree in natural resources technology. Associate degree students electing to pursue four-year degree programs generally can change their majors to parks and recreation or to criminal justice (equivalent to conservation law) without losing credits or having to make up deficiencies. Students working toward these four-year degree programs have the same basic courses.

Bachelor of Arts/Science: Biology

Lake Superior State University is ideally located for field studies of terrestrial and aquatic resources. Students electing a variety of courses in ecology and applied ecology can qualify for state and federal positions in fisheries biology, wildlife biology and other related fields. Laboratory courses give students knowledge and techniques necessary for many technical positions with industry and governmental agencies.

Students interested in research positions in marine biology, microbiology, physiology, fish and wildlife ecology, and numerous other life sciences can receive a strong undergraduate background at Lake Superior State University that will enable them to pursue a career or graduate education. Admission requirements for professional and graduate universities vary throughout the United States and Canada. Students planning post-baccalaureate education should work with their advisor to insure that these requirements are met.

Entrance requirements: To qualify for admission as freshmen, applicants must be graduates of accepted secondary schools with above average standing in their class. Their secondary school preparation should include a four-year curriculum of at least 15 units of acceptable entrance credits. The following subjects must be included in these credits: one unit of beginning algebra, one unit of advanced algebra, one unit of chemistry and three units of English. In addition, one biology unit and one unit of geometry or trigonometry are highly recommended. Students not meeting these requirements may enter on a provisional basis. OAC students are required to take departmental competency examinations or CLEP examinations before credit will be granted in biology and chemistry. Substitution for courses required as part of biology degree requirements must be approved by the dean.

Bachelor of Arts: Biology

Biology (29 credits)		
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL220	Genetics	3
BL221	Genetics Laboratory	1
BL330	Animal Physiology	
	or	4
BL315	Plant Physiology	
BL337	General Ecology	3
BL395	Junior Seminar	1
BL420	Population Genetics & Evolution	3
BL499	Senior Thesis	2

Chemistry (17 credits)		
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4

Other Departments (24 credits)		
CS101	Intro. to Microcomputer Appl.	3
MA111	College Algebra	3
MA112	Calculus for Business and Life Sciences	4
MA207	Principles of Statistical Methods	3
EN210	Research Paper Process	3
	Foreign Language *	8

Additionally, a student is required to:

1. take 6-8 semester credits of BL electives with at least one course numbered 300 or higher and
2. satisfy general education requirements (natural science requirements are met by above classes) so that 125 semester credits are earned.

*All eight credits must be taken in one language.

Bachelor of Arts: Biology *(sample schedule)*

FALL			SPRING		
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
MA111	College Algebra	3	MA112	Calculus for Business and Life Sciences	4
EN110	Freshman Composition	3	SD101	Fundamentals of Speech	3
		15	CH116	General Chemistry II	4
					15
Second Year					
BL204	General Microbiology	4	CH226	Organic Chemistry II	4
CH225	Organic Chemistry I	4	EN210	Research Paper Process	3
CS101	Intro. to Microcomputer Appl.	3		Humanities Elective	4
MA207	Principals of Statistical Methods	3	Soc Sci	Elective	4
BL	Elective	3			15
		17			
Third Year					
BL337	General Ecology	3		Foreign Language II	4
	Foreign Language	4	Soc Sci	Elective	4
BL220	Genetics	3	BL315	Plant Physiology	
BL221	Genetics Laboratory	1		*or*	4
	Humanities Elective	4	BL330	Animal Physiology	
		15	BL395	Junior Seminar	1
				Free Elective	4
					17
Fourth Year					
BL	Elective	5	BL499	Senior Thesis	2
	Free Electives	9	BL420	Population Genetics & Evolution	3
		14		Free Electives	12
					17

Bachelor of Arts: Biology - Elementary Teaching Option

Courses Required for Major			**Other Departments**		
BL109	General Biology	4	CS101	Intro. to Microcomputer Appl.	3
BL110	General Zoology	2	MA112	Calculus for Business and Life Sciences	4
BL111	General Botany	2	PH221	Elements of Physics I	4
BL204	General Microbiology	4			
BL220	Genetics	3	**Planned Program Courses**		
BL221	Genetics Lab	1	PY265	Child & Adolescent Development	3
BL330	Animal Physiology		EN210	Research Paper Process	3
	or	4	EN231	American Literature I	
BL315	Plant Physiology			*or*	3
BL337	General Ecology	3	EN232	American Literature II	
BL395	Junior Seminar	1	EN320	Responding to Writing	3
BL420	Population Genetics & Evolution	3	EN335	Children's Literature	3
BL499	Senior Thesis	2	MA103	Number Systems and Problem Solving	3
	Electives (300 level)	2-4	MA104	Geometry & Measurement	3
			MA207	Prin. of Statistical Methods	3
Chemistry			HS101-102	History of World Civilization I, II	
CH115	General Chemistry I	5		*or*	8
CH116	General Chemistry II	4	HS131-132	U.S. History I, II	
CH225	Organic Chemistry I	4			
CH226	Organic Chemistry II	4			

GG201	World Regional Geography	4
PS110	Intro. to American Government and Politics	4

(Canadian students may substitute PS160 Intro. to Canadian Government and Politics, 3 cr)

Remaining General Education

EN110	Freshman Composition	3
SD101	Fundamentals of Speech	3
	Humanities	8

Teacher Education Minor

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Learner, Learning & Teaching in Context	4
TE401	Learner Diversity & Teaching; Practicum I	5
TE402	Crafting Teaching Practice	6

BA Requirements

	Foreign Language*	8

Total Credits for Graduation **142-144**

MSU Graduate Courses

TE501	Internship: Teaching Diverse Learners I	6
TE502	Internship: Teaching Diverse Learners II	6
TE801	Professional Role & Teaching: Practicum I	3
TE803	Professional Role & Teaching: Practicum II	3
TE802	Reflect & Inquiry Teaching: Practicum I	3
TE804	Reflect & Inquiry Teaching: Practicum II	3

**All eight credits must be taken in one language.*

Bachelor of Arts: Biology - Secondary Teaching Option

Courses Required for Major

BL109	General Biology	4
L110	General Zoology	2
L111	General Botany	2
L204	General Microbiology	4
L220	Genetics	3
BL221	Genetics Laboratory	1
BL202	Field Botany *and*	
BL330	Animal Physiology *or*	8
BL315	Plant Physiology *and*	
BL302	Invertebrate Zoology	
BL337	General Ecology	3
BL395	Junior Seminar	1
BL420	Population Genetics & Evolution	3
BL499	Senior Thesis	2
	Electives (300 level)	2-4

Other Departments

CS101	Intro. to Microcomputer Appl.	3
MA111	College Algebra	3
MA112	Calculus for Business and Life Sciences	4
MA207	Princ. of Statistical Methods	3

Chemistry Teaching Minor

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH351	Introductory Biochemistry	4

Remaining General Education

EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fund. of Speech	3
	Humanities	8
	Social Sciences	8

Teacher Education Minor

TE150	Reflections of Learning & Teaching	3
TE250	Student Diversity & Schools	3
TE301	Learner, Learning & Teaching in Context	4
TE401	Learning Diversity and Teaching: Practicum I	5
TE402	Crafting Teaching Practice	6

BA Requirements

	Foreign Language*	8

Total Credits for Graduation **125**

MSU Graduate Courses

TE501	Internship: Teaching Diverse Learners	6
TE502	Internship: Teaching Diverse Learners II	6
TE801	Professional Role & Teaching: Practicum I	3
TE803	Professional Role & Teaching: Practicum II	3
TE802	Reflect & Inquiry Teaching: Practicum I	3
TE804	Reflect & Inquiry Teaching: Practicum II	3

**All eight credits must be taken in one language.*

Bachelor of Science: Biology

Biology (47 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL220	Genetics	3
BL221	Genetics Lab	1
BL280	Biometrics	3
BL315	Plant Physiology	
	or	4
BL330	Animal Physiology	
BL337	General Ecology	3
BL395	Junior Seminar	1
BL420	Population Genetics & Evolution	3
BL499	Senior Thesis	2
BL	Electives	15

(Including at least two courses numbered 300 or higher)

Chemistry (21 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry I	4
CH351	Intro. to Biochemistry	4

Other Departments (24 credits)

CS101	Intro. to Microcomputers	3
MA111	College Algebra	3
MA112	Calculus for Business and Life Sciences	4
MA207	Prin. of Statistical Methods	3
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4
EN210	Research Paper Process	3

Additionally, a student is required to satisfy general education requirements (natural science requirements are met by above classes) and free electives so that 125 semester credits are earned.

Note: BL320 and CH352 are highly recommended electives for this curriculum.

Bachelor of Science: Biology *(sample schedule)*

FALL			SPRING		
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
MA111	College Algebra	3	MA112	Calculus for Business & Life Sciences	4
Soc Sci	Elective	4	EN110	Freshman Composition	3
		16	CH116	General Chemistry II	4
					15
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
BL204	General Microbiology	4	BL	Elective	3
MA207	Prin. of Statistical Methods	3	BL280	Biometrics	3
	Humanities Elective	4		Humanities Elective	4
CS101	Intro. to Microcomputer Appl.	3	EN210	Research Paper Process	3
		18			17
Third Year					
BL220	Genetics	3	BL315	Plant Physiology	
BL221	Genetics Lab	1		*or*	4
BL337	General Ecology	3	BL330	Animal Physiology	
PH221	Elements of Physics I	4	BL	Elective	4
CH351	Introductory Biochemistry	4	PH222	Elements of Physics II	4
		15	Soc Sci	Elective	4
			BL395	Junior Seminar	1
					17

Fourth Year

BL	Elective	4	BL420	Population Genetics & Evolution	3
SD101	Fund of Speech	3	BL499	Senior Theses	2
	Free Electives	7	BL	Electives	4
		14		Free Elective	4
					13

Fisheries & Wildlife Management

Fisheries and wildlife courses place strong emphasis on understanding organisms in their habitats and blend a conceptual understanding of fish and wildlife populations with practical knowledge of relevant lab and field techniques. Students work with, and must learn to identify, a wide variety of plants, fish, birds and mammals.

Students graduating from this rigorous curriculum can meet the qualifications of state and federal government agencies as technicians and biologists. Students desiring certification by the Wildlife Society should consult with an advisor for details. Other career opportunities include positions as naturalists, conservation officers and related professions. The rigorous curriculum provides an extremely competitive background for admittance to graduate school. All students majoring in fisheries and wildlife management are strongly encouraged to consider pursuing a graduate degree.

Entrance Requirements: Same as biology.

Bachelor of Science: Fisheries and Wildlife Management

Biology (45 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL202	Field Botany	3
BL220	Genetics	3
BL280	Biometrics	3
BL310	Ichthyology	3
BL312	Ornithology	3
BL330	Animal Physiology	4
BL337	General Ecology	3
BL395	Junior Seminar	1
BL411	Mammalogy	3
BL432	Fisheries Ecology & Management	3
BL439	Wildlife Ecology & Management	3
BL445	Limnology	3
BL499	Senior Thesis	2

Student must select at least 14 semester hours from the following:

BL130	Intro. to Remote Sensing	3
BL201	Plant Morphology	3
BL204	General Microbiology	4
BL230	Introduction to Soils	4
BL239	Wildlife Biology & Management	2
BL243	Vertebrate Anatomy	4
BL272	Freshwater Fish Culture	2
BL275	Aquatic Entomology	3
BL315	Plant Physiology	4
BL405	Animal Behavior	3
BL437	Plant Ecology	3
EV311	Environmental Law	2

Other classes may be selected if approved by advisor and department chair.

Chemistry (17 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4

To complete a chemistry minor, students should also select:

CH231	Quantitative Analysis	3
	or	
CH351	Introductory Biochemistry	4

Other Departments (13 credits)

CS101	Intro. to Microcomputer Appl.	3
MA111	College Algebra	3
MA112	Calculus for Business and Life Sciences	4
MA207	Prin. of Statistical Methods	3
EN210	Research Paper Process	3

Students who qualify are urged to replace MA111 & MA112 with:

MA150	Precalculus Mathematics	4
MA151	Calculus I	4

Additionally, students must complete general education requirements and sufficient electives to total 125 semester credits.

To meet Wildlife Society certification standards, students must satisfy the following requirements: botany - 9 hours (select BL201, BL315 or BL437); Physics, geology or soils - 3-4 hours (select PH221, GE111, or BL230); Communication - 12 hours (select SD201 or SD202); Policy, admin., & law - 6 hours (Select BL239, EV311, PS110, or PS201). Federal agencies require nine semester hours of botany. To meet this requirement, students should select BL201, BL315 or BL437.

Bachelor of Science: Fisheries and Wildlife Management *(sample schedule)*

FALL			SPRING		
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
MA111	College Algebra	3	MA112	Calculus for Business & Life Sciences	4
CS101	Intro. to Microcomputer Appl.	3	EN110	Freshman Composition	4
		15	CH116	General Chemistry II	4
					15
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
BL	Elective	4	BL	Elective	4
BL202	Field Botany	3	BL280	Biometrics	3
MA207	Prin. of Statistical Methods	3	BL330	Animal Physiology	4
EN210	Research Paper Process	3			15
		17			
Third Year					
BL220	Genetics	3	BL312	Ornithology	3
BL337	General Ecology	3	BL310	Ichthyology	3
Free	Elective	4	BL395	Junior Seminar	1
	Humanities Electives	4		Humanities Elective	4
SD101	Fundamentals of Speech	3		Free Electives	4
		17			15
Fourth Year					
BL	Elective	3	BL499	Senior Thesis	2
BL432	Fisheries Ecology & Management	3	BL411	Mammalogy	3
BL439	Wildlife Ecology & Management	3	BL445	Limnology	3
	Free Elective	3	BL	Elective	3
Soc Sci	Elective	4	Soc Sci	Elective	4
		16			15

Clinical Laboratory Science

Clinical laboratory scientists perform most of the clinical tests conducted in hospital, clinical and health laboratories. Pharmaceutical manufacturers employ clinical laboratory scientists in connection with the development of drugs and the search for sera and vaccines. Students may obtain the bachelor of science degree in clinical laboratory science by completing the specified three-year sequence at the University (see clinical laboratory science bachelor of science requirements) followed by 12 months training at an affiliated hospital. Students may elect any NAACLS accredited hospital (whose program is approved as satisfactory by the University). Lake Superior State University does not assume responsibility for obtaining an affiliation at an approved hospital. Graduates of this program are eligible to take a national examination for certification as a registered clinical laboratory scientist.

Entrance Requirements: To qualify for admission as freshmen, applicants must be graduates of accredited secondary schools with above-average standing in their class. Their secondary school preparation should include a four-year curriculum of at least 15 units of acceptable entrance credits. The following subjects must be included in these credits: one unit of beginning algebra, one unit of geometry, one-half unit of advanced algebra, one unit of chemistry or physics (preferably chemistry) and three units of English. One unit of biology is highly recommended. Students not meeting these requirements may enter on a provisional basis.

Bachelor of Science: Clinical Laboratory Science

Biology (63 credits)		
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL220	Genetics	3
BL330	Animal Physiology	4
BL380	Clinical Hematology/ Hemostasis	4
BL422	Parasitology	3
BL480	Advanced Clinical Microbiology	3
BL423	Immunology	4
BL460	Clinical Lab Science Internship*	30
Chemistry (23 credits)		
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3

Other Departments (16 credits)		
CS101	Intro. to Microcomputer Applications	3
MA111	College Algebra	3
MA112	Calculus for Business and Life Sciences	4
MA207	Prin. of Statistical Methods	3
EN210	Research Paper Process	3

**Calendar Year*

Additionally, a student is required to satisfy general education requirements (natural science requirements are met by required classes) so that 128 semester credits are earned.

Bachelor of Science: Clinical Laboratory Science
(sample schedule)

FALL			SPRING		
First Year					
BL109	General Biology	4	CH116	General Chemistry II	4
CH115	General Chemistry I	5	MA112	Calculus for Business and Life Sciences	4
MA111	College Algebra	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition	3	BL110	General Zoology	2
		15	BL111	General Botany	2
					15
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
MA207	Prin. of Statistical Methods	3	BL330	Animal Physiology	4
CS101	Intro. to Microcomputer Appl.	3		Free Electives	4
BL204	General Microbiology	4		Humanities Elective	4
EN210	Research Paper Process	3			16
		17			
Third Year					
BL220	Genetics	3	BL423	Immunology	4
BL422	Parasitology	3	CH232	Instrument Analysis	3
CH231	Quantitative Analysis	3	BL380	Clinical Hematology & Hemostasis	4
Soc Sci	Elective	4	BL480	Advanced Clinical Microbiology	3
	Humanities Elective	4	Soc Sci	Elective	4
		17			18
Fourth Year					
BL460	Clinical Laboratory Science Internship	15	BL460	Clinical Laboratory Science Internship	15

Note: The 3 + 1 nature of the program forces students to take 300- and 400-level courses in an earlier year. Alternate year offerings will also affect the precise year in a student's program in which he/she can take a particular course.

Pre-Professional: Medicine, Optometry, Dentistry and Veterinary Medicine

Professional schools, including medical, dental, optometry and veterinary schools, typically do not specifically require any college degree, let alone a specific degree in biology. However, applicants to professional schools are seldom accepted with only three years of undergraduate credit. Further, since career goals often change, pre-professional students at LSSU are encouraged to remain four years and complete the requirements for a baccalaureate degree. A survey of medical and dental school admission requirements for the United States and Canada as published by the American and Canadian Associations of Medical and Dental Colleges shows that courses taken for either the Lake Superior State University bachelor of science or bachelor of arts degree in biology meet the most

stringent entrance requirements. Therefore, although other curricula may be pursued as pre-professional degrees, most students elect to strive toward a degree in biology.

A handbook is available to all LSSU pre-health professional students upon formal admission to our programs. This handbook is designed to assist students in achieving their goal of successful entrance into professional school.

Pre-Pharmacy (Transfer Program)

The two-year course of study outlined below is a guide for those who plan to apply for admission and transfer to a three-year professional pharmacy curriculum at another institution. In Michigan, such programs are offered at Ferris State University, University of Michigan and Wayne State University. For further information and planning, students are advised to consult catalogs from these or other institutions. Generally, application for admission to a professional pharmacy curriculum must be submitted after completing the first year of pre-pharmacy studies.

Usually, students must have a cumulative grade point average of 2.00 as well as grades of C or better in science and mathematics. Students entering Ferris State University with one year of high school physics may pass a physics proficiency examination in lieu of the year of college physics. If the latter courses are not taken, a sequence of humanities or behavioral science courses is recommended.

The following suggested schedule, for instance, is recommended and meets all requirements for admission to the School of Pharmacy of Ferris State University.

Pre-Pharmacy *(sample schedule)*

FALL			SPRING		
First Year					
CH115	General Chemistry I	5	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
MA111	College Algebra	4	MA112	Calculus for Business and Life Sciences	
PY101	Introduction to Psychology	4		*or*	4
		17	MA151	Calculus I	
			EN110	Freshman Composition	3
			EC201	Principles of Macroeconomics	3
			CH116	General Chemistry II	4
					18
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
BL121	Human Anatomy & Physiology I	4	BL122	Human Anatomy & Physiology II	4
PH221	Elements of Physics I*	4	PH222	Elements of Physics II	4
EN210	Research Paper Process	3		Humanities Elective	4
SD101	Fundamentals of Speech	3			16
		18			

**Physics is not required at Ferris State University.*

Natural Resources Technology

This program constitutes the first half of the parks option of the bachelor of science in recreation management or can be used in conjunction with a three-year criminal justice program to prepare a student for conservation law. The natural resources technology degree provides a broad background of information in natural resource technology and management.

Entrance Requirements: To be considered for admission as freshmen, applicants must be graduates of accredited secondary schools with above-average standing in their class. Their secondary school preparation should include a four-year curriculum of at least 15 units of acceptable entrance credits. The following should be included in these credits: one unit of beginning algebra, one unit of laboratory science (biology, chemistry or physics — preferably biology) and three units of English.

Associate Degree: Natural Resources Technology

Resource Technology, Biology, and Chemistry (33 credits)

NS103	Environmental Science	3
RT102	Methods in Natural Resources	1
RT206	Wildlife Management Techniques	2
RT207	Biology and Management of Fishes	3
RT284	Principles of Forestry	4
RT286	Limnological Techniques	4
BL130	Intro. to Remote Sensing	3
BL230	Introduction to Soils	4
BL239	Wildlife Biology and Management	2
CH108	Applied Chemistry	4
ID300	Man & His Environment	3

Other Departments (26 credits)

RC101	Intro. to Recreation and Leisure Services	3
MA109	Trigonometry and Vectors	2
CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
HE181	First Aid	1
TC103	Surveying	3
TC111	Small Engine Mechanics	2
SD101	Fundamentals of Speech	3

Students are required to take three additional free elective credits for a total of 62 semester credits.

Associate Degree: Natural Resources Technology
(sample schedule)

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	TC111	Small Engine Mechanics	3
NS103	Environmental Science	3	BL130	Intro. to Remote Sensing	3
RT102	Methods in Natural Resources	1	CH108	Applied Chemistry	4
MA109	Trigonometry	2	SD101	Fundamentals of Speech	3
CS101	Intro. to Microcomputer Appl.	3	HE181	First Aid	1
RC101	Intro. to Recreation and Leisure Services	3		Elective	3
		15		Free Elective	16
Second Year					
BL230	Introduction to Soils	4	BL239	Wildlife Biology Management	2
RT284	Principles of Forestry	4	RT206	Wildlife Management Tech.	2
RT207	Biology and Management of Fishes	3	ID300	Man & His Environment	3
RT286	Limnological Techniques	15	TC103	Surveying	3
			EN205	Technical Report Writing	3
				Free Elective	3
					16

Three-Year Degree Plan for a Bachelor of Science in Criminal Justice Following the NRT Degree

Students with a particular interest in state and federal laws enacted to protect our natural resources and federal restrictions on the use of our renewable resources should consider obtaining both an associate degree in natural resources technology (two years) and a bachelor of science degree in âziminal justice (three additional years). The NRT degree will provide the student with a good general background in natural resources and the criminal justice degree will allow the student to be fully qualified for many different law enforcement opportunities. Jobs for conservation law officers are limited, but the above configuration of degrees prepares a student to be highly competitive for openings that do occur. Students selecting this course of study should work closely with their advisors in order to complete both degrees in the five-year span. After completing the two-year NRT associate degree, students would complete the following sequence of courses. This plan assumes MLEOTC certification and 91 additional hours.

Bachelor of Science: Criminal Justice *(sample schedule)*

FALL			SPRING		
Third Year					
CJ101	Introduction to Criminal Justice	3	CJ355	Juvenile Justice	3
CJ102	Police Process	3	CJ206	Law Enforcement/Loss Control Internship	3
CJ110	Introduction to Corrections	3	SO214	Criminology	3
PS110	Intro. to American Government	4		Humanities Elective	4
	Humanities Elective	4			13
		17			
Fourth Year					
CJ201	Firearms Training	1	CJ345	Statistics/Design in Public Safety	4
CJ212	Loss Control	3	CJ402	Criminal Justice Internship	3
CJ243	Investigation	3	PS120	Intro. to Legal Process	3
FS101	Introduction to Fire Science	3	PY259	Abnormal Psychology	3
PY101	Introduction to Psychology	4	SO103	Cultural Diversity	3
		14			16
Fifth Year					
CJ319	Substantive Criminal Law*	3	CJ313	Crisis Intervention*	3
CJ401	Senior Seminar	3	CJ321	Ethical Issues in Public Safety*	3
HE190	Prehospital Emergency Care Crisis Intervention I	3	CJ409	Procedural Law*	3
			CJ444	Criminalistics*	4
RA197	Physical Fitness for Law Enforcement*	1	HE191	Prehospital Emergency Care Crisis Intervention II*	3
	Elective	4	RA197	Physical Fitness for Law Enforcement	1
		14			17

**MLEOTC course*

Minor Course of Study

Biology Minor

This minor is open to all students. It requires a minimum of 21 credit hours of biology courses. This is an approved teaching minor.

Biology	**(21 credits)**	
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL220	Genetics	3
BL221	Genetics Laboratory	1
BL337	General Ecology	3
BL	Electives 200+ level	6

At least six semester hours of the required courses must be taken at LSSU for a student to obtain this minor.

Department of Chemistry and Environmental Science

Environmental Chemistry

Environmental chemistry is a relatively new, fast-growing subdiscipline of chemistry that addresses the need of society for a safe, healthy environment by applying chemical principles to the maintenance and enhancement of environmental quality. Chemicals have increased our standard of living and quality of life, but have also exacted a heavy price in terms of pollution and environmental degradation. It is only through the enlightened application of chemistry that the problems caused by chemicals can be solved and environmental quality improved. Anyone entering into an environmental field, as well as those entering the chemical profession, should have a basic understanding of environmental chemistry. The environmental sector is the fastest growing component of the U.S. economy, and shortages are greatest in the areas of environmental chemistry as well as environmental engineering. The environmental chemistry program at Lake Superior State University is intended for students who have an interest in and aptitude for chemistry and a concern for the environment. The program takes advantage of LSSU's strategic location at the outlet of Lake Superior, which provides for a broad variety of field and research experiences. Graduates of the program will apply chemical methods to the study, amelioration and solution of environmental problems. They will be employable by federal and state or provincial agencies, industries, and businesses, and as environmental consultants.

Entrance Requirements: Those planning to enroll in the program should have completed at least 15 units of acceptable entrance credits at an accredited secondary school with above-average standing in their class. The credits must include one unit of beginning algebra, one-half unit of advanced algebra, one un of geometry, one unit of chemistry and three units of English. An additional yea of chemistry and a year of senior math are highly recommended.

Bachelor of Science: Environmental Chemistry

Chemistry and Environmental Science (56 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3
CH341	Environmental Chemistry I: Water and Water Pollution Control	4
CH342	Environmental Chemistry II: Air and Solid Wastes	4
CH351	Introductory Biochemistry	4
CH353	Introductory Toxicology	3
CH361	Physical Chemistry I	4
NS103	Environmental Science	3
EV311	Environmental Law	2
EV313	Solid & Hazardous Waste	3
EV395	Junior Seminar	1
EV425	Environmental Systems Analysis	3
EV499	Senior Thesis	2

Support Courses (37 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL337	General Ecology	3
CS101	Intro. to Microcomputer Appl.	3
MA151	Calculus I	
MA152	Calculus II	
MA207	Prin. of Statistical Methods	
PH221	Elements of Physics I	
	or	
PH231	Applied Physics for Engineers and Scientists I	
PH222	Elements of Physics II	
	or	
PH232	Applied Physics for Engineers and Scientists II	

Directed Electives (6-8 credits). Studen must select two related courses from the fc lowing list after consultation with a facul advisor.

BL130	Intro. to Remote Sensing	
BL230	Introduction to Soils	
BL445	Limnology	
ID300	Man and His Environment	
ID399	Internship in Environmental Chemistry	3-
GE111	Physical Geology I	
GE112	Physical Geology II	
GE311	Principles of Hydrology	
GE312	Groundwater Hydrology	

In addition, students are required to satis general education requirements (natural sc ence requirements are met by the abo courses) and to take enough free electiv so that 125 semester credits are earned.

Bachelor of Science: Environmental Chemistry
(sample schedule)

FALL			SPRING		
First Year					
CH115	General Chemistry I	5	BL110	General Zoology	
BL109	General Biology	4	BL111	General Botany	
MA151	Calculus I	4	CH116	General Chemistry II	
NS103	Environmental Science	3	EN110	Freshman Composition	
		16	MA152	Calculus II	

Second Year

CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
SD101	Fundamentals of Speech	3	CS101	Intro. to Microcomputer Appl.	3
EN205	Technical Report Writing	3		Social Science Elective	4
MA207	Prin. of Statistical Methods	3		Free Elective	3
		17			18

Third Year

CH231	Quantitative Analysis	3	CH232	Instrumental Analysis	3
CH361	Physical Chemistry I	4	EV/CH341	Environm. Chemistry I:Water	4
BL204	General Microbiology	4	EV395	Junior Seminar	1
EV311	Environmental Law	2		Social Science Elective	4
BL337	General Ecology	3		Humanities Elective	4
		16			16

Fourth Year

CH342	Environmental Chemistry II: Air	4	CH353	Toxicology	3
CH351	Introductory Biochemistry	4	EV425	Environmental Systems Analysis	3
EV313	Solid & Hazardous Waste	4	EV499	Senior Thesis	3
	Directed Elective	3-4		Directed Elective	3-4
		14-15		Humanities Elective	4
					15-16

Environmental Science

Environmental science is a comparatively new field that is still evolving. It offers careers to technicians, scientists and engineers in a wide variety of specialties. Students aspiring to become environmental scientists must possess a deep and lasting concern for the ecosystem, acquire a comprehensive knowledge of environmental issues, develop the scientific skills needed to solve environmental problems and deal intelligently with our natural resources. They should also acquire the technical and communicative skills needed to deal with business, industrial and government leaders whose activities affect the environment. The curriculum is a four-year program to prepare students for careers directed toward the maintenance and improvement of environmental quality.

Entrance Requirements: Those planning to enroll in the environmental science curriculum at Lake Superior State University should have completed at least 15 units of acceptable entrance credits at an accredited secondary school with above-average standing in their class. These credits must include one unit of beginning algebra, one-half unit of advanced algebra, one unit of geometry, one unit of chemistry or physics, and three units of English. One unit of biology and a year of senior math are highly recommended.

Bachelor of Science: Environmental Science

Biology, and Environmental Science (37 credits)					
BL109	General Biology	4	NS103	Environmental Science	3
BL110	General Zoology	2	BL204	General Microbiology	4
BL111	General Botany	2	EV311	Environmental Law	2
BL230	Introduction to Soils	4	EV313	Solid & Hazardous Waste	3
BL337	General Ecology	3	EV341	Environmental Chemistry I: Water and Water Pollution Control	4

EV395	Junior Seminar	1
EV499	Senior Thesis	2
ID300	Man & His Environment	3

Chemistry (23 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3

Other Departments (31 credits)

CS101	Intro. to Microcomputer Appl.	3
MA111	College Algebra*	3
MA112	Calculus for Business and Life Sciences*	4
MA207	Prin. of Statistical Methods	3
PH221	Elements of Physics I*	4
PH222	Elements of Physics II*	4
GE311	Principles of Hydrology	3
EN205	Technical Report Writing	3
GE111	Physical Geology I	4

Directed Electives (students select one of the following—minimum 3 credits)

BL130	Intro. to Remote Sensing	3
CH353	Introductory Toxicology	3
EV/CH341	Environmental Chemistry I: Air and Solid Wastes	4
CH342	Environmental Chemistry II: Water and Water Pollution Control	4
EV490	Independent Study in Environmental Science	3-4
GE112	Physical Geology II	4
GG108	Physical Geography: Meteorology and Climatology	3
TC103	Surveying	3

Additionally, a student is required to satisfy general education requirements (natural science requirements are met by above classes) and free electives so that 125 semester credits are earned.

**Students with adequate preparation in mathematics are advised to take MA151-152 in place of MA111-112 and PH231-232 in place of PH221-222. Competency in trigonometry is required to take physics. See advisor for details.*

Bachelor of Science: Environmental Science
(sample schedule)

FALL			SPRING		
First Year					
CH115	General Chemistry I	5	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
MA109	Trigonometry and Vectors**	2	CH116	General Chemistry II	4
MA111	College Algebra	3	EN110	Freshman Composition	3
NS103	Environmental Science	3	MA112	Calculus for Business and Life Science	4
		17			15
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
GE111	Physical Geology I	4	SD101	Fundamentals of Speech	3
EN205	Technical Report Writing	3	CS101	Intro. to Microcomputer Appl.	3
		15			14
Third Year					
EV313	Solid and Hazardous Waste*	3	ID300	Man & His Environment	3
MA207	Prin. of Statistical Methods	3	EV395	Junior Seminar	1
CH231	Quantitative Analysis	3	CH232	Instrumental Analysis	3
BL204	General Microbiology	4	BL230	Introduction to Soils	4
Soc Sci	Elective	4	CH/EV341	Environmental Chemistry I: Water & Water Pollution Control	4
		17			15

Fourth Year

BL337	General Ecology	3	EV499	Senior Thesis	1
Soc Sci	Elective	4	GE311	Principles of Hydrology	3
EV311	Environmental Law	2		Humanities Elective	4
	Humanities Elective	4		Free Elective	4
	Free Elective	3		Directed Elective	3
		16			16

**Taken in alternate years*
***Student will be offered a chance to have course waived by examination. If taken, can be used as a free elective.*

Associate Degree: Chemistry

The associate degree in chemistry provides the fundamentals required for additional studies in chemistry. The science and math components provide a strong foundation for a bachelor's degree in chemistry or physics.

Chemistry (23 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3

Other Departments (35 credits)

CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
MA151	Calculus I	4
MA152	Calculus II	4
MA251	Calculus III	4
PH231	Applied Physics I	4
PH232	Applied Physics II	4
SD101	Fundamentals of Speech	3
Soc Sci	Elective	3

Students are required to take a total of 63 semester credits.

Associate Degree: Chemistry *(sample schedule)*

FALL			SPRING		
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
MA151	Calculus I	4	MA152	Calculus II	4
EN110	Freshman Composition	3	CS101	Intro. to Microcomputer Appl.	3
SD101	Fundamentals of Speech	3		Soc. Sci. or HU Elective	3/4
		15		Free Elective	3
					17-18
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3	CH232	Instrumental Analysis	3
PH231	Applied Physics I	4	PH232	Applied Physics II	4
EN205	Technical Report Writing	3	MA251	Calculus III	4
	Free Elective	2			15
		16			

Minor Courses of Study

Chemistry Minor

This minor is open to all students. It requires a minimum of 20 credit hours of chemistry courses. This is an approved teaching minor.

Chemistry (20-21 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
	or	
CH351	Introductory Biochemistry	4

At least six semester hours of the required courses must be taken at LSSU for a student to obtain this minor.

Environmental Science Minor

This minor is open to all students. It requires a minimum of 28 credit hours from the following:

Required courses

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
NS103	Environmental Science	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4
BL337	General Ecology	3
ID300	Man & His Environment	3

Students who have taken EV101 will have NS103 waived.

Additional courses to total 28 credit hours

BL204	General Microbiology	4
BL230	Introduction to Soils	4
EV/CH342	Environmental Chemistry II: Air and Solid Wastes	4
EV311	Environmental Law	2
EV313	Solid & Hazardous Waste	3
NS104	Environmental Science Lab	1
GE311	Principles of Hydrology	3

Department of Geology and Physics

Since the beginning of the solar system, our earth has been developing. Our present environment is the result of the cumulative interaction of many dynamic physical, chemical and biological processes.

Geology deals with the dynamic earth, its physical makeup, and its physical and organic history. It involves the study of changes which have taken place and the forces which cause, and are now causing, these changes. By drawing on concepts of biology, chemistry, mathematics and physics, geologists attempt to understand the physical environment in which we live and from which we derive most of the natural resources essential to our civilization. Our civilization requires many non-renewable natural resources in order to survive. Since the turn of the century, we have used more and more of these resources at an ever-increasing rate and now have critical supply problems. Our demands upon the environment have significantly changed the earth around us, and, if we are to

survive, we must live within the constraints imposed by nature. Geologists study and understand these constraints. They apply their knowledge to achieve harmony between the human race and its environment.

Geology has a broad scientific base in mathematics, physics, biology and chemistry as well as emphasizing fundamentals of geologic science and geophysics. Increases in the demand for energy fuels and mineral products result in an expansion of opportunities for graduates in geology. Students contemplating careers in geology should, upon graduating, expect to travel, often to remote and uninhabited areas. Most of the jobs entail outdoor field work, often under difficult conditions.

Other new fields are now requiring geologists, as are companies and agencies such as NASA and EPA which are involved with extraterrestrial and environmental concerns. The geological environment of Lake Superior State University provides unexcelled opportunities for field study of classic sections illustrating Precambrian stratigraphy, structure, intrusions, and metamorphism and undisturbed Paleozoic sedimentary formations. Proximity to deposits of iron, copper, uranium, dolomite and the Michigan oil and gas fields, as well as other minerals, is an additional advantage. Students are eligible to participate in the department's active research in geology.

Entrance Requirements: To qualify for admission to the program in geology, applicants must satisfy University admission requirements as described in the Admissions section of the Catalog. (This information is also included in the Viewbook.)

Secondary school academic subjects should include: Three units of English, two units of algebra, one unit of geometry, and one unit of chemistry and physics. One-half unit of trigonometry is highly recommended.

Completion of the program may require more than four years for students who do not meet all entrance requirements.

For students with college-level achievement, the opportunity will be offered, by means of examination, to obtain course credit or placement into an advanced course.

Bachelor of Science: Geology

Geology (54 Credits)

GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	3
GE216	Structural Geology & Geologic Graphics	4
GE221	Crystallography and Mineralogy	4
GE222	Mineralogy & Petrography	4
GE321	Optical Mineralogy	3
GE422	Igneous and Metamorphic Petrography	3
GE423	Sedimentary Petrography	3
GE351	Invertertebrate Paleontology I	3
GE352	Invertertebrate Paleontology II	3
GE436	Field Geology	6
GE461	Stratigraphy & Sedimentation	4
GE471	Economic Geology I	3
GE472	Economic Geology II	3

Support courses (33 to 36 Credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CS101	Intro. to Microcomputer Appl. or	3
CS121	Survey of Computer Science	
MA207	Princ. of Statistical Methods	3
MA140 & MA141	Algebra for Technologists & Technical Calculus I *or*	8
MA151 and MA152:	Calculus I & Calculus II	
NS103	Environmental Science	3
PH221 & PH222:	Elements of Physics I & Elements of Physics II *or*	8
PH231	Applied Physics for Engineers and Scientists I *and*	8
PH232	Applied Physics for Engineers and Scientists II	

Free elective credits, approximately 11, and general education requirements must be completed so that at least 125 semester credits have been earned.

A sample four-year schedule of courses for this program follows. Numerous options for completing the program are possible and students will select these with assistance of their advisor.

Bachelor of Science, Geology *(sample schedule)*

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	MA141	Technical Calculus I	
MA140	Algebra for Technologists**			*or*	4
	or	4	MA152	Calculus II	
MA151	Calculus I		GE112	Physical Geology II	4
GE111	Physical Geology I	4	Soc. Sci.	Elective	4
Soc Sci	Elective	4	CS101	Intro. to Microcomputer Appl.	
		15		*or*	
			CS121	Survey of Computer Science	3
					15
Second Year					
EN210	Research Paper Process	3		Elective	4
GE215	Historical Geology	3	GE222	Mineralogy & Petrography	4
GE221	Crystallography & Minerology	4	CH116	General Chemistry II	4
CH115	General Chemistry I	4	NS103	Environmental Science	3
		14			15
Third Year					
GE351	Invertebrate Paleontology I	3	GE321	Introduction to Geophysics	4
PH221	Elements of Physics I		PH222	Elements of Physics II	
	or	4		*or*	4
PH231	Applied Physics for Engineers and Scientists I		PH232	Applied Physics for Engineers and Scientists II	
	Humanities Elective	4	GE352	Invertebrate Paleontology II	3
SD101	Fundamentals of Speech	3		Humanities Elective	4
MA207	Prin. of Statistical Methods	3			15
		17			
Summer					
GE436	Field Geology	6			
Fourth Year					
GE321	Optical Mineralogy	3	GE422	Igneous & Metamorphic Petrography	3
GE423	Sedimentary Petrography	3	GE461	Stratigraphy & Sedimentation	4
GE471	Economic Geology I	3	GE472	Economic Geography II	3
	Electives	6	GE216	Structural Geology and Geologic Graphics	4
		15		Electives	3
					17

**EN110 may be taken in spring semester.*
***MA109 Trigonometry and Vectors is required for students without high school trigonometry credit.*

Bachelor of Science: Geology - Environmental Geology

Geology (33 Credits)

GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	3
GE216	Structural Geology and Geologic Graphics	4
GE221	Crystallography and Mineralogy	4
GE222	Mineralogy & Petrography	4
GE436	Field Geology	6
GE461	Stratigraphy & Sedimentation	4

Support Courses (56 to 59 Credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3
CS101	Intro. to Microcomputer Appl.	
	or	3
CS121	Survey of Computer Science	
MA140 & MA141:	Algebra for Technologists and Technical Calculus I	
	or	8
MA151,MA152:	Calculus I and Calculus II	
MA207	Prin. of Statistical Methods	
	or	3-4
MA308	Probability and Mathematical Statistics	
NS103	Environmental Science	3
NS107	Physical Geography Landforms and Soils	3
PH221,PH222:	Elements of Physics I & II	
	or	8
PH231,PH232:	Applied Physics for Engineers and Scientists I & II	
GE311	Principles Hydrology	3
GE312	Groundwater Hydrology	3

Free elective credits, approximately 11, and general education requirements must be completed so that at least 125 semester credits have been earned.

A sample four-year schedule of courses for this program follows. Numerous options for completing the program are possible and students will select these with assistance of their advisor.

Bachelor of Science: Geology - Environmental Geology Option *(sample schedule)*

FALL			SPRING		
First Year					
MA140	Technical Calculus I*		MA141	Technical Calculus II	
	or	4		*or*	4
MA151	Calculus I*		MA151	Calculus II	
EN110	Freshman Composition**	3	GE112	Physical Geology II	4
GE111	Physical Geology I	4	NS103	Environmental Science	3
Soc Sci	Elective	4	SD101	Fundamentals of Speech	3
		15			14
Second Year					
EN205	Technical Report Writing	3	CS 101	Intro. to Microcomputer Appl.	
CH115	General Chemistry I	5		*or*	3
GE215	Historical Geology	3	CS121	Survey of Computer Science	
GE221	Crystallogy and Mineralogy	4	CH116	General Chemistry II	4
		15	GE222	Mineralogy and Petrography	4
				Elective	4
					15

Third Year

CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
	Humanities Elective	4	GE216	Structural Geology and	
PH221	Elements of Physics I		PH222	Elements of Physics II	
	or	4		*or*	4
PH231	Applied Physics for Engineers & Scientists I		PH232	Applied Physics for Engineers and Scientists II	
Soc Sci	Elective	4	GE461	Stratigraphy & Sedimentation	4
		16			16

Summer

GE436	Field Geology	6

Fourth Year

GE311	Principles of Hydrology	3	CH232	Instrumental Analysis	3
CH231	Quantitative Analysis	3	NS107	Physical Geography: Landforms and Soils	3
MA207	Prin. of Statistical Methods		GE312	Groundwater Hydrology	3
	or	3-4	GE331	Geophysics	4
MA308	Probability and Mathematics			Humanities Elective	4
	Electives	7			17
		16-17			

**MA109 Trigonometry and Vectors is required for students without high school trigonometry credit.*
***EN110 may be taken in spring semester.*

Bachelor of Science: Geology/Elementary Teaching Option *(sample schedule)*

FALL			SPRING		
First Year					
MA109	Trigonometry and Vectors*	2	CS121	Survey of Computer Science	
EN110	Freshman Composition	3		*or*	3
GE111	Physical Geology I	4	CS111	Intro. to Computer Science I	
PY101	Introduction to Psychology	4	GE112	Physical Geology II	4
TE150	Reflections on Learning and Teaching	3	GG108	Physical Geography: Meteorology and Climatology	3
		14-16	PS110	Intro. to American Government	4
			SD101	Fundamentals of Speech	3
					17

**MA109 is not required for students with high school trigonometry.*

Second Year

EN215	Intro. to Literature and Research	3	CH108	Applied Chemistry	4
GE215	Historical Geology	3	EN232	American Literature II	3
HS101	History of World Civilization I	4	HS102	History of World Civilization II	4
MA103	Number Systems and Problem Solving	3	MA104	Geometry and Measurement	3
PY265	Child & Adolscent Development	3	TE250	Student Diversity and Schools	3
		16			17

Third Year

NS103	Environmental Biology	4	EN335	Children's Literature	3
GE221	Crystallography & Mineralogy	4	GE216	Structural Geology and Geologic Graphics	4
GG201	World Regional Geography	4	GE222	Mineralogy and Petography	4
MA111	College Algebra	3	MA207	Prin. of Statistical Methods	3
	or		NS101	Conceptual Physics	3
MA140	Algebra for Technologists	4			17
		15-16			

Summer

GE436	Field Geology	6
TE301	Learner, Learning & Teaching in Context	4
		10

Fourth Year

EN320	Responding to Writing	3	GE352	Invertebrate Paleontology II	3
GE351	Invertebrate Paleontology I	3		Humanities Elective	4
	Humanities Elective	4	NS119	Descriptive Astronomy	3
TE401	Learner Diversity and Teaching: Pract. I	5	TE402	Crafting Teaching Practice	6
		15			16

Fifth Year (Internship Year, MSU Graduate Courses)

TE501	Internship: Teaching Diverse Learners I	3	TE502	Internship: Teaching Diverse Learners II	3
TE801	Professional Role & Teaching: Practicum I	3	TE803	Professional Role & Teaching: Practicum II	3
TE802	Reflection & Inquiry Teaching: Practicum I	3	TE804	Reflection & Inquiry Teaching: Practicum II	3
		12			12

Bachelor of Science: Geology/Secondary Teaching Option *(sample schedule)*

FALL			SPRING		
First Year					
MA109	Trigonometry and Vectors*	2	CS101	Intro. to Microcomputer Appl.	
EN110	Freshman Composition	3		*or*	3
MA140	Algebra for Technologists		CS121	Survey of Computer Science	
	or	4	GE112	Physical Geology II	4
MA151	Calculus I		MA141	Technical Calculus I	
GE111	Physical Geology I	4		*or*	4
TE150	Reflect/Learning and Teaching	3	MA152	Calculus II	
		14-16	PY101	Introduction to Psychology	4
					15

**MA109 is not required for students with high school trigonometry.*

Second Year

CH115	General Chemistry I	5	CH116	General Chemistry II	4
GE215	Historical Geology	3	GG108	Physical Geography: Meteorology & Climatology	3
EN210	Research Paper Process	3		Humanities Elective	4
	Humanities Elective	4	SD101	Fundamentals of Speech	3
		15	TE250	Student Diversity & Schools	3
					17

Third Year

BL109	General Biology	4	GE216	Structural Geology and Geologic Graphics	4
GE221	Crystallogy & Mineralogy	4	GE222	Mineralogy & Petrography	4
PH221	Elements of Physics I		MA207	Princ. of Statistical Methods	3
	or	4	PH222	Elements of Physics II	
PH231	Applied Physics for Engineers and Scientists I			*or*	4
	Elective	3	PH232	Applied Physics for Engineers and Scientists II	4
		15			15

Summer

GE436	Field Geology	6
TE301	Learners, Learning and Teaching in Context	4
		10

Fourth Year

GE351	Invertebrate Paleontology I	3	GE352	Invertebrate Paleontology II	3
NS119	Descriptive Astronomy	3	TE402	Crafting Teaching Practice	6
Soc Sci	Elective	4		Electives	7
TE401	Learner Diversity & Teaching: Practicum I	5			16
		15			

Fifth Year (Internship Year, MSU Graduate Courses)

TE501	Internship: Teaching Diverse Learners I	3	TE502	Internship: Teaching Diverse Learners II	3
TE801	Professional Role & Teaching: Practicum I	3	TE803	Professional Role & Teaching: Practicum II	3
TE802	Reflection & Inquiry Teaching: Practicum I	3	TE804	Reflection & Inquiry Teaching: Practicum II	3
		12			12

Bachelor of Science, Dual Major: Environmental Science and Geology with Environmental Geology Option

Departmental Requirements (119-122)

BL109	General Biology	4	GE222	Mineralogy & Petrography	4
BL110	General Zoology	2	GE436	Field Geology	6
BL111	General Botany	2	GE461	Stratigraphy & Sedimentation	4
BL204	General Microbiology	4	ID300	Man & His Environment	3
BL230	Introduction to Soils	3	MA109	Trigonometry and Vectors *(may be waived by exam)*	2
BL337	General Ecology	3	MA111	College Algebra *and*	
CH115	General Chemistry I	5	MA112	Calculus for Business and Life Sciences	
CH116	General Chemistry II	4		*or*	7-8
CH225	Organic Chemistry I	4	MA151	Calculus I *and*	
CH226	Organic Chemistry II	4	MA152	Calculus II	
CH231	Quantitative Analysis	3	MA207	Prin. of Statistical Methods	3
CH232	Instrumental Analysis	3	NS103	Environmental Science	3
CS101	Intro. to Microcomputer Appl.	3	PH221	Elements of Physics for Engineers and Scientists I *and*	
EV311	Environmental Law	2			
EV313	Solid & Hazardous Waste	3	PH222	Elements of Physics for Engineers and Scientists II	
EV341	Environmental Chemistry I: Water & Water Polution Contr.	4		*or*	8
EV395	Junior Seminar	1	PH231	Applied Physics I *and*	
EV499	Senior Thesis	2	PH232	Applied Physics II	
GE111	Physical Geology I	4	GE311	Principles of Hydrology	3
GE112	Physical Geology II	4	GE312	Groundwater Hydrology	3
GE215	Historical Geology	3			
GE216	Structural Geology and Geological Graphics	4			
GE221	Crystallography & Mineralogy	4			

Nine credits of free electives and three credits of designated electives are required. GE112 serves as a designated elective for the environmental science major. A minimum of 153 semester credits is required for the dual major.

Bachelor of Science, Dual Major: Environmental Science and Geology with Environmental Geology Option *(sample schedule)*

FALL			SPRING		
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
BL109	General Biology	4	BL110	General Zoology	2
MA109	Trigonometry & Vectors*	2	BL111	General Botany	2
MA111	College Algebra		EN110	Freshman Composition	3
	or	3-4	MA112	Calculus for Business and Life Science	
MA151	Calculus I			*or*	4
NS103	Environmental Science	3	MA152	Calculus II	
		17-18			15
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
PH221	Elements of Physics for Engineers and Scientists I		PH222	Elements of Physics for Engineers and Scientists II	
	or	4		*or*	4
PH231	Applied Physics I		PH232	Applied Physics I	
GE111	Physical Geology I	4	GE112	Physical Geology II	4
EN205	Technical Report Writing	3	BL230	Introduction to Soils	4
		15			16
Third Year					
BL337	General Ecology	3	CH232	Instrumental Analysis	3
CH231	Quantitative Analysis	3		Elective	4
GE215	Historical Geology	3	EV341	Environmental Chemistry I: Water & Water Polution	4
CS101	Intro. to Microcomputer Appl.	3	MA207	Prin. of Statistical Methods	3
EV311	Environmental Law**	2			14
		14			
Fourth Year					
EV313	Solid and Hazardous Waste**	3	EV395	Junior Seminar	1
GE221	Crystallography & Mineralogy	4	GE222	Mineralogy & Petrography	4
SD101	Fundamentals of Speech	3	GE216	Structural Geology and and Geologic Graphics**	4
Soc Sci	Elective	4	Soc Sci	Elective	4
	Elective	3	GE461	Stratigraphy & Sedimentation**	4
		17			17
Summer					
GE436	Field Geology	6			
Fifth Year					
BL204	General Microbiology	4	GE312	Groundwater Hydrology**	3
GE311	Principles of Hydrology	3	ID300	Man & His Environment	3
	Elective	3	EV499	Senior Thesis	2
	Humanities Elective	4	GE331	Introduction to Geophysics	4
		14		Humanities Elective	4
					16

*Prerequisite for PH221; may be waived by examination.
**Alternate year courses.

Geology Minor

For a minor in geology a total of 23 semester credits must be selected as follows:

GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	3
GE216	Structural Geology and Geologic Graphics	4
GE221	Crystallography & Mineralogy	4
GE222	Mineralogy and Petrography	4

Geology Earth Science Major

For an approved teaching minor in geology/earth science a total of 20 semester credits must be selected as follows:

GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	3
GE351	Invertebrate Paleontology I	3
GG108	Physical Geography: Meteorology and Climatology	3
NS119	Descriptive Astronomy	3
		20

Community Services and Development

Continuing Education

Community Services and Development (CSD) provides educational opportunities for non-traditional students in LSSU's service region. In cooperation with academic departments, CSD creates opportunities to meet the educational needs of adult students through alternative delivery options such as distance learning, flexible schedules, off-campus sites and weekend courses. CSD provides an academic focus for external and off-campus degree programs, continuing education, evening and weekend courses and public service programs. All are flexible and accessible to learners whose job, family and community responsibilities conflict with traditional academic schedules.

Regional representatives are located at Alpena Community College in Alpena, Bay de Noc Community College in Escanaba, North Central Michigan College in Petoskey and Northwestern Michigan College in Traverse City. Students may earn a master of business administration (MBA), and bachelor of science degrees in business administration, accounting, nursing (B.S.N. completion program for registered nurses), criminal justice/generalists and engineering management. All degree requirements (with exception of 3+1 programs) may be completed at the off-campus sites. The time required to complete the degree varies, according to each student's individual schedule and the number of college credits already completed.

CSD provides opportunities to earn graduate and undergraduate degrees in the evenings or weekends on campus.

Professional development through non-credit courses, seminars, workshops, interactive television and video conferences are available. Uplink and downline satellite capabilities exist.

Training and development programs with business, industry, government, volunteer and social agencies to deliver consulting and customized training programs are also available through CSD.

Community enrichment courses include courses and activities for adults and children. Adult enrichment courses include computers, exercise, crafts, art and language, personal finance and gardening.

Elderhostel is a nonprofit educational travel program for participants 60 years or older. Hostelers stay a week on campus studying with LSSU professors. Field trips, social activities and areas of local interest are included.

Lake Superior Elders (LSE) addresses the needs of retired and semi-retired adults through continued educational pursuits. This "Learning in Retirement Center" has a monthly program featuring guest speakers on various topics. Minicourses are scheduled on a three-month basis, vary in number of sessions, and are designed by the organization's curriculum committee.

Location: Community Services & Development is located at 844 N. Campus Ct., near the Ryan Street campus entrance.

CSD staff: Susan K. Camp, director, continuing education; Dennis Choiniere, program developer; Sherri Pavloski, secretary. Regional site coordinators: Kelly Smith, Alpena; Beth Noreus, Escanaba; Mary Jason, Petoskey; and Dr. Christie Montgomery, Traverse City University Center.

COURSES

Each course description is preceded by the following type of heading:

CH999 Chemistry			**CH999 Chemistry**	
(3-3)	**5**	**or**	**(3-3) alternate yrs**	**5**

The first line provides the code number (CH999) and the course name; see below for an explanation of the abbreviations. The second line includes several pieces of information: The first two numbers are hours of lecture-lab per week; and the number of credit hours is the third number. Sometimes, no semester will be indicated, or there will be the alternate years or every third year notation. Consult either the course schedule booklet published each semester prior to pre-registration; or your department chair concerning scheduling of such courses.

Abbreviations

AC	Accounting
AT	Art
BA	Business
BL	Biology
CF	Criminal Justice/Fire Science
CH	Chemistry
CJ	Criminal Justice
CS	Computer Science
DP	Data Processing
EC	Economics
ED	Education
EE	Electrical Engineering
EG	General Engineering
EM	Engineering Mechanics
EN	English
ES	Exercise Science
ET	Electrical Engineering Technology and Telecommunications Engineering Technology
EV	Environmental Science
FN	Finance
FS	Fire Science
FR	French
GE	Geology
GG	Geography
GN	German
HE	Health Sciences
HM	Human Services
HS	History
HU	Humanities
ID	Interdisciplinary
JR	Journalism
JS	Japanese Studies
LA	Legal Assistant Studies
MA	Mathematics
MB	Master Business Administration
ME	Mechanical Engineering
MK	Marketing
MN	Management
MT	Manufacturing Engineering Technology
MU	Music
NA	Native American Studies
NS	Natural Science
NU	Nursing
OA	Office Administration
PH	Physics
PL	Philosophy
PS	Political Science
PY	Psychology
RA	Recreational Activities
RC	Recreation
RS	Robotics and Control Systems
RT	Natural Resources Technology
SA	Student Affairs
SD	Speech
SO	Sociology
SP	Spanish
SW	Social Work
TC	Construction Technology
TE	Teacher Education
UN	University Seminar

Students must satisfy prerequisites and any other stated conditions before enrolling in a course; or have permission from the instructor to waive the prerequisites. Enrollment in a course may be revoked (with an N grade) if it is found during the regular drop period that the proper prerequisites have not been met. Responsibility rests with students to be certain that they have the approved prerequisites.

ACCOUNTING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

AC132 Principles of Accounting I
(4,0) 4
An introduction to the principles of accounting as applied to proprietorships, partnerships and corporations. Areas of study include the accounting cycle for service and merchandising enterprises, internal control and items included in the asset section of the balance sheet.

AC133 Principles of Accounting II
(4,0) 4
This course includes a study of the equity portion of the balance sheet as well as an introduction to financial analysis and managerial accounting. Prerequisite: Grade of C or higher in AC132.

AC230 Fundamentals of Accounting
(4,) 4
This course is designed to give non-business majors an understanding of the accounting process and the knowledge to read, understand, and use financial statements and reports in making decisions. The emphasis is on the use, rather than the generation, of accounting information. This course is not open to business majors.

AC232 Intermediate Accounting I
(4,0) 4
A review of the general theoretical framework and process of accounting for use as a reference in an intensive study of accounting doctrines and procedures proposed by various authoritative groups. Topics: Generally accepted accounting principles; the accounting process; balance sheet; income statement; present value principles and application; cash and temporary investments; receivables; inventories, plant and intangible assets; and long term investments. Prerequisites: AC132 and 133 or permission of instructor.

AC233 Intermediate Accounting II
(4,0) 4
Continuation of AC232 with reference to accounting theory as applied to specific critical areas of financial data accumulation and presentation. Emphasis is placed on valuation concepts and their influence on contemporary practice. Topics: Liabilities; long term debt securities; owner's equity; earnings and revenue recognition; income taxes; leases; pensions; error correction; cash flows; and financial statement analysis. Prerequisite: AC232.

AC332 Cost Accounting I
(4,0) 4
A study of the fundamentals of cost accounting: The cost cycle, cost terminology, cost behavior, cost-volume-profit analysis, budgeting, standard cost, relevant costs, cost allocation, and cost control. Emphasis is given to both product costing and costing for control purposes. Prerequisite: AC133.

AC333 Cost Accounting II
(4,0) 4
A continuation of AC332 encompassing process costing, capital budgeting, inventory control, performance measurement, accounting systems and internal control, and cost accounting in relation to the certified public accountant and certified management accountant examinations. A study of various quantitative techniques and their applications are included in the course content. Prerequisite: AC332 and DP151 (spreadsheet course).

AC334 Accounting Information Systems
(3,0) 3
Elements that constitute an accounting system and theories upon which a system should be designed. Emphasis upon computerized accounting systems with extensive use of computers. Prerequisites: AC233, AC332 and introductory data processing course.

AC335 Accounting Systems Theory
(1,0) 1
This course is designed to provide the student with the theory of accounting information systems. Together with computerized accounting applications, this course will substitute for AC334, accounting information systems. This course is designed for use only at the Regional Centers, where AC334 may not be offered. Prerequisite: Computerized accounting applications course and spreadsheet course.

AC421 Federal Taxation Accounting I
(3,0) 3
Basic concepts of the theory and practice applicable to the preparation of individual tax returns. A comprehensive analysis of regulations governing inclusions and exclusions of income; capital gains and losses; and personal, standard, and itemized deductions. Prerequisites: AC133 and junior standing or approval of the department.

AC422 Federal Taxation Accounting II
(3,0) 3
Theory and practice of income tax accounting as applied to tax credits, partnerships, and corporations. Includes some library tax research. Prerequisite: AC421.

AC427 Auditing
(4,0) 4
study of ethical, professional, and technical standards for independent audits and uditing procedures as they apply to internal controls. A study of audit program applica-ions as they apply to elements of the financial statements. Prerequisites: AC233 and AC333 or permission of instructor.

AC432 Advanced Accounting I
(3,0) 3
This course begins with a review of accounting theory and income presentation followed by a study of accounting for corporate combinations and preparation of consolidated financial statements. Prerequisite: AC233.

AC433 Advanced Accounting II
(3,0) 3
A study of special topics in accounting including partnerships, governmental accounting, accounting for non-profit organizations, fiduciary accounting and insolvency. Prerequisite: AC233.

ART

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

AT110 Fundamentals of Drawing and Composition
(3,0) 3
This course will acquaint the student with the various drawing media, such as pencil, charcoal, ink, wash and the use of various papers; studio problems in still life, object drawing, landscape, texture, and drawing from imagination and memory. Introduction to limited palette oil painting with emphasis on techniques of brush handling and concepts of visual organization language. Outside sketching required. Organic form, perspective, proportion, line, shape and tone are studied.

AT111 Painting Composition and Design
(3,0) 3
Projects in various media, primarily oil, acrylic paints and water color. Emphasis on individual development and expression. Outside sketching required. Specific pictorial problems, advanced paint handling and brush techniques will be studied. Understanding of structural, value and color principles by which great paintings are organized will be studied. Prerequisite: AT110, or permission of instructor.

AT210 Drawing, Painting and Composition
(3,0) 3
Advanced concepts of color and design elements basic to drawing and painting. The study of painting employing figure, still life, and nature as source material. Emphasis on visual perception and the study of the formal elements of painting. Prerequisite: AT111 or permission of instructor.

AT211 Graphic Arts, Watercolor and Mixed Media
(3,0) 3
Painting from figure, memory, portrait, and landscape stressing personal expression. Concentration on individual projects involving significant forms and symbols. Emphasis on advanced color and composition problems through study of spatial structure and color and order relative to pictorial meaning. Prerequisite: AT210 or permission of instructor.

AT250 Art History and Appreciation I
(4,0) 4
Study of arts exemplified in prehistoric and primitive cultures, and in the Mesopotamian, Egyptian, Aegean, Greek, Roman, early Christian, Byzantine, Moslem, Roman and Gothic eras. The course presents a development of historic, social and aesthetic principles, including a study of signs and symbols for students of art education, science, letters, business and engineering. Art history is taught in terms of visual experience and knowledge with art films, slides and demonstrations with art materials in addition to class lectures. Universal standards that can be applied to any work of art are studied. Counts as humanities credit for general education requirements.

AT251 Art History and Appreciation II
(4,0) 4
A study of European and American art from the Renaissance to the 20th century, including Renaissance, baroque, rococo, neoclassic, romantic, realist and contemporary. The history of art is presented from a technical, social and aesthetic standpoint, along with a study of rhythm, motion, and proportion. Works of art are considered on their own merits and development rather than on the basis of preconceptions. Art films, color slide presentations and demonstrations using art materials supplement class lectures. Counts as humanities credit for general education requirements.

BUSINESS

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

BA105 Business Mathematics
(3,0) 3
Solution of business problems. Topics include discounts, mark-ups, payroll, interest, financing charges, depreciation methods, real estate taxes, controlling cash, metric system conversion, inventory evaluation, annuities and insurance. Story problems. Prerequisite: MA091, mathematics placement beyond MA091, or satisfactory completion of LSSU's departmental arithmetic test during the first week of classes. Course not available for credit for students who have taken a full year of accounting.

BA121 Introduction to Business
(3,0) 3
Comprehensive coverage of the major activities of business and the key institutions that facilitate the business process. Topics covered include the following: American business enterprise system, international business, forms of business ownership, management and organization of human resources, production, marketing, information management and controls, business laws and ethics, finance, accounting, contemporary economic issues and business career opportunities. Contemporary business cases may be used for decision-making simulations. Enrollment open to freshman and sophomore business majors or any non-business major.

BA131 Hospitality and Service Management
(4,0) 4
An overview of the hospitality industry including the operation and trends in restaurant/food service management, lodging management and travel/tourism. Introduction to destinations and the following components of travel/tourism: modes of travel, tour management, associations, agencies, marketing and sales, career preparation and opportunities and travel publications. (Formerly HT121)

BA211 Business Statistics
(3,0) 3
An introduction to business statistics. Topics include collection and presentation of data, measures of central tendency, variation and skewness, probability, probability distributions, Bayes's Theorem, sampling, sampling distributions, estimation, hypothesis testing, simple linear regression and correlation. Prerequisite: MA111.

BA226 Records Management
(3,0) 3
Study and application of records control, forms design, filing systems (manual and electronic), microforms, and the records cycle. A computer simulation is completed utilizing a program to print, sort, and select records as reports or labels.

BA231 Business Communications
(3,0) 3
Business and management communications problems. Direct, indirect, and persuasive letters; memos, short reports and directives. Some assignments must be typed. Extensive writing practice. Prerequisite: Satisfactory completion of LSSU's English competency examination.

BA254 Business Law I
(3,0) 3
This portion of business law covers the law applicable to contracts, sales, personal property and bailments.

BA255 Business Law II
(3,0) 3
This portion of business law covers the law applicable to commercial paper, corporations, partnerships, agency and employment.

BA261 Business Skills
(1,0) 1
A series of specific, business-skill classes. Each course will provide 15 classroom hours of instruction. A student may register for one or more sections per term, for a maximum of three credits earned in this course.

BA291 Students in Free Enterprise
(0,3) 1
Students work in teams to develop outreach programs. They learn by means of "real-world" experiences, then teach others how market economies and businesses operate. Corporate CEOs and senior executives judge these programs annually in regional competitions, and the winners of those contests then compete at the international exposition. Outreach program development enhances students' creative and communication skills by preparation of written and oral presentations. May be repeated for credit for a total of four credits. Prerequisite: Permission of the instructor.

BA299 Internship in (Discipline)
(4,0) 4
This course is designed to provide students with an opportunity to earn credit while obtaining meaningful discipline-related work experience outside the classroom setting. Students are expected to spend a minimum of 180 hours in an appropriate work setting. The course may be repeated once for a maximum of eight credits. Prerequisite: 2.5 GPA, sophomore standing, employer and instructor approval, and submission to, and approval by, departmental faculty of internship plan, including method of evaluation.

BA308 Managing Cultural Differences
(3,0) 3
Study of differing cultural norms that impact business decisions; designed for students interested in international and cross-cultural activities.

BA354 Legal and Financial Issues in Health Care Administration
(3,0) 3
This course is intended for students preparing for careers in management in health care fields or as health care practitioners. Students will be made aware of legal and financial issues and problems including fault liability; institutional liability; forms of organization; credentialing and appointments; staffing issues; consent and refusal of treatment; and health care financing. The student will be more aware of the need to seek professional counsel to minimize and prevent litigation. Prerequisite: Junior standing or permission of instructor. Also listed as HE354.

BA399 Internship in (Discipline)
(4,0) 4
This course is designed to provide students with an opportunity to earn credit while obtaining meaningful discipline-related work experience outside the classroom setting. Students are expected to spend a minimum of 180 hours in an appropriate work setting. The course may be repeated once for a maximum of eight credits. Prerequisite: 2.5 GPA, junior standing, employer and instructor approval, and submission to, and approval by, departmental faculty of internship plan, including method of evaluation.

BA403 Business, Government and Society
(3,0) 3
This course is designed to study the most significant forces in an organization's environments (internal and external) so as to understand how they are changing the managerial job and how they are modifying the traditional role of business. This involves, among other things, an understanding of the ways in which a firm's organization, policies, strategies, procedures, decision-making processes, plans and controls are changing in response to environmental forces. Prerequisite: MN360.

BA466 Business Policy
(3,0) 3
This course provides an opportunity for the student to develop an understanding of the interrelationship of the various divisions, departments and functions of a business organization from a top management perspective. Library research and case analysis are utilized. Prerequisite: Senior status and completion of business core.

BA491 Research Reading In Business and Economics
(1-3,0) 1-3
Independent study and seminar; individual student guidance by faculty for selected research topics in business. Prerequisite: Senior status.

BIOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

BL105 Function of the Human Body
(3,2) 4
Survey of the functional anatomy and the related physiological processes needed for the understanding of normal human activity. Not open to biological majors or minors.

BL109 General Biology
(3,2) 4
An introduction to general biology. This course will provide an overview of biology and serve as a framework for further biological studies. Deliberations on the nature and philosophy of science (especially biology) will provide a basis for discussion of ecology, evolution, and cell biology. Prerequisites: MA086 and EN091 or equivalent scores on the math and English placement exams.

BL110 General Zoology
(1.5,1.5) 2
Introduction to the diversity of the animal kingdom, invertebrates and vertebrates. Adaptation and evolution are stressed as unifying themes throughout the course. Prerequisites: BL109. Note: "C" (2.0) or better is required to use this course as a prerequisite for other BL/EV courses.

BL111 General Botany
(1.5,1.5) 2
Introduction to the diversity of the plant kingdom. Will include the morphology, physiology, reproduction and general habitat of organisms traditionally considered as plants but with an organization reflecting modern concepts of evolutionary relationships. Prerequisites: BL109. Note: "C" (2.0) or better is required to use this course as a prerequisite for other BL/EV courses.

BL121 Human Anatomy & Physiology I
(3,3) 4
A two-semester sequence. This sequence does not apply toward a major or minor in biological science. The first semester covers organization of the human body, basic principles of chemistry, the integumentary system, the skeletal and muscular systems, the nervous system and special senses, and the endocrine system. Prerequisite: High school chemistry, or equivalent. This course may not be used as a general education natural science elective.

BL122 Human Anatomy & Physiology II
(3,2) 4
The continuation of BL121 with emphasis on the endocrine system, cardiovascular system, respiratory system, digestive system, urinary system and the reproductive system with an introduction to genetics. The course will conclude with a study of pregnancy and human embryology. Prerequisite: BL121.

BL130 Introduction to Remote Sensing
(2,4) 3
Introduction to the use of remotely acquired imagery to evaluate various ground features, utilizing mainly aerial photographs. Prerequisite: Completion of LSSU mathematics competency.

BL201 Plant Morphology
(2,3) 3
A survey of the principal groups of plants from the standpoint of their structure, development and reproduction. Emphasis is placed on evolutionary relationships as revealed by comparisons of the structural and reproductive traits. Prerequisite: BL111.

BL202 Field Botany
(2,3) 3
A course whose main objective is to allow the student to be able to recognize common families, genera, and species, especially those in the local flora. Prerequisite: BL111.

BL204 General Microbiology
(3,3) 4
This course will deal with the history and scope of microbiology, a study of microbial structure, growth, nutrition, metabolism, genetics, taxonomy and control. Labs will emphasize the identification and cultivation of molds and bacteria with various staining techniques. A study of mycoplasma, viruses and molds will be incorporated along with the origin of life and biochemical evolution, genetic engineering and recombinant DNA. Prerequisites: CH108 or CH116.

BL220 Genetics
(3,0) 3
A study of the nature, transmission, recombination, and function of hereditary material in animals, plants, and microorganisms. Prerequisites: BL110, BL111, and CH116. A statistics course is strongly recommended.

BL221 Genetics Laboratory
(0,2) 1
A course including exercises in Mendelian genetics, cytogenetics, microbial genetics, and computer simulations of population genetics. Corequisite or prerequisite: BL220.

BL223 Clinical Microbiology
(3,0) 3
A basic course in microbiology dealing with the study of microorganisms and pathogens in humans. A survey of viruses, molds and bacteria. Their morphology and growth characteristics will be discussed along with the physical and chemical means to control pathogenic microorganisms causing human infections. Prerequisites: CH105 and BL122. Does not apply towards a major or minor in biology.

BL230 Introduction to Soils
(3,3) 4
A course dealing with the soil ecosystem as a natural resource and as an environmental medium. Beginning with factors involved in soil formation the course will survey soil physical, chemical, and organic properties and how they respond to disturbance. Soil reactions to wastes and wetland interactions will be discussed. Laboratories will focus on description of local soils and the use of soil survey information in making soil interpretations. Prerequisites: CH108 or above; NS103 and RT102 or BL110 and BL111.

BL239 Wildlife Biology and Management
(2,0) 2
A lecture course covering the basic biology and management of wildlife. Prerequisite: Enrollment in the natural resource technology, biology or fisheries and wildlife program.

BL243 Vertebrate Anatomy
(3,3) 4
Study of the anatomy of vertebrates, including representatives of pre-chordates, agnatha, chondrichthyes, osteichthyes, amphibia, reptilia, aves, and mammalia. Laboratories emphasize thorough dissection of representatives of at least two diverse classes of vertebrates. Prerequisite: BL110 and sophomore standing.

BL272 Freshwater Fish Culture
(2,0) 2
Methods of fish propagation: Egg taking and incubation, feeding and nutrition, water quality monitoring, carrying capacity determination, hatchery problem-solving using computer models, and disease identification and treatment. At least one all-day field trip. Prerequisites: BL280 and sophomore standing or permission of instructor.

BL273 Fish Culture Practicum I
(0,6) 2
Fish hatchery practices and management decisions. Students actively involved in fish culture procedures through the reading cycle of salmonid fishes and possibly other coldwater species. Prerequisite: Permission of instructor.

BL274 Fish Culture Practicum II
(0,6) 2
Fish hatchery practices and management decisions. Students actively involved in fish culture procedures through the breeding of salmonid fishes and possibly other coldwater species. Prerequisite: Permission of instructor.

BL275 Aquatic Entomology
(2,3) 3
Survey of regional lake and stream insects with emphasis on identification and life histories. Role of various groups in aquatic systems and as fish food organisms. Prerequisite: BL110.

BL280 Biometrics
(3,0) 3
Applications of statistics to biological problems, with a focus on analysis of variance, linear regression and correlation. Prerequisite: MA207. This does not count as a life science general education requirement.

BL290 Independent Study in Biology
(1-4,0) 1-4
Special studies and/or research in biology for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources office.

BL302 Invertebrate Zoology
(3,2) 4
A study of the invertebrate groups with emphasis on morphology, phylogeny and life cycles. Prerequisites: BL110 and sophomore standing.

BL310 Ichthyology
(2,3) 3
Anatomy, physiology, behavior, taxonomy and natural history of fishes, with emphasis on freshwater species. Prerequisite: BL110; sophomore standing.

BL312 Ornithology
(2,4) 3
The biology and taxonomy of birds. Labs will focus upon bird anatomy and bird recognition using video tapes and specimens. Prerequisites: BL110 and junior standing.

BL315 Plant Physiology
(3,3) 4
Organization of plants, plant replication, photophysiology and photosynthesis, mineral nutrition, water transport in higher plants, plant growth substances, physiology of seeds, control of plant growth and plant cell tissue culture. Prerequisites: BL111 and CH226.

BL320 Cell Biology
(3,3) 4
Cellular structure and function with emphasis on organelle ultrastructure, molecular organization of the cell, cell membranes and permeability, the cytoskeleton and cellular interactions. Prerequisites: BL109, CH226, and junior standing.

BL330 Animal Physiology
(3,3) 4
A study of the physical and chemical properties of the animal systems as they concern homeostasis. Prerequisites: BL110 with a C (2.0) or better and CH116 with a C (2.0) or better.

BL332 Embryology
(2,2) Alternate Years 3
A study of the development of representative vertebrates. Offered odd-numbered fall semesters. Prerequisites: BL110 and sophomore standing.

BL337 General Ecology
(2,3) Alternate Years 3
Fundamental concepts of plant and animal ecology, population dynamics and ecosystem analysis. Prerequisites: BL110 and BL111 and MA111 with a C (2.0) or better.

BL380 Clinical Hematology and Hemostasis
(3,3) Alternate Years 4
A study of the components of blood. Discussions of the formed elements to include normal and malignant states; anemias, leukemias, lymphomas, hemostasis (coagulation) processes and disease states. Laboratories will cover routine and automated blood component measurements. Offered even-numbered spring semesters. Prerequisites: CH226 and BL330 or permission of instructor.

BL395 Junior Seminar
(0,2) 1
Literature searching, scientific writing, and oral presentation of scientific data. Students will be expected to listen to presentations of peers enrolled in BL499 and to develop a topic for their senior thesis. Prerequisite: Junior standing.

BL401 Honors Program I
(0,8) 4
Biological sciences honors program I. (open to students earning a bachelor of science degree in biological sciences with a grade point of 3.5 or higher). An undergraduate research project will be outlined in consultation with the supervising instructor and submitted to the department for approval. Outline must be approved before the first semester of the senior year. All grades for this sequence will be deferred until the final semester. Eight credit hours of honors credit will be substituted for eight hours of electives upon successful completion of the research sequence. The independent study courses will not be open to students electing the honors program sequence. The completed research may be used for senior thesis.

BL402 Honors Program II
(0,8) 4
Biological sciences honors program II. This is a continuation of the honors research sequence.

BL405 Animal Behavior
(3,0) Alternate Years 3
A course designed to examine the proximate mechanisms and the evolutionary development of animal behavior. Important concepts are explained by reference to illustrative studies. An appreciation of the methods and theoretical significance of current research is emphasized. Prerequisites: Junior standing and BL330 or BL337. Offered even-numbered fall semesters.

BL411 Mammology
(2,3) 3
Emphasis will be on the physiological, behavioral and ecological adaptations of mammals. Identification and classification will be emphasized. Some field work may be included. Prerequisite: BL110 and BL315 or BL330.

BL420 Population Genetics and Evolution
(3,0) 3
A course including historical and modern concepts of evolutionary theory. Some coverage of origin of life concepts will be included. Prerequisite: BL220

BL422 Parasitology
(2,2) 3
A study of the morphology, taxonomy, habitats and life cycles of parasites. Prerequisite: BL110.

BL423 Immunology
(3,3) 4
A study of antigens, antibodies, antigen-antibody reactions, blood groups, phagocytosis and hypersensitivity. Prerequisites: BL110, BL204, CH226.

BL432 Fisheries Ecology and Management
(2,3) 3
Current concepts and techniques relating to the management of sport and commercial fishery resources including lake and stream surveys. Prerequisites: BL110 and junior standing or permission of instructor.

BL433 Histology
(2,2) Alternate Years 3
Study of the microscopic anatomy of tissues, with emphasis on mammals. Related physiological processes are integrated with the anatomical studies. Prerequisites: BL110 and junior standing.

BL437 Plant Ecology
(2,3) 3
The measurement and description of plant communities as well as some autecological studies. Prerequisites: BL202, BL337, and MA207 with a C (2.0) or better.

BL439 Wildlife Ecology and Management
(2,3) 3
A study of ecological principles as they relate to wildlife management. Discussion of the history, philosophy, and practice of wildlife conservation. Demonstration of field and laboratory techniques. Prerequisite: BL312 and BL337.

BL445 Limnology
(2,3) 3
An investigation of the principles of freshwater ecology of lakes and streams. Prerequisite: BL337.

BL450 Laboratory Apprenticeship
(0,3) per credit1-2
Students will assist in laboratories, learning instructional techniques, under direction of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the faculty member in charge of the specific laboratory, and the dean. Credits may be used as BL electives. This is a credit/no credit course.

BL460 Clinical Laboratory Science Internship
30
(15 credits per semester for a maximum of 30 credits)
Practical and didactic training with regular laboratory personnel. Branch training is supplemented by informal lectures, oral quizzes and written examinations. Offered only at approved or affiliated hospital laboratories. Prerequisite: Satisfactory completion of required college course work.

BL480 Advanced Clinical Microbiology
(2,3) Alternate Years 3
An advanced course in clinical microbiology concerning the role of bacteria, viruses, and fungi as the cause of various human infections. Standard modern clinical laboratory methodology will be covered. Offered odd-numbered spring semesters. Prerequisites: BL204, CH226, or permission of instructor.

BL490 Independent Study in Biology
(1-4,0) 1-4
Special studies and/or research in biology for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have junior or senior standing, have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources office.

BL499 Senior Thesis
(1,3) 2
Required of seniors majoring in biology. Students present seminars and provide an audience for fellow seniors. Each paper presented will be critically analyzed by the audience. Prerequisite: BL395.

CRIMINAL JUSTICE/FIRE SCIENCE

CF601 Protective Services Policy Analysis
(3,0) 3
This course examines the interrelatedness and policy implications of the protective services components.

CHEMISTRY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

CH091 Basic Chemistry
(3,0) 3
Thorough exposure to elementary chemistry for students inadequately prepared for college-level chemistry. Emphasis on drill to enhance problem-solving skills. Proficiency in basic mathematics (MA086) required. Students must receive a C (2.0) or better in this course to qualify for CH104, CH108, or CH115. Credit in this course does not apply toward graduation.

CH104 Life Chemistry I
(3,0) 3
An introduction to selected principles of chemistry, including organic chemistry, with emphasis on their physiological importance and their applications to nursing and other health related professions. This course does not apply toward a major or minor in chemistry. Prerequisite: MA086 or equivalent.

CH105 Life Chemistry II
(3,2) 4
A continuation of organic chemistry presented in CH104 as well as a presentation of the chemical processes taking place in metabolism. The interrelationships between the metabolic processes of living systems are discussed along with their underlying chemical reactions. Prerequisite: CH104.

CH108 Applied Chemistry
(3,3) 4
An introduction to selected principles of chemistry with emphasis on technological applications. Credit in this course does not apply toward a major or minor in chemistry.

CH115 General Chemistry I
(4,3) 5
Fundamental principles of chemistry with emphasis on atomic structure, molecular structure and stoichiometry. Prerequisites: High school chemistry and MA092 or equivalent, each with a grade of C (2.0) or better.

CH116 General Chemistry II
(3,3) 4
Continuation of CH115 with emphasis on equilibrium. Prerequisite: CH115 with a grade of C (2.0) or better.

CH225 Organic Chemistry I
(3,3) 4
Fundamental principles of organic chemistry, covering the structures, reactions and properties of aliphatic and alicyclic compounds. The course will introduce the study of organic nomenclature, functional group chemistry, stereochemistry, reactive intermediates, organic synthesis, reaction mechanisms and conjugated unsaturated systems. The laboratory introduces basic organic laboratory techniques and includes experiments in organic separations, synthesis, and analysis. Prerequisite: CH116.

CH226 Organic Chemistry II
(3,3) 4
A continuation of CH225 covering the structures, properties and reactions of aromatic compounds, carbonyl compounds, carboxylic acids and their functional derivatives, phenols, amines, organometallics, carbohydrates, amino acids and proteins. The course will

introduce the study of spectral methods of structure determination and expand the study of organic synthesis and mechanisms. The laboratory will include experiments in spectroscopy, organic synthesis and mechanisms, qualitative organic analysis, and instrumental analysis. Prerequisite: CH225 with a grade of C (2.0) or better.

CH231 Quantitative Analysis
(2,3) 3
Evaluation of analytical data and study of gravimetric and titrimetric methods of analysis. Prerequisite: CH116 with a grade of C (2.0) or better.

CH232 Instrumental Analysis
(2,3) 3
Continuation of CH231. An instrumental analysis course involving the theory and use of spectrochemical, electroanalytical and separation methods for the characterization and determination of selected chemical substances. Prerequisite: CH231.

CH290 Independent Study in Chemistry
(1-4,0) 1-4
Special studies and/or research in chemistry for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources office.

CH341 Environmental Chemistry I: Water and Water Pollution Control
(3,3) 4
A study of the environmental chemistry of water, the measurement and remediation of water quality problems, the toxicology of water pollutants, and the environmental aspects of energy use. Also listed as EV341. Prerequisites: CH225, CH231, and NS103 or permission of instructor.

CH342 Environmental Chemistry II: Air and Solid Wastes
(3,3) 4
A study of the environmental chemistry of the atmosphere and the geosphere, including the measurement and remediation of air pollution and soil contamination problems. The nature and handling of hazardous wastes will also be covered. Prerequisites: CH225, CH231, NS103.

CH351 Introductory Biochemistry
(3,3) 4
Introduction to the chemistry of biological molecules, including the general properties and chemical transformation of amino acids, proteins, carbohydrates, lipids and nucleic acids. Emphasis will be on correlating chemical reactions with biological function. An introduction to the intermediary metabolism of the carbohydrates, amino acids, lipids and nucleic acids will also be presented. Prerequisite: CH226.

CH352 Biochemistry II: Intermediary Metabolism
(3,0) 3
A continuation of introductory biochemistry with a more-detailed study of the metabolism of carbohydrates, lipids, and nitrogen containing molecules such as amino acids and nucleotides. Emphasis will be placed on the similarities and differences among the various metabolic pathways and cycles. The interrelationships that exist among the various metabolic processes will also be discussed. An introduction to the genetic code and its relationship to nucleic acid and protein biosynthesis will also be presented. Prerequisite: CH351.

CH353 Introductory Toxicology
(3,0) Alternate Years 3
An introduction to toxicology, including its history, types of poisons, their mode of operation and the biochemistry of detoxification. Environmental problems caused by toxic contaminants will be discussed. Offered even-numbered spring semesters. Prerequisite: CH351 or permission of instructor.

CH361 Physical Chemistry I
(4,0) 4
Chemical thermodynamics with applications to both phase and chemical equilibria. Prerequisite: CH116, one year of calculus and one year of physics.

CH362 Physical Chemistry II
(3,3) 4
Continuation of CH361 with emphasis on chemical dynamics, quantum chemistry, and structure. Laboratory experiments complement the lecture. Prerequisite: CH361.

CH450 Laboratory Apprenticeship
(0,3) per credit1-2
Students will assist in laboratories, learning instructional techniques, under direction of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the faculty member in charge of the specific laboratory, and the school dean. Credits may be used as CH electives. This is a credit/no credit course.

CH490 Independent Study in Chemistry
(1-4,0) 1-4
Special studies and/or research in chemistry for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have junior or senior standing, have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources office.

CRIMINAL JUSTICE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

CJ101 Introduction to Criminal Justice
(3,0) 3
A survey of the evolution of criminal justice with particular emphasis on the development of western models of justice. Included will be the role of law enforcement, corrections, the courts and loss control.

CJ102 Police Process
(3,0) 3
Basic principles and techniques of administration which apply to criminal justice organizations. Emphasis on decision making, authority, human relations and communication within organizations.

CJ110 Introduction to Corrections
(3,0) 3
History and philosophy of correctional policy and need for correctional reform; correctional system from arrest through sentencing; correctional personnel and clients.

CJ130 Client Relations in Corrections
(3,0) 3
Meaning and functions of culture and discrimination, minorities in Michigan, affirmative action and attitude formation; ethics, values and professional responsiveness.

CJ140 Correctional Client Growth and Development
(3,0) 3
Emphasis on needs, identities and development of recipients of correctional services; to assist students in gaining insights into development of sensitivity to behavior and motivations of corrections clients. Specific problems of prisoners and intervention strategies are reviewed.

CJ201 Firearms Training
(0,2) 1
Emphasis on safe weapon handling, the fundamentals of good marksmanship, proper methods of cleaning and weapon nomenclature. A variety of weapons will be used. Students will have to provide their own targets and ammunition. Prerequisite: Criminal justice student, sophomore standing or permission of department chair.

CJ202 Canadian Criminal Law
(3,0) 3
Survey of Canadian substantive and procedural criminal law including search and seizure, arrest, evidence and statutory and case law.

CJ206 Law Enforcement/Loss Control Internship
(3,0) 3
Field experience for correlation of theoretical knowledge with practice in participating law enforcement or loss control agencies. Prerequisite: Permission of the instructor or sophomore standing. Course may be elected twice for credit of six hours.

CJ212 Loss Control
(3,0) 3
Study of security, including historical, legal and philosophical framework for various phases of security operations in our society today.

CJ220 Institutional Corrections
(3,0) 3
A survey of the history and philosophy of correctional institutions focusing on: The use of imprisonment as a mechanism of social control, custody versus treatment, rights of prisoners, prison and jail management, institutional training programs, examination of contemporary correctional institutions, prison and jail architecture, and prisoner society.

CJ240 Community-Based Corrections
(3,0) 3
A survey of the history, development, techniques and fundamentals of non-institutional correctional programs and services. Emphasis will be placed on the necessity of correctional programs to interact with other human service agencies within the community.

CJ243 Investigation
(3,0) 3
Introduction to investigation and the techniques of forensic science with emphasis upon gathering and documenting information for determination of fact. Prerequisite: CJ101 or permission of instructor.

CJ250 Correctional Law
(3,0) 3
Survey of substantive and procedural correctional law including sentencing, probation, parole, imprisonment, fines and restitution, and prisoners rights. Case law method used, based on appellate court decisions which evolve from criminal defendant litigation and complex legal issues concerning American corrections.

CJ306 SECURITY SYSTEMS
(3,0) 3
Overview of specialized areas of security in specific facilities with special attention given to management of security information. Prerequisites: CJ212 or permission of instructor.

CJ313 Crisis Intervention and Deviant Behavior
(3,0) 3
Survey of philosophy, theory and practice involved in the treatment of different crisis situations most commonly confronting the law enforcement officer in the performance of regular duties. Prerequisite: CJ101, 102 or approval of instructor.

CJ319 Substantive Criminal Law
(3,0) 3
Survey of substantive criminal law as a means of attaining socially desirable ends including protection of life and property. Deals with historical, philosophical concepts as well as case law. Prerequisite: CJ101 or permission of instructor.

CJ321 Ethical Issues in Public Safety
(3,0) 3
Consideration of selected issues in public safety organizations. Emphasis on the role of practitioners and relations with the various publics. Students will be given moral dilemmas and will consider their individual value system. Prerequisites: CJ101,102, or permission of instructor.

CJ330 Correctional Casework
(3,0) 3
The history, standards and principles of correctional casework are presented; the roles, functions and goals of casework are discussed; the competencies and training required for effective casework are considered; and correctional clients — probation and parole selection and appraisal — are concentrated upon. Prerequisites: CJ220, CJ240, junior or senior standing and permission of instructor.

CJ341 Fire Cause and Arson Investigation
(3,0) 3
Determination of fire cause and origin and explosion causes. Prevention, documentation and legal aspects examined. Prerequisite: Junior standing or permission of instructor.

CJ345 Statistics and Design for Public Safety
(4,0) 4
Introduction to research methodology and designs utilized in public safety. Includes sampling, descriptive statistics, inferential statistics, sources of error in presenting findings, and preparing and reading research reports. Prerequisite: Junior standing in criminal justice or fire science and fulfillment of mathematics competency graduation requirement.

CJ355 Juvenile Justice
(3,0) 3
Criminological theories of the causes of juvenile delinquency and prevention strategies. The functions of the juvenile justice system including: Police, courts, detention and legal rights. The Canadian Young Offenders Act will also be studied. Prerequisites: CJ101 and SO214. (formerly CJ106)

CJ401 Senior Seminar
(3,0) 3
Seminar and independent study course with individual student guidance by faculty on selected research topics in criminal justice. Prerequisites: Senior standing or permission of instructor.

CJ402 Criminal Justice Internship
3-9
Criminal justice internship with an agency. Credit is based on 34 hours of field work per credit hour. Students must make application by the ninth week of the previous semester. Prerequisite: Senior standing or permission of instructor.

CJ406 Advanced Canadian Jurisprudence
(3,0) 3
Expands upon the material covered in CJ202, Canadian criminal law, including trail tactics and procedures, sentencing, jurors, invasion of privacy and other current topics. Prerequisite: CJ202 or permission of instructor.

CJ409 Procedural Criminal Law
(3,0) 3
Principles, duties and mechanics of criminal procedures as applied to important areas of arrest, search and seizure. Prerequisite: CJ319 or approval of the instructor.

CJ425 Women and Criminal Justice
(3,0) 3
An examination of theories of female criminality and the treatment of women in criminal justice. Various issues relating to women as professionals in criminal justice will be covered. The unique issues which arise when females are incarcerated will also be examined. Prerequisites: CJ101, junior or senior standing, or permission of instructor.

CJ444 Criminalistics
(3,3) 4
Criminalistic methodology and practice including crime scene techniques for specific offenses, collection and preservation of evidence, narcotics and dangerous drugs, fingerprinting, presentations, and other related topics. Contains MLEOTC mandated hours. Prerequisite: CJ243 or permission of instructor.

CJ484 Futures Research: Long-Range Planning for Criminal Justice
(3,0) 3
This course will explore probable and possible futures and the impact on crime, criminality and the criminal justice system. It will explore alternative methods and systems to deal with projected change. Prerequisites: CJ101, CJ102, CJ321 or permission of instructor.

CJ490 Independent Study for Criminal Justice
(1-4) 1-4
This may take the form of either a research project or a directed reading on a specific subject. One to four credits over a period of one or more semesters may be granted according to the nature of the student's project. Prerequisite: Permission of instructor. May be repeated up to six credits.

CJ525 Women and Criminal Justice

An examination of theories of female criminality and the treatment of women in criminal justice. Various issues relating to women as professionals in criminal justice will be covered. The unique issues which arise when females are incarcerated will also be examined. Prerequisites: Undergraduates must have permission of instructor.

CJ584 Futures Research: Long-Range Planning for Criminal Justice
(3,0) 3
This course will explore probable and possible futures and the impact on crime, criminality and the criminal justice system. It will explore alternative methods and systems to deal with projected change. Prerequisites: Undergraduates must have permission of instructor.

COMPUTER SCIENCE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

CS101 Introduction to Microcomputer Applications
(2,2) 3
The study of a selection of contemporary microcomputer applications, including operating system concepts, programming concepts, word processing, database management systems and spreadsheets. Brief survey of other applications, such as presentation graphics, computer-assisted drafting and desktop publishing. Prerequisite: MA086.

CS105 Introduction to Computer Programming
(2,2) 3
An introductory course in computer programming using the Pascal language, intended for students with no prior computer programming experience. Input, output and simple data types. Arithmetic, control structures and simple data structures. Sound, graphics and animation techniques. Prerequisite: MA086.

CS121 Survey of Computer Science
((3,0) 3
A broad-based introduction to the discipline of computer science, using the C++ programming language and basic operating system features as vehicles. Basic programming principles, including built-in and programmer-defined data, operators, functions and control structures. Applications drawn from basic computer science areas, including computer architecture, automata, artificial intelligence, database management, graphics, communication and numerical computation. Prerequisite: CS105 with a minimum grade of C, or instructor approval.

CS201 Data Structures and Algorithms
(3,0) 3
An introductory course in data structures and algorithms, with an emphasis on abstraction, implementation and analysis. Pointers, lists, stacks, queues, trees and binary trees, and graphs. Application of various data structures to problems selected from the spectrum of computer science topics. Prerequisite: CS121 with a minimum grade of C, or instructor approval.

CS205 Computer Organization and Architecture
(3,0) alternate years 3
A hardware-oriented introduction to the structure of modern computer systems, emphasizing the role of, and interrelationships between, the various components. The evolution of modern computer systems. Memory organization, peripheral devices and their connectivity. Instruction sets, arithmetic and central processing unit structure. Control unit organization and operation. Alternative computer architectures. Prerequisite: CS121 with grade of C or better. Corequisite CS201.

CS210 COBOL Programming
(3,0) alternate years 3
An introduction to the COBOL programming language emphasizing facilities for the effective management of files and databases. Overview of COBOL syntax, arithmetic, input/output and control structures in COBOL. Report generation and table management.

COBOL facilities for sorting and merging files. Sequential, relative and indexed file organizations and their applications. Facilities for interfacing with database management systems. Prerequisite: CS121.

CS211 Database Applications
(3,0) 3
An introductory course in database design and implementation, using microcomputer-based relational database software. Single and multi-table databases, forms and reports, query processing, data import and export, and database-related programming. Prerequisite: CS201.

CS221 Computer Networks
(3,0) 3
An introduction to the basic principles of computer networks and communication, exploring both the hardware necessary to support computer networks and the software needed to utilize those networks. Basic network topologies, network protocols, and local and wide-area networks. Prerequisites: CS201 and CS205.

CS290 Independent Study in Computer Science
(1-4,0) 1-4
Special studies and/or research in computer science for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the department head. This course may be repeated for a maximum of eight credits. Prerequisites: Sophomore standing or higher and permission of the instructor.

CS312 File and Database Management
(3,0) alternate years 3
An introduction to files and file processing, with an emphasis on non-sequential organizations for supporting multi-file databases. Direct file structures and hashing, indexing, tree-structures organizations. Expandable file structures. Secondary key retrieval. Application to database structures. Prerequisite: CS211.

CS321 Computer Graphics
(3,0) alternate years 3
An introduction to the generation of graphical images by computer. Survey of common graphics devices. Generation of lines and curves. Representation of two-dimensional objects. Techniques for area filling. Scaling, rotation and translation in two dimensions. Rendering three-dimensional objects by projections. Scaling, rotating and translating in three dimensions. Hidden line and hidden surface detection and removal. Prerequisite: CS201, and MA141 or MA151.

CS333 Systems Programming
(3,0) alternate years 3
An introduction to systems-level programming using C and assembly language. Design and development of specialized systems utilities, such as window-management packages and command interpreter shells. Overview of the function and design of system utility programs, such as text editors, language processors and linkers. Prerequisite: CS205.

CS334 Operating Systems Concepts
(3,0)alternate years 3
Definition and historical development of operating systems. Characteristics of batch, interactive and multiprogramming systems. File systems, processor and memory management. Communication, concurrency, deadlock and protection. Prerequisite: CS333.

CS418 Software Engineering
(1,4) 3
A project-based introduction to the design and implementation of computer software. Requirements analysis, software specification, design methodologies, implementation, testing, verification, documentation and maintenance. Development of a complete software system for "real-world" clients by project teams. Prerequisite: CS312.

CS490 Research Topics in Computer Science
(1-4,0) 1-4
Special studies and/or research in computer science for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the department head. This course may be repeated for a maximum of eight credits. Prerequisites: Junior standing or higher and permission of the instructor.

DATA PROCESSING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

DP151 Computer Applications
(1-2,0) 1-2
A series of courses using computer applications programs. Each course will provide 15 classroom hours of instruction per credit. A student may register for one or more sections per term for a maximum of five credits earned in this course. Students without computer experience are expected to take the introduction to computers module as a prerequisite.

DP160 Pesonal Computers Work-Station Operating Systems
(1-3,0) 1-3
A series of courses covering popular personal computer workstation operating systems. Each course will provide 15 classroom hours of instruction per credit hour. A student may repeat this course covering a different workstation operating system for a maximum of six credit hours.

DP163 Troubleshooting and Repair of Personal Computers
(2,2) 3
A basic introduction to the architecture, installation, maintenance, troubleshooting and repair of personal computers. The student will learn elementary principles of electronics, magnetism and logic. The disassembly and upgrading of a personal computer will be covered in the laboratory as well as the use of diagnostic hardware and software. Prerequisite: At least one credit hour of DP160.

DP225 Word Processing Techniques
(2,0) 2
Introduction to WordPerfect 6.1 for Windows and Perfect Office. Students will cover basics of word processing including document creating, saving, printing, and some advanced features such as table, merge, graphics and report formatting. Hands-on experience is scheduled in labs outside of classroom hours.

DP241 Desktop Publishing
(3,0) 3
Emphasis is on understanding the basic concepts of desktop publishing and how to produce well-designed desktop publications. Focus is on creating brochures, graphics, newsletters, reports and resumes using a high-end page composer, paint and vector graphics software. Prerequisite: English competency and a working knowledge of a word processing software application, or permission of instructor.

DP260 Personal Computers Network Operating Systems
(1-3,0) 1-3
A series of courses covering popular personal computer network operating systems. Each course will provide 15 classroom hours of instruction per credit hour. A student may repeat this course covering a different network operating system for a maximum of six credit hours. Prerequisite: At least one credit hour of DP160.

DP263 Storage, Protection and Recovery of Personal Computer
(2,2) 3
Continues and expands upon DP163 with emphasis on disk; drives, formatting disks, editing, virus detection, prevention and eradication. Prerequisite: DP163.

DP345 Presentation Graphics
(3,0) 3
The design of overheads and slides used in presentations. Color, font size, placement and visual effect will be studied to produce effective visuals. The effective use of visuals in presentations will be covered. Graphics programs will be used to prepare visuals. Prerequisites: English competency and working knowledge of word processing or desktop publishing or permission of instructor.

ECONOMICS

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EC201 Principles of Macroeconomics
(3,0) 3
Nature and scope of economics; national income accounting; problems of unemployment and price instability; public revenues and expenditures; money and banking; fiscal and monetary policies to promote stability and economic growth. Prerequisite: Mathematics competency.

EC202 Principles of Microeconomics
(3,0) 3
Principles of economic reasoning; supply and demand analysis; theories of production; price and output determination under each of the four market structures; factor returns and income distribution theories; public policy implications. Prerequisite: Mathematics competency.

EC208 Honors Principles of Microeconimics
(3,0) 3
This course employs algebra, geometry and calculus intensively in the development of principles of microeconomics. The topics covered are nominally the same as in EC202; however, there is more advanced coverage of topics in which a knowledge of mathematics is required. Prerequisites: MA151, MA141, or MA112. Credit not allowed for both EC202 and EC208.

EC209 Honors Principles of Macroeconomics
(3,0) 3
This course employs algebra, geometry and calculus intensively in the development of principles of macroeconomics. The topics covered are nominally the same as in EC201; however, there is more advanced coverage of topics in which a knowledge of mathematics is required. Prerequisites: MA151, MA141, or MA112. Credit not allowed for both EC201 and EC209.

EC302 Managerial Economics
(4,0) 4
A study of the application of economic analysis to managerial decisions. Topics include the firm and its environment, demand estimation, production and cost analysis, optimization and profit maximization, analysis of markets, pricing strategy and analysis of project decisions. Prerequisite: MA112 or MA141 or equivalent.

EC304 Money, Banking and Monetary Policy
(3,0) 3
Monetary theory; study of financial institutions and central bank authorities; monetary policy and its limitations; changing structure of financial markets and industry; relationships between money, prices and national income. Prerequisite: EC201.

EC305 Public Finance
(3,0) 3
The economics of public finance, including taxation, public expenditures and fiscal policy. Rationale and objectives of government activity in a market system; distribution of tax burden; income redistribution effects of taxation and expenditure programs. Prerequisite: EC201 or EC202.

EC308 Intermediate Microeconomics
(3,0) 3
Theory of demand; consumer choice and utility analysis; production and cost analysis; price-output determination under the four market structures; resource allocation; public policy and managerial applications emphasized. Prerequisite: EC202.

EC309 Intermediate Macroeconomics
(3,0) 3
Determinants and measurement of national income; theories of consumption and investment; aggregate economic analysis including IS-LM and aggregate demand-aggregate supply models; unemployment and inflation; stabilization policies; economic growth. Prerequisite: EC201.

EC403 Private Enterprise and Public Policy
(3,0) 3
Review of price theory; structure, conduct and performance; antitrust laws and application: restraint of trade, monopoly, mergers and trade practices; regulation. Prerequisite: EC202.

EC408 International Economics
(3,0) 3
Pure theory of trade and comparative advantage; free trade versus protectionism; trade problems of developing nations; balance of payment accounting; exchange rates; international monetary systems. Prerequisites: EC201 and EC202.

EC409 Seminar in Economics
(1-2,0) 1-2
Discussion of economic issues, theories and their applications. May be repeated for credit with the approval of the instructor for a total of four credits.

EDUCATION

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ED101 Foundations of Early Childhood Education
(3,0) 3
An introduction to the field of early childhood. Topics include its history, application of theories to curriculum, types of programs and issues in the field of child care. Observations of various early childhood settings will be required.

ED105 Child Guidance and Welfare
(3,0) 3
Through readings, discussions, observations and interactions with children, the student will learn how to develop guidance strategies when working with children in an early childhood setting. Prerequisite: PY155 or PY265.

ED110 Curriculum Development and Teaching Practices
(3,0) 3
Developing curriculum and teaching practices based on the whole child's development: Cognitive, physical, social, emotional, and creative. Emphasis on planning play activities for learning centers. Observations of children in an early childhood setting will be required.

ED111 Infants and Toddlers: Developmentally Appropriate Practices
(3,0) 3
Includes theories of emotional, physical, social and cognitive stages of development of children ages 0 to 36 months. The knowledge of these stages will be applied to matching developmentally appropriate teaching and caregiving practices. Issues in administering infant/toddler programs will also be discussed. Prerequisite: PY155 or PY265.

ED220 Early Childhood Literature
(3,0) 3
Readings in developmentally appropriate literature and related activities across the curriculum for young children, ages birth through kindergarten. Prerequisite: EN110 and SD101.

ED260 Practicum I
(1,12) 4
The student will complete 12.5 hours weekly in an early childhood laboratory setting. Attendance at a weekly seminar is also required. Prerequisites: ED101, ED105, ED110, and ED111; and permission of instructor. Students should seek permission of instructor no later than 10th week of semester preceding enrollment. Credit/no credit grade.

ED261 Practicum II
(1,12) 4
The student will complete 12.5 hours weekly in an early childhood laboratory setting. Attendance at a weekly seminar is also required. Prerequisites: ED260 and permission of instructor. Students should seek permission of instructor no later than tenth week of semester preceding enrollment. Credit/no credit grade.

ED270 Administration of Early Childhood Programs
(3,0) 3
Knowledge of financial, legal, supervisory and administrative procedures used in operati an early childhood program will be gained through lectures, discussions, readings and activities. Prerequisite: ED260 practicum I or permission of instructor.

ELECTRICAL ENGINEERING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EE101 Introduction to Electrical Engineering
(1,2) 2
An introduction to the different areas of study within the field of electrical engineering and the broader field of engineering. Laboratory activities will introduce computer programming and use computer simulation exercises to introduce areas of study within engineering. Prerequisites: MA109 and MA140.

EE105 Fabrication Fundamentals
(0,2) 1
This course introduces students to the process of the layout and construction of electronic circuits. Students will develop basic skills in the use of electrical CAD software, soldering, construction techniques and circuit board construction. Prerequisite: MA150 or equivalent.

EE125 Digital Fundamentals
(3,2) 4
A study of numbering systems, programming concepts, binary arithmetic, combinational and sequential digital circuitry, and memory devices with an introduction to computer architecture. Prerequisites: MA109 and MA140.

EE210 Circuits and Machines
(3,2) 4
A study of simple electrical rules, theorems and laws applicable to AC and DC circuits. Specifically, Kirchhoff's laws, Thevenin's and Norton's theorems, superposition, current and voltage divider rules, etc. will be studied and applied to circuit analysis. Further study in RL and RC transient circuits, motors and generators will be provided. Laboratory work will focus on the use of PLC to control motors and other DC and AC machines. Prerequisite: MA143.

EE250 Micro-Controller Fundamentals
(3,2) 4
An introduction to micro-controller architecture, machine and assembly language program development, and computer system hardware and interfacing techniques. Prerequisite EE125.

EE305 Analog and Digital Electronics
(2,3) 3
A study of digital electronics, electronic devices, and circuits for non-electrical engineering majors. Topics include discrete logic device, diodes, and amplifiers. Prerequisite: EE210.

EE310 Network Analysis I
(4,3) 5
A study of simple linear electrical networks using mesh, nodal and other analysis methods. Additional circuit ana 'ork is performed using vectors, phasors and linear algebra. Networks will includ , parallel, series-parallel, RLC and transformer systems. boratory work will trate on verification of the theory through circuit fabrication d computer simulations. Prerequisites: MA243 and EE210. Corequisite: MA343.

315 Network Analysis II
,0) 3
A continuation of EE310 with emphasis on the study of complex electrical networks using differential equations, frequency response techniques, filters, Laplace transforms, Fourier series and computer simulation. Prerequisites: EE310.

EE330 Electro-Mechanical Systems
(3,2) 4
A study of AC and DC motors, motor controllers, timing and sequencing circuits, transformers, power, and power distribution systems. PLC are utilized in the laboratory to integrate the power systems to various electro-mechanical devices. Prerequisites: EE210 and MA243.

EE355 Micro-Controller Systems
(3,3) 4
A study of micro-controller systems design based on the MC68HC11. Assembly and C languages are used for program development. Fuzzy logic is introduced for embedded system design. Interfacing techniques, real-time control, and micro-controller emulator use are emphasized. Prerequisites: EG265 and EE250. Corequisite: EE375.

EE370 Electronics I
(3,3) 4
A study of the operation and characteristics of electronic devices including diodes and transistors. Emphasis will be placed on the analysis and design of circuits using these devices, including power supplies, biasing circuits and small signal amplifiers. Prerequisites: EE210 and MA144.

EE375 Electronics II
(3,3) 4
A study of the operation and characteristics of electronic devices including field-effect transistors, operational amplifiers and thyristors. Emphasis will be placed on the analysis and design of circuits using these devices, including bias circuits, frequency response, multi-stage amplifiers, operational amplifier circuits and thyristor applications. Prerequisites: EE370. Corequisite: MA243.

EE420 Digital Design
(3,3) 4
A study of logical and electronic circuit design techniques including combinational and sequential circuits, programmable logic devices, MSI and LSI design. Synchronous and asynchronous state machine design is emphasized for control applications. Prerequisites: EE125 and EE370.

EE425 Digital Signal Processing
(2,2) 3
A study of the application of real-time digital signal processing in analog and digital control system design. The course emphasizes discrete Fourier transforms, design of digital filters, sampling theory, and process control using data acquisition equipment and computer simulation techniques. Additional emphasis is placed on communication theory in relation to its utilization of DSP technology. Prerequisites: RS460, EE420, EE355, MA207, and MA343.

EE440 Electromagnetic Fields
(2,2) 3
A study of static and time-variant electric and magnetic fields, plane waves, guided waves, transmission line theory, radiation and antennas. Prerequisite: EE315.

GENERAL ENGINEERING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EG250 Cooperative Education
(2,0) 2
Supervised industrial experience with cooperative industries. The student's experience is related to academic studies and contributes significantly to professional development. Can be repeated for credit. Permission of instructor required.

EG265 "C" Programming
(3,0) 3
An introductory course in "C" programming with an emphasis on modular code development, computer interfacing, computer control architecture, control applications, graphics, simulation and team code development. Prerequisite: MA140 and MA109 or equivalent.

EG490 Engineering Desing Project I
(2,2) 3
This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, ethics, timelines, resource allocation, project management and performance evaluations. Skills in oral and written communications, problem conceptualization, creative problem solving and technical presentations are developed. Prerequisite: Senior status and expected graduation within the academic year.

EG495 Engineering Desing Project II
(1,6) 3
A continuation of EG490. This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, ethics,

timelines, resource allocation, project management and performance evaluations. Skills in oral and written communications, problem conceptualization, creative problem solving, and technical presentations are developed. Prerequisite: EG490.

ENGINEERING MECHANICS

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EM220 Statics
(3,0) 3
Theory and application of principles of statics with emphasis on problem solving, free body diagrams and vector analysis. Theory applied to equilibrium of particles and rigid bodies. Prerequisites: MA160, PH241.

EM320 Dynamics
(3,2) 4
Covers theory and applications of dynamics and problem-solving techniques. Topics include position, velocity, and acceleration analysis of particles and rigid bodies . Newton's second law, work and energy, impulse and momentum are covered. Laboratory includes experiments demonstrating laws of dynamics with special emphasis on creative problem-solving techniques and technical report writing. Prerequisites: EM220, Corequisite: ME161.

ENGLISH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EN091 Basic English
(3,0) 3
Thorough review of basic language skills for students who need preparation for freshman composition; weekly vocabulary tests and writing assignments. Credit/no credit final grade. Credit in this course does not apply toward graduation. All students whose English ACT scores do not place them in EN110 ***must*** receive credit for EN091 before taking EN110.

EN110 Freshman Composition
(3,0) 3
Emphasis on writing, usage and rhetoric which may include narration, process, description, comparison/contrast, definition and classification. Introduction to library resources and documentation. Prerequisite: Appropriate score on the English ACT examination or credit for EN091.

EN205 Technical Report Writing
(3,0) 3
A course in research methods, critical readings and written reports typical in technology, including memos, short reports, articles, resumes, and research processes and reporting of results in a long project. Emphasis on critical analysis and evaluation using APA style. Prerequisites: EN110 and sophomore standing. Students will not receive credit for this course if they have already received credit for EN210 or EN215.

EN210 Research Paper Process
(3,0) 3
A course in research methods and critical reading and writing. Includes introduction to library resources and research protocols. Emphasis on critical analysis and evaluation of primary and secondary source materials. Requires one short and one long research paper using APA style. Prerequisites: EN110 and sophomore standing.

EN215 Introduction to Literature and Research
(3,0) 3
A course in research methods and critical reading and writing, including the study of traditional and modern techniques of literary interpretation. Requires one research paper and critical essays using MLA style. Prerequisites: EN110 and sophomore standing.

EN220 Advanced Composition
(3,0) 3
Study and practice of the various forms of academic discourse. Library research paper required. Prerequisite: EN210 or EN215.

EN221 Creative Writing
(3,0) 3
Writing and discussion of art forms such as poetry, fiction and drama consistent with the student's individual interests. Prerequisite: EN210 or EN215, or permission of instructor.

EN231 American Literature I
(3,0) 3
A chronological study of American literature from the colonial writers through the Romantic period, ending with the Civil War. Prerequisite: EN110 or permission of instructor.

EN232 American Literature II
(3,0) 3
A chronological study of American literature from the Civil War through the present, covering the Age of Realism and the development of twentieth century literature. Prerequisite: EN110 or permission of instructor.

EN233 English Literature I
(3,0) 3
Reading and discussion of selected works from the Old English period to the beginning of the eighteenth century. Emphasis on major writers and works, evaluated in their historical context. Prerequisite: EN110 or permission of instructor.

EN234 English Literature II
(3,0) 3
Reading and discussion of selected works from the eighteenth century to the twentieth century. Emphasis on major writers and works, evaluated in their historical context. Prerequisite: EN110 or permission of instructor.

EN235 Survey of Native American Literature
(3,0) 3
An overview of Native American Literature, including myths, poetry, biographies, legends and stories from recognized Indian and non-Indian authors. The significance of Indian philosophy found in such literature will be emphasized. Prerequisite: EN210 or EN215 or permission of instructor. (Also listed as NA235)

EN320 Responding to Writing
(3,0) 3
A course in the theory and practice of effective writing with emphasis on evaluating and responding to writing across the disciplines. Recommended for writing ombudsmen, tutors, education students and other interested students. Course includes rhetorical and linguistic theory, current research on writing as process, theory and practice of responding to student writing, computer-assisted writing and revision, tutorial strategies and characteristics of writing in various disciplines. A strong theoretical framework with student paper examples from interdisciplinary fields.

EN321 Rhetoric and Composition Theory
(3,0) 3
A course in the theory of rhetoric and composition. The course takes an historical approach, tracing the growth, uses and transformations of rhetoric from the classical period to the

present day, highlighting the major underlying cultural forces which fostered change in rhetoric and fueled the development of composition theory. Emphasis is upon modern rhetoric and composition theory. Prerequisite: EN110.

EN322 Structure of the English Language
(3,0) 3
Description of the system of rules underlying the grammar of English. Issues addressed will include language development, correctness, usage, language change, syntax, morphology, form classes and structure classes. Prerequisite: EN210 or 215, or permission of instructor.

EN330 Development of the Novel in England and America I
(3,0) Alternate Years 3
Study of the leading novelists — English and American — of the eighteenth century and the first half of the nineteenth century, beginning with Defoe and ending with the works of the 1840s. Prerequisite: EN231-232, or EN233-234, or permission of instructor.

EN331 Development of the Novel in England and America II
(3,0) Alternate Years 3
Study of the background and art of the Anglo/American novel from approximately 1850 to the present. Intensive examination of characteristic forms, techniques and themes in major works. Prerequisite: EN231-232 or EN233-234, or permission of instructor.

EN332 The Short Story
(3,0) Alternate Years 3
A study of the background and development of the short story. Readings will include selections from Boccaccio, the French conte and the German novella in addition to English and American short stories. Prerequisite: EN210 or EN215.

EN333 Studies in the Drama: the Genre and Theatre in Context
(3,0) Alternate Years 3
A study of major plays in the context of theatre and literary history from the beginning to the present, including European, British, and American development. Prerequisite: EN210 or EN215.

EN334 Approach to Poetry
(3,0) Alternate Years 3
This is an introduction to the appreciation of poetry for junior-senior students (not exclusively English majors). Prerequisite: EN210 or EN215, or permission of instructor.

EN335 Children's Literature
(3,0) 3
A review of the rich and diverse field of literature for children from infancy to adolescence. Required for elementary teacher non-English majors and an elective for English majors. Prerequisites: EN210 or EN215 and SD101; or permission of instructor.

EN420 History of the English Language
(3,0) 3
Origin and development of the English language, including its relationship to other Indo-European languages, the history and structure of Old and Middle English, and the rise of modern English. Prerequisite: EN233-234 or permission of instructor.

EN421 History of Literary Criticism
(3,0) Alternate Years 3
An investigation of the history of critical theory to include classicism, neoclassicism, romanticism, the New Critics and contemporary critical trends. Prerequisite: EN233-234 or permission of instructor.

EN430 Chaucer
(3,0) Alternate Years 3
Intensive study of Chaucer's life and times and principal literary works: Canterbury Tales, Troilus and Criseyde, and The Romaunt of the Rose. Prerequisite: EN233 or permission of instructor.

EN431 Milton and the Metaphysical Poets
(3,0) Alternate Years 3
Intensive study of Milton's principal poetic works including Paradise Lost and Samson Agonistes; Donne's poetry and prose, and the metaphysical poets. Prerequisite: EN233 or permission of instructor.

EN432 Shakespeare
(3,0) Alternate Years 3
Intensive study of Shakespeare's comedies, tragedies and historical dramas. Prerequisite: EN233 or permission of instructor.

EN433 Seminar in Major American and English Writers
(3,0) 3
An intensive study of a single writer, or of two or three writers who might be studied together profitably along thematic, technical or other lines. Prerequisite: Junior-senior standing or permission of instructor. May be repeated twice for credit.

EN450 Directed Individual Study
(3,0) 3
Individual study of an author, period, genre or other related topic relevant to literary scholarship. Each student will do extensive research and prepare a paper.

EXERCISE SCIENCE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ES140 Health and Fitness
(3,0) 3
Introductory course: Theoretical basics of exercise, diet and nutrition and the wellness lifestyle. Topics include aerobic and musculoskeletal fitness, weight control, stress reduction, alcohol and tobacco abuse and presents principles for promoting a wellness lifestyle.

ES141 Introduction to Movement
(3,0) 3
This course reviews and applies the pertinent aspects of the prerequisite disciplines of anatomy and physiology. Specific attention will be placed on muscles, bones, joint structures, and functions as well as the fundamentals of leverage, balance, and "the feel of the movement". A detailed understanding of movement description is the most critical element in the student's mastery of the subject matter.

ES240 Techniques of Athletic Training
(2,0) 2
Athletic training supportive taping and protective bracing and padding procedures; techniques of fitting athletic and orthopedic equipment. Administration of athletic training room including facility design, budget and inventory.

ES242 Sports Medicine
(3,0) 3
This course will deal with the principles of athletic training sciences concerned with the evaluation, recognition, treatment and therapeutic exercises practiced for the athlete's safe

return to participation after an injury. Lectures and laboratory experiences will introduce the student to the updated theories in sport medicine with specific respect to injuries incurred in athletics.

ES248 Psychology of Sport and Performance and Coaching
(3,0) 3
A review of the psychological aspects related to success in sport and athletics. Emphasis will be placed on presenting techniques for improving individual and team athletic performance, as well as consideration of the psychological aspects of coaching. Specific topics will include personality and sport, attention/anxiety/arousal regulation, motivational techniques, the aggression-performance relationship, and the development of team cohesion and leadership.

ES262 Exercise Physiology I
(3,0) 3
Introduction to biological energy systems and support systems involved in physical activity and exercise. Emphasis on energy system recruitment dynamics, acute and chronic adaptations to training, and applications to programs employing physically based activities. Prerequisites: BL121, CH104.

ES268 Fitness Evaluation I — Field Tests
(1,2) 2
Provides theoretical background and measurement concepts specific to field tests employed in exercise science settings. Emphasis on skill, development and interpretation of results relative to normative data. Prerequisite: BL121 and ES140.

ES295 Practicum
1-2,0) 1-2
Practical experiences that explore various types of work setting in exercise science, working under specialist in the various chosen areas of interest. May be repeated for a total of four credits.

ES342 Exercise Physiology
(3,0) 3
Examines physiological energy systems; their recruitment, recovery; acute and chronic adaptations to training. Applications to specific sports, and health and fitness programming.

ES344 Kinesiology
(3,0) 3
Science of movement applied to muscle, joint structure and function and application of physical laws of gravity, leverage, motion and balance to human performance. Video tape motion analysis is used to apply these theories into practical experience.

ES345 Modalities and Therapeutic Rehabilitation in Sports Medicine
(3,0) 3
This course is designed to help guide the student in making decisions in the proper usage of modalities and therapeutic rehabilitation in an athletic setting. Students will be responsible for modality and rehabilitation progressions starting at the initial injury and progressing the athlete to return to action status. Prerequisite: ES242

ES348 Fitness Evaluation II — Laboratory Procedures
(2,2) 3
Provides theoretical background and technical aspects specific to laboratory procedures employed in clinical exercise science settings. Emphasis on developing skills with instrumentation for assessing cardiac activity, respiratory functioning, metabolic dynamics, anthropometry, and administering exercise protocols for diseased populations. Prerequisite: ES268 and ES262.

ES349 Orthopedic Assessment in Sports Medicine
(3,0) 3
Provides a clear, concise process of physical examination of the spine and extremities which would direct the student in a logical, efficient and thorough search of anatomy relevant to the field of sports medicine. This course will allow the student to continue to build a solid foundation in anatomy specific to orthopedic education. Prerequisite: BL122. (formerly ES230)

ES358 Research Methods in Exercise Science
(3,0) 3
Introduction to research methods and related statistical procedures for constructing and analyzing research activities. Presentation of statistical concepts including correlation, t-tests and analysis of variance and their use in exercise science. Introduction to measurement concepts of validity and reliability and the facets of writing a research report. Prerequisites: MA207 and ES342.

ES362 Exercise Physiology II
(3,0,) 3
Extends the study of the physiological aspects of exercise by examining advanced topic areas. Specific topics covered are the endocrine system and exercise, effects of exercise on the immune system, exercise and altitude, exercise and thermal stress, as well as exercise physiology concerns of various clinical populations. Prerequisite: BL122, CH105, and ES262

ES390 Recreation Leader Apprenticeship
(1,0) 1
Practical experience in learning to teach and lead various recreation experiences. Students serve with qualified instructors. Prerequisites: Basic skills and knowledge of activity or permission of instructor. May be repeated for a total of three credits.

ES428 Psychological Aspects of Exercise and Athletic Rehabilitation
(3,0) 3
The acute and chronic psychological consequences that occur as a result of involvement in physically based activities will be examined as they apply to recreational exercisers and sport enthusiasts, as well as individuals with health problems. Emphasis will be placed developing an understanding of the theoretical background for specific topic areas and investigating the support for these theories by examining original research reports on the effects of exercise and rehabilitation on adherence, chronic pain, anxiety, depression and sport injury. Prerequisites: ES342 and ES358.

ES434 Neurological Basics of Motor Learning
(3,0) 3
An overview of how the neurological system integrates external stimuli and internal processes in the effective control of movement. Introduced are control systems, attention processes, memory, and the role of feedback and practice on motor learning. Prerequisites: BL122, ES344, and ES362.

ES440 Exercise Physiology Seminar
(2,0) 2
Examines current issues in the field and students will prepare and present advanced physiological concepts related to special topics.

ES442 Electrocardiography in Exercise Science
(2,0) 2
Examines electrophysiological basis of ECG, cardiac anatomy and metabolism responses to rest and exercise. Prerequisite: ES342 with a C grade or better. Offered alternate years.

ES444 Exercise Prescription
(2,0) 2
Provides experience in writing and developing advanced training and conditioning programs for a variety of populations. Process oriented; considers needs analysis and cyclic training.

ES481 Professional Development Seminar
(1,0) 1
Opportunities for students to refine personal and professional goals and initiate preparation of resumes and interviewing skills. Career planning and placement will be emphasized as well as internship evaluation. Seminar format. Prerequisite: Senior status required.

ES492 Internship
6
Comprehensive practical application of students formal academic preparation. Prerequisites: Junior status and permission of instructor.

ES496 Selected Research Topics
(1-3,0) 1-3
Student carries out approved project(s) of his/her own initiative. Prerequisites: Junior standing and permission of instructor.

ELECTRICAL-ELECTRONICS ENGINEERING TECHNOLOGY AND TELECOMMUNICATIONS ENGINEERING TECHNOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ET110 Applied Electricity and PLC
(3,2) 4
Basic principles of DC and AC electricity. Topics include: RLC series and parallel circuits, electrical motors and programmable logic controllers (PLC). Laboratory exercises will reinforce the lecture material. Corequisite: MA092.

ET175 Applied Electronics
(3,2) 4
An introduction to the operation of basic electronic devices including diodes, transistors and operational amplifiers. Topics include: Power supplies, amplifiers, frequency response and filter circuits. Laboratory exercises will reinforce the lecture material and introduce computer circuit analysis. Prerequisite: ET110. Corequisite: MA140.

ET240 Communications I
(3,2) 4
An introduction to analog and digital communication with an emphasis on modulation techniques. Topics include: Amplitude, angle and pulse modulation, transmission and reception circuitry and special techniques. Prerequisite: ET175.

ET245 Communications II
(3,2) 4
Continuation of communications I with emphasis on transmission lines and wave propagation. Topics include: Transmission lines characteristics, Smith charts, wave propagation, antennas, waveguides and fiber optics. Prerequisite: ET240.

ET255 Computer Networks
(3,3) 4
Study and analysis of computer networks and switching techniques. Topics include: Network topologies, protocols, routing algorithms and flow controls. Laboratory exercises will support the lecture material and introduce the students to local area and wide area networks. Corequisite: ET245.

ENVIRONMENTAL SCIENCE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EV220 GPS/GIS Techniques
(2,3) 3
An introduction to global positioning systems and geographic information systems technology, theory and applications. Course content includes practical map and compass use, triangulation, GPS receiver theory and operation, GIS fundamentals and operation, and the collection and integration of field positional data into GIS applications. Special emphasis is given to hands-on operation and practical applications in science, natural resource management, business, public health and safety, and public administration. Prerequisites: MA086, CS101, or permission of instructor.

EV230 Introduction to Geographical Information Systems, GIS
(2,3) 3
An introduction to the concepts and applications of geographical information systems (GIS). Topics to include data acquisition, spatial databases, vectors, applications, issues and trends. Students will gain practical experience in the operation of GIS systems. Prerequisite: MA086, CS101, or permission of instructor. Students may find EV220 (GPS/GIS techniques) a beneficial introductory course.

EV290 Independent Study in Environmental Science
(1-4,0) 1-4
Special studies and/or research in environmental science for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources.

EV311 Environmental Law
(2,0) Alternate Years 2
Study of fundamental concepts of environmental law, basic legal research techniques, state and federal environmental statues, and cases pertaining to environmental law. Offered even-numbered fall semesters. Prerequisite: NS103 and junior standing.

EV313 Solid and Hazardous Waste
(3,0) Alternate Years 3
Identification and classification of solid and hazardous wastes, including discussion of storage and processing, collection and transportation, resource recovery and recycling and ultimate disposal. Topics on radiation, decay, health effects and sources of hazardous materials will also be covered. Offered odd-numbered fall semesters. Prerequisite: MA112 or equivalent.

EV341 Environmental Chemistry I: Water and Water Pollution Control
(3,3) 4
A study of the environmental chemistry of water, the measurement and remediation of water quality problems, the toxicology of water pollutants, and the environmental aspects of energy use. Prerequisites: CH225, CH231, and NS103 or permission of instructor. Also listed as CH341.

EV395 Junior Seminar
(0,2) 1
Literature searching, scientific writing, and oral presentation of scientific data. Students will be expected to listen to presentations of peers enrolled in EV499 and develop a topic for their senior thesis. Prerequisite: Junior standing.

EV425 Environmental Systems Analysis
(2,3) 3
The basic approach and statistical concerns associated with conducting an environmental analysis, as required for an environmental impact analysis will be integrated with interpretation of data from actual situations. Students will learn how analysis of soil, water, air, plant communities, animal communities and organic tissue analysis can be combined to evaluate the environmental health of a specific site. Prerequisite: CH341, CH342.

EV450 Laboratory Apprentice
(0,3) per credit 1-2
Students will assist in laboratories, learning instructional techniques, under direction of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the faculty member in charge of the specific laboratory, and the school dean. Credits may be used as EV electives. This is a credit/no credit course.

EV490 Independent Study in Environmental Science
(1-4,0) 1-4
Special studies and/or research in environmental science for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have junior or senior standing, have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources office.

EV499 Senior Thesis
(1,3) 2
Required of seniors majoring in environmental science. Students present seminars and provide an audience for fellow seniors. Each paper presented will be critically analyzed by the audience. Prerequisite: EV395.

FINANCE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

FN242 Personal Finance
(3,0) 3
An introduction to the principles of personal financial planning. Topics include the financial planning process, credit and borrowing fundamentals, analysis of savings, investments and taxes, individual insurance, retirement and estate planning. Prerequisite: Mathematics competency.

FN245 Principles of Finance
(3,0) 3
An introduction to the principles of business finance. Topics include math of finance, working capital management, financial planning and forecasting, debt and leasing, common and preferred stock, leverage and capital structure, capital budgeting, cost of capital. Students with credit in FN341 may not enroll in this course. Prerequisite: AC132, or AC230, or OA119, and mathematics competency.

FN248 Real Estate
(3,0) 3
A study of the basic principles of real estate practice. Coverage includes broker-agent relationships, real estate marketing, real estate law, financing, appraising, taxation and math. Prerequisite: Mathematics competency.

FN341 Managerial Finance
(4,0) 4
The nature and scope of financial management including math of finance, financing instruments, leverage and capital structure, financial planning and forecasting, risk and return analysis, capital budgeting. Prerequisites: AC133 and BA211.

FN443 Insurance
(4,0) 4
A study of the financial, legal and social aspects of the insurance industry with emphasis on risk and actuarial analysis, insurance institutions and operations, insurance contracts and policies including life, annuity, health, property, liability, group, business and governmental coverages. Financial planning worksheets are utilized to appropriate policy selection. Prerequisites: BA254 and mathematics competency.

FN446 Financial Analysis and Policy
(4,0) 4
An analytical study of long- and short-term financial policy and strategy through case problems. Selected readings in financial theory supplement the case studies. Prerequisite: FN341.

FN448 Investment Strategy
(4,0) 4
A study of investment media and securities markets, risk and return analysis, valuation theory, portfolio construction and investment mechanics. Prerequisite: FN341.

FIRE SCIENCE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

FS101 Introduction to Fire Science
(3,0) 3
Survey of the history and philosophy of fire protection. Examines present fire protection problems and future challenges, public fire protection agencies, firefighting equipment and extinguishing agents. Special emphasis is placed on emergency responders' safety and hazardous material recognition.

FS111 Hazardous Materials
(3,0) 3
Principles of combustion; examination of theoretical and practical aspects of combustion. Investigation of physical and chemical properties of substances which may harm responders, the general public and the environment.

FS204 Fire Protection Hydraulics and Pumps
(3,0) 3
The application of mathematics and physics laws to properties of water, force, pressure and flow velocities. Emphasis: Applying principles of hydraulics to fire protection problems, use of water supply sources and needs; examines fire department apparatus testing, inspection and maintenance; deals with apparatus specifications and requirements. Prerequisite; Successful completion of math competency graduation requirement.

FS205 Fire Protection Systems Equipment
(3,0) 3
Use and water supply needs of sprinkler and stand pipe systems and devices, fixed extinguishing and detection systems and devices, fire department testing, inspection and maintenance. Alarm centers, warning devices and safety considerations are covered along with fire flow calculations and risk assessment. Prerequisite: FS204 and successful completion of math competency graduation requirement.

FS211 Tactics and Strategy
(3,0) 3
Utilization of manpower, equipment and apparatus on the fireground. Emphasis: Pre-fire planning, fire ground decision making. Implementing tactics and disaster planning. Students will use fire simulation programs and interactive technology to apply and implement the principles covered in didactic instruction. Prerequisite: FS101.

FS301 Code Enforcement Inspection and Fire Prevention
(3,0) 3
An introduction to fire inspection procedures and inspection techniques as related to building construction, fire load, fire protection systems, plans and the storage of hazardous materials. A study of safety code enactment, formulation and its relation to fire prevention and public education efforts and responsibilities of the fire service. Prerequisite: FS101 or permission of instructor.

FS321 Industrial Fire Protection
(3,0) 3
Examination of fire and life-style hazards in business and industry. Emphasis on managing the codes process, fire prevention and training private fire brigades. Prerequisite: FS101 or permission of instructor.

FS401 Senior Seminar
(3,0) 3
Seminar and independent study course with individual student guidance by faculty on selected research topics in fire science. Prerequisite: Senior standing or permission of instructor.

FS403 Fire Science Internship
3-9
Fire science internship with an agency. Credit is based on 34 hours of field work per credit hour. Students must make application by the ninth week of the previous semester. Prerequisite: Senior standing or permission of instructor.

FS420 Fire Science Certification
(3,3) 4
An application of the principles of fire attack and strategy through the use of exercises and computer-generated simulations. Hazmat incident analysis and other major disaster case studies are used in this class. Prerequisite: FS101, FS111, FS204, FS205, and FS211 or permission of instructor.

FS490 Independent Study for Fire Science
(1-4) 4
This may take the form of either a research project or a program of directed reading on a specific subject. One to four credits over a period of one or two semesters may be granted according to the nature of the student's project. Prerequisite: Permission of instructor. May be repeated up to six credits.

FRENCH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

FR151 First Year French I
(4,1) 4
Introduction to basic French grammar and vocabulary; designed to acquaint the student with the minimum essentials of oral and written French. Students will learn to read magazines, newspapers, and elementary texts as well as to express themselves orally.

FR152 First Year French II
(4,1) 4
Further study of French grammar and vocabulary. Emphasis on student's ability to communicate both orally and in writing. The reading of various materials with the aim of translating English, enlarging the vocabulary and improving understanding of the language. Prerequisite: FR151 or equivalent.

FR251 Second Year French I
(4,1) 4
Review of basic grammar; introduction to advanced idiom; use of oral French in classroom; writing of compositions in French; reading of French texts. Prerequisite: FR152 or equivalent.

FR252 Second Year French II
(4,1) 4
Emphasis on use of oral French; reading, translation, and explication of text; conducted as much as possible in French. Prerequisite: FR251 or equivalent.

FR351 Advanced Conversation and Composition I
(3,0) 3
Extensive reading of French contemporary prose and writing of compositions on related current issues. Directed discussion of all oral and written assignments. Systematic review of grammar. Prerequisite: FR252 or equivalent.

FR352 Advanced Conversation and Composition II
(3,0) 3
Continuation of FR351 with special emphasis on the development of a more mature oral and written expression. Prerequisite: FR351 or equivalent.

FR353 Business French I
(3,0) 3
An initiation into the language skills for use in business situations in a French speaking environment. The course is organized around 12 different professional situations in the service industry. A conversational approach is used with systematic oral and written practice from authentic documents. May be taken concurrently with FR351. Prerequisite: FR252 or equivalent.

FR354 Business French II
(3,0) 3
Continuation of FR353. The course is organized around 12 different professional situations within the industrial sector. Further systematic practice through visits to French-speaking companies and individual reports. Aims to bring students to a level of proficiency in French business communication that would enable them to function in an internship situation. May be taken concurrently with FR352. Prerequisite: FR353 or equivalent.

FR355 Survey of French Literature I
(3,0) 3
A chronological study of the major works of French literature from its origins to the 18th century. Emphasis on the development and continuity of ideas and their evaluation within the political, social, and religious framework of the time, their influence on the formation of the language and literature. May be taken concurrently with FR351. Prerequisite: FR252 or equivalent.

FR356 Survey of French Literature II
(3,0) 3
Study and discussion of the major works of French literature of the 18th, 19th, and 20th centuries. May be taken concurrently with FR352. Prerequisite: FR355 or equivalent.

FR360 Seminar in French Studies
(1-4) 1-4
This course is structured as a study tour of France and provides students with an understanding of and immersion in French culture and civilization. Activities will be scheduled in Paris, Normandy, Mont St. Michel. Prerequisite: Permission of instructor. (May be used as humanities credit.)

GEOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

GE111 Physical Geology I
(4,1) 4
The study of the materials, processes and features of the rocks and surficial materials that form the earth's crust. Laboratory exercises involve minerals, rocks and topographic maps.

GE112 Physical Geology II
(4,1) 4
Surficial processes and landforms continued from GE111. Geologic time, earthquakes, earth's interior, ocean basins, mountains, plate tectonics and other aspects of our dynamic earth are also studied, supplemented by appropriate laboratory exercises and two field trips. Prerequisite: GE111 or NS102 or permission of instructor.

GE114 Field Excursions in Earth Science
(0,9) 3
A three-week field-based educational experience in which aspects of geology, including environmental geology and the interrelationships among geology and other natural sciences, will be addressed. Each week will include 45 hours of instruction. Travel destinations will vary to include regions with unique natural history. Trip expenses are the responsibility of the student. Prerequisite: Successful completion of one NS course or equivalent or permission of instructor.

GE215 Historical Geology
(3,1) 3
Summary review of the geologic record concerning origin and evolution of earth through geologic time. Emphasis upon stratigraphic principles, depositional environments, the tectonic framework of North America and significant events in the history of plants and animals. Laboratory exercises involve stratigraphic maps and introductory paleontology. Prerequisite: GE112 or permission of instructor.

GE216 Structural Geology and Geologic Graphics
(3,3) alternate years 4
Study of stress, strain and deformation of rocks and the structural features commonly occurring in them. Laboratory exercises deal with structures in three-dimensional space

and emphasize graphic methods of solving problems and of communicating geologic data. Prerequisite: GE215

GE221 Crystallography and Mineralogy
(3,4) 4
A laboratory course initially emphasizing the crystalline structure of minerals followed by mineral identification techniques. Major topics include symmetry, crystals, physical properties, composition and related topics. Prerequisite: GE112 or NS102 or permission of instructor. Pre or corequisite CH115.

GE222 Mineralogy and Petrography
(3,4) 4
A continuation of GE221 emphasizing mineral identification leading to hand lens identification of igneous, sedimentary, metamorphic and other rocks. Related topics include chemical tests and a student research project. Prerequisite: GE221 or permission of instructor.

GE290 Independent Study in Geology
(1-4,0) 1-4
Special studies and/or research in geology for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the school dean. This course may be repeated for a maximum of eight credits. Prerequisites: Sophomore standing or higher and permission of the instructor.

GE311 Principles of Hydrology
(3,0) alternate years 3
Origin, movement and uses of water with emphasis on water resources in relation to human needs and environmental considerations. Hydrologic principles, runoff analysis, flood routing, urban hydrology, floodplain hydraulics, groundwater hydrology. Prerequisite: PH221 or PH231, or permission of instructor. Prior computer programming experience recommended.

GE312 Groundwater Hydrology
(3,0) alternate years 3
Uses, preservation and protection of ground water. Physics and chemistry of ground water. Influences of geological structures and ground water exploration. Hydraulics and modeling techniques for ground water and water wells. Water well design, construction and testing. Prerequisites: PH221, 222 or PH231, PH232; GE311; and a course in computer programming.

GE321 Optical Mineralogy
(2,3) alternate years 3
Optical properties of minerals and their underlying principles studied by oil immersion and thin section methods. Laboratory work consists of measuring optical properties and learning to identify unknown non-opaque minerals. Prerequisite: GE221.

GE331 Introduction to Geophysics
(4,0) alternate years 4
This course will include an introduction to gravity, magnetic, electric, seismic and radiometric geophysical techniques and their application to geophysical, geological and environmental problems. Emphasis will be placed on understanding the principles, techniques and applications of each to solving specific geologic/environmental problems and to understanding the structure and history of the earth. Prerequisite: GE112, MA112 or MA141 or MA151, and PH222 or PH232 (mathematics may be taken concurrently) or permission of instructor.

GE351 Invertebrate Paleontology I
(3,1) alternate years 3
Common invertebrate fossils, their evolutionary trends, anatomical features and geological significance. Special emphasis upon use of fossils for geologic dating and correlation, fossil description and classification. Prerequisite: GE215 or permission of instructor.

GE352 Intertebrate Paleontology II
(3,1) alternate years 3
Common invertebrate fossils and microfossils, their evolutionary trends, anatomical features and geological significance. Special emphasis upon use of fossils for geologic dating and correlation and use of paleontologic data. Prerequisite: GE351.

GE410 Engineering Geology
(3,2) 4
This course examines rock types and stratigraphy, geological structures, surface processes, earth materials and methods of geological investigation in the context of behavior of soils and rocks as related to planning and construction. The course includes coverage of in-situ investigations including shallow geophysical methods and emphasizes environmental applications and concerns. Prerequisites: MA141 or MA151, CS100 or CS111, PH221 or PH231 or permission of instructor.

GE422 Igneous and Metamorphic Petrography
(2,3) alternate years 3
Description and classification of igneous and metamorphic rocks including laboratory study of rocks in thin section. Prerequisite: GE321.

GE423 Sedimentary Petrography
(2,2) alternate years 3
The study of the history of sedimentary rocks with emphasis placed upon depositional models. Major topics include lithology, facies and microfacies recognition and relationships, and diagenesis. Prerequisites: GE215 and GE321.

GE434 Geotectonics
(2,2) alternate years 3
A study of the general structure of the earth with emphasis on the dynamics of continental and oceanic crust. Includes a history of geologic thought leading to plate tectonics, with appropriate laboratory and student research projects. Prerequisites: GE222 and GE216.

GE436 Field Geology
(0,16) alternate summers 6
Six weeks of training and field experience in the observation, mapping, recording and interpretation of the great variety of geologic features in the Sault Ste. Marie region. Some extended field trips will be required. A supply and travel fee will be charged. Prerequisites: GE216 and GE222 and senior status or instructor approval.

GE461 Stratigraphy and Sedimentation
(4,1) alternate years 4
The study and interpretation of sedimentary processes and stratigraphic principles, emphasis on sedimentary relationships and depositional environments. Prerequisite: GE215.

GE471 Economic Geology I
(2,2) alternate years 3
A study of mineral resource forming processes, major rock-metal associations and a survey of classic ore deposits. Related topics include exploration, mining metallurgy, marketing and environmental aspects. Laboratory exercises appropriate to the topic and student research project. Prerequisites: GE112 and GE222 or equivalent.

GE472 Economic Geology II
(2,2) alternate years 3
A continuation of the resource forming processes and deposits begun in GE471. Coverage of minor metals, industrial minerals, energy resources, and the economic, environmental and political aspects of the demand for limited resources are included as time permits. Student research project and field trip. Prerequisite: GE471.

GE490 Research Topics in Geology
(1-4,0) 1-4
Special studies and/or research in geology for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the school dean. This course may be repeated for a maximum of eight credits. Prerequisites: Junior standing or higher and permission of the instructor.

GEOGRAPHY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

GG106 Physical Geography: Landforms
(3,2) 4
Introduction to the description and distribution of landforms with emphasis on lithospheric, hydrospheric and atmospheric relationships. Natural (physical) science credit given. Prerequisite: Completion of mathematics competency graduation requirement. Credit for both GG106 and NS107 not permitted.

GG108 Physical Geography: Meteorology and Climatology
(3,2) 4
Introduction to earth-sun relationships, maps and elementary principles of atmospheric science. Natural (physical) science credit given. Prerequisite: Completion of mathematics competency graduation requirement. Credit for both GG108 and NS105 not permitted.

GG201 World Regional Geography
(4,0) alternate years 4
A study of the physical environment, resources, past and present economic development, population distribution and historical development of Europe, Asia, the Islamic Middle East and North Africa, Sub-Saharan Africa, Latin America and North America.

GG302 Economic Geography
(4,0) alternate years 4
A study of the internal and external interrelationships of the various economic groupings of the world; i.e. North America, Europe and the emerging third world.

GG306 Cultural Geography
(3,0) 3
A study of the relationship of environment, culture and adaptive patterns; i.e., socio-economic development. A special emphasis will be placed upon the current problems associated with food supplies, shortages and third world development.

GG321 Geography of Europe and Great Britain
(4,0) alternate years 4
A study of the physical, cultural and economic interdependence of the western European community. Special emphasis will be placed upon the role of the EEC in world economic development. Prerequisite: Junior standing or permission of instructor.

GG322 Geography of South America, Central America and the Caribbean Region
(4,0) alternate years 4
The study of the geographical features and cultural history of the major regions in South America, Central America and the Caribbean with special concern for their 20th century development. Prerequisite: Junior standing or permission of instructor.

GG323 Geography of East and Southeast Asia
(4,0) alternate years 4
The study of the geography of Japan, China, Korea, Southeast Asia and India with special emphasis on the impact of the major religions, regional rivalries and 20th century development. Prerequisite: Junior standing or permission of instructor.

GG325 Regional Geography of North America
(4,0) alternate years 4
The study of the physical, cultural and economic development of various regions of Canada and the United States with special emphasis on the development of regional characteristics and cultural traditions. Prerequisite: Junior standing or permission of instructor.

GG360 Historical Geography of Eastern North America
(4,0) alternate years 4
A study of the impact of the physical features upon the historical development of eastern Canada and the eastern regions of the United States. Special attention will be given to the western migration patterns. Prerequisite: Junior standing or permission of instructor.

GG490 Independent Study in Geography
(1-4) 1-4
Special topics such as regional, historical, economic, urban, cultural or physical geography. Prerequisites: Junior standing and permission of instructor. May be repeated up to a total of 12 credits.

GG492 Individualized Studies in Geography
(2-4,0) 2-4
This is designed to provide an opportunity for specialized study of issues, problems and selected topics in geography. Prerequisite: Junior standing or permission of instructor.

GERMAN

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

GN141 First Year German I
(4,1) 4
Introduction to basic German grammar and vocabulary, acquainting the students with minimum essentials of oral and written German. Reading of German texts.

GN142 First Year German II
(4,1) 4
Further study of German grammar and vocabulary. Emphasis on oral expression. Reading of various materials in German with aim of enlarging the student's vocabulary and improving understanding of the language. Prerequisite: GN141 or equivalent.

GN241 Second Year German I
(4,1) 4
Review of basic German grammar; study of vocabulary, idiom, and word formation to improve reading and conversational abilities. Prerequisite: GN142 or equivalent.

GN242 Second Year German II
(4,1) 4
Reading and discussion of more advanced German literary materials; conducted as much as possible in German. Emphasis on spoken language. Prerequisite: GN241 or equivalent.

HEALTH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

HE101 Introduction to Medical Terminology
(2,0) 2
This course introduces the beginning student to basic medical terminology related to all areas of health care. The focus of this course is on understanding and proper usage of medical language.

HE104 Nutrition for Early Childhood
(3,0) 3
Introduction to the function and metabolism of nutrients with special emphasis on the relationship between nutrition and childhood growth and development between 0-8. Lectures, discussion and community-based assignments will relate the body systems to the child's nutritional status, review recent developments in nutrition as they relate to childhood development, and provide basic nutrition education principles for adaptation in community settings.

HE113 Introduction to Health Services
(3,0) 3
This course provides the beginning student with an overview of our health care delivery system focusing on consumers, providers, services and settings.

HE181 First Aid
(0.5,1.5) 1
Basic course in first aid. Theoretical and practical experience in university laboratory.

HE190 Prehospital Emergency Care and Crisis Intervention I
(2,3) 3
Techniques of emergency medical care needed by the emergency medical technician-ambulance attendant. Theoretical and practical experience in administering preliminary emergency care and transportation of sick and injured victims to medical care centers.

HE191 Prehospital Emergency Care and Crisis Intervention II
(2,3) 3
Simulated practice with some in-hospital observation. Emphasis on laboratory practice of skills needed for functions of an EMT-A. Prerequisite: HE190.

HE208 Nutrition
(2,0) 2
Basic principles of normal nutrition with emphasis on basic nutrients and food groups. Nutrition throughout life cycle including stressors impacting on nutritional requirements. Social, biological and physical sciences integrated throughout course. Prerequisite: BL105 or BL121.

HE209 Pharmacology
(3,0) 3
Study of basic concepts of pharmacology and their relationships to health care. Drug metabolic processes are described providing foundation for clinical judgments about drug actions, reactions and interactions. Prerequisites: BL122 or BL105, CH105, and HE232.

HE210 Introduction to Health Care Concepts
(3,0) 3
Introduction to the health care system with analysis of the issues and trends affecting the provision of health care services. Not open to nursing majors. Prerequisite: Sophomore standing.

HE232 Pathophysiology
(3,0) 3
Study of physiological alterations in the body which disrupt homeostasis. Integrates anatomy, physiology and biochemistry into framework for studying disease. Core content provides understanding of mechanism and principles of disruptions of health. Emphasis on clinical correlations and physiological basis for common disorders. Prerequisite: BL122.

HE235 Computer Application in Health Sciences
(1,2) 2
Introduces students to computer usage and its application to education, research and practice in health care professions. Topics include computer fundamentals, computer language, information systems, data-base systems, expert systems, health care applications, ethical considerations and relationships of computers to health care trends. Prerequisite: NU213.

HE328 Multicultural Approach to Health Care
(3,0) 3
This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations and assessment techniques. Prerequisite: SO101.

HE329 Women's Health Issues
(2,0) 2
This course explores the diverse health needs of women across the life span. Students are encouraged to take an active participation in identifying topics of interest. Social, cultural, political, economic, legal and ethical issues are analyzed for their influences on women's health and the health care women receive. Prerequisite: SO101.

HE330 Applied Nutrition
(2,0) 2
Application of nutrition principles in health care; obesity, anorexia nervosa and bulimia; emphasis on gathering information and relevant objective measurements (anthropometric, biochemical) for use in developing nutritional care plans. Prerequisite: HE208.

HE352 Health Issues of Aging Populations
(3,0) 3
This course is designed to assist students from a variety of disciplines to gain a greater understanding of health-related issues that are associated with advancing age. In addition to exploring physiological and psychological changes experienced by our elderly clients, students will learn how they can adapt their work strategies to work more effectively for the elderly clients that they serve. Prerequisite: PY155.

HE354 Legal and Financial Issues in Health Care Administration
(3,0) 3
This course is intended for students preparing for careers in management in health care fields or as health care practitioners. Students will be made aware of legal and financial issues and problems including fault liability; institutional liability; forms of organization; credentialing and appointments; staffing issues; consent and refusal of treatment; and health care financing. The student will be more aware of the need to seek professional counsel to minimize and prevent litigation. Prerequisite: Junior standing or permission of instructor. Also listed as BA354.

HE610 Managed Care
(3,0) 3
Overview of Managed Care as a system and technique for managing health care delivery to ensure that services provided are necessary, efficiently provided, and appropriately priced. Provides a core course for the Health Care Administration track of the MPA program with a focus on the principles and issues of managed care, including roles of providers and consumers, and factors influencing the provision of health care services.

HUMAN SERVICES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

HM204 Fundamentals of Drug Abuse
(3,0) 3
Examines the pharmacology of commonly abused psychoactive and high-use drugs. Emphasizes the physiological effects of drug use and abuse. Topics include stimulants, depressants, opiates, hallucinogens, inhalants, cannabis, over-the-counter drugs, alcohol, and drug testing. Prerequisites or corequisites: BL105 or equivalent.

HM250 Human Services Practicum
(1,9 - 27) 3-9
This course provides a field placement opportunity for students to practice skills and use knowledge gained from courses in the skill minors. Prerequisite: Permission of instructor. Also listed as SW250.

HM292 Alcohol Abuse Prevention & Treatment
(3,0) 3
This course examines current prevention, detection and treatment approaches for alcohol abuse and alcoholism. Prerequisite: HM204.

HM480 Grantwriting
(3,0) 3
This course gives advanced students experience in the research, writing and planning skills involved in preparing grant proposals for human service problems. Prerequisite: Permission of instructor.

HISTORY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

HS101 History of World Civilization I
(4,0) 4
A study of world civilization from earliest time through the baroque.

HS102 History of World Civilization II
(4,0) 4
A study of world civilization from the baroque to the present.

HS131 United States History I
(4,0) 4
A study of United States history from the colonial settlement to the end of the American Civil War in 1865.

HS132 United States History II
(4,0) 4
A study of United States history from the end of the Civil War to the present.

HS201 Classical World and Medieval Europe
(4,0) every third year 4
A survey of Mediterranean civilization from the Bronze Age to the eve of the Renaissance.

HS202 Renaissance, Reformation and Baroque Europe
(4,0) every third year 4
A study of the political, institutional, religious, social, economic and cultural developments from 1400 to 1700.

HS230 Survey of American Indian History
(4,0) 4
A study of American Indian history from earliest times to the present, with emphasis placed on the historical development of Indian tribes located in the Great Lakes region. Also listed as NA230.

HS231 American Military History
(4,0) 4
A general survey of American military history with a specific emphasis on the Midwest and Great Lakes regions. To utilize the unique geographic location of LSSU, field trips to the Straits of Mackinac and St. Joseph's Island are a part of the course.

HS235 History of Applied Science and Technology
(4,0) every third year 4
An introductory study of the origins and development of the applied sciences and technology from 1790 to the present. This survey will focus on the scientists, engineers and inventors responsible for the rapid rise of modern technology, industry, and business with particular emphasis on the developments in chemistry, metallurgy, electromagnetism, thermodynamics and cybernetics. The impact of these developments on the marketplace and society in general will be a major concern.

HS301 History of England — 1000 TO 1714
(4,0) every third year 4
These 700 years witness the formation and maturing of most of the important political and social institutions that have come to be the Anglo-Saxon civilization and tradition. This period is critical to understanding present-day American culture and civilization.

HS302 England in the Modern World
(4,0) every third year 4
A history of England from 1715 to the present, emphasizing the struggle for parliamentary government, the Anglo-French conflict for commercial and colonial empire, the Industrial Revolution, the evolution of democracy and the recession of the British Empire.

HS310 Russia: From Underdeveloped State to Superpower
(4,0) every third year 4
A study of Russian history from Peter the Great to the present.

HS315 Europe From Napoleon to World War I
(4,0) every third year 4
A study in the political and economic history of Europe in the period 1789-1914.

HS316 Europe in the 20th Century
(4,0) every third year 4
A study of Europe in the age of Nazism, Communism, World War I and II, and the Common Market.

HS331 American Intellectual and Cultural History I
(4,0) alternate years 4
A study of American cultural and intellectual institutions as they developed from their Elizabethan and European origins to the mid-19th century. The emphasis will be placed upon the emergence of the unique and variant adaptations that arose in the first 250 years of English settlement in America.

HS332 American Intellectual and Cultural History II
(4,0) alternate years 4
A study of American culture from the mid-19th century until the present. Often considered our finest century, the 19th century witnesses many of America's most unique, fascinating and important contributions. The physical and philosophical aspects of these years will be surveyed. Particular attention will be given to areas where America comes to exercise important influences overseas.

HS335 American Political Parties
(4,0) every third year 4
A study of the rise and development of the American party system and the large number of major and minor parties that have participated in this system in the years prior to 1945. These parties will be treated in an historical fashion rather than structurally. May be taken for political science credit.

HS346 Canadian History
(4,0) every third year 4
A survey of Canadian history including the moving frontier, relations with the United States, British-French rivalry, the establishment of democratic government and the changing relationship to Great Britain.

HS361 Latin America
(4,0) every third year 4
A study and analysis of Latin American history from the end of the Colonial Period to the present. This course will examine the basic political, social and religious institutions of Latin America and their evolution and role in the change of problems of U.S.-Latin American relations will be an important focus of this study. Prerequisite: GG322 geogra phy of South America or permission of instructor.

HS371 Far East Civilization 1850-Present
(4,0) every third year 4
A study of the history of China, Japan, India and adjoining areas of Asia from 1850 to present. Prerequisite: Permission of instructor.

HS420 Field Methods of Archaeology
(4,4) 8
Field course in archaeological survey and excavation methods and techniques, at various sites in area including 1822 Fort Brady. Course held on-site M-R for eight weeks. Only four credit hours may count toward 300- and 400-level courses for history majors. No prerequisites.

HS440 The Declaration of Independence and the Constitution
(4,0) every third year 4
The events between 1763 and 1791 which produce these documents are the United States in the historical sense. Using original documents and contemporary comments, this critical era will be studied in depth to determine whence we came. Prerequisite: U.S. history sequence desired or permission of instructor.

HS441 Diplomatic History of the United States I
(4,0) alternate years 4
American diplomacy from 1775 through the 19th century to U.S. entry into World War I in 1917. May be used as political science credit.

HS442 Diplomatic History of the United States II
(4,0) alternate years **4**
American diplomacy from the entry of the U.S. into World War I in 1917 up through the present day. May be used as political science credit.

HS490 Individual Historical Research
(0,1-4) **1-4**
Independent study under supervision of history faculty. May be repeated up to a total of six credits. Does not apply toward 300- or 400-level requirements in history. Prerequisite: Permission of the supervising faculty.

HS496 Historical Methods
(2,0) **2**
Survey emphasizing research aids and techniques and historical analysis. Readings, discussions and written exercises introduce students to problems, methods and techniques of historical research. Discussion of and practice in main techniques of historical method, including bibliography and documentation. Prerequisites: Senior standing and pursuit of a major or a minor in history, or permission of instructor.

HS497 Senior Seminar in History
(0-6) **2**
Students will complete an historical research project under the supervision of a faculty member; at end of term participants make oral presentation at seminar for other students and invited guests, and submit the final paper. Prerequisite: HS496.

HUMANITIES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

HU251 Humanities I
(4,0) **4**
The humanities in the life of mankind from prehistory to the Medieval epoch. Emphasizes significant values evolved in the Hebrew, Greek, Roman and early Christian cultures. Includes consideration of the origins of the arts, language, religion, mythology, philosophy, and ancient Chinese and Indian systems of religious thought. Prerequisite: EN110

HU252 Humanities II
(4,0) **4**
Continuation of HU251, the humanities in the age of science, from the early Renaissance to the present. Prerequisite: EN110

HU255 World Mythology
(4,0) **4**
A survey of world mythology from "Gilgamesh" to "Finnegan's Wake". Prerequisite: EN110.

HU256 Introduction to Film: Images of Our Culture
(2,2) **4**
An exploration of film as an image of our culture in both its technical sense and in its role as a contemporary art form which conveys and delimits our aesthetic and social values. Focus on the visual elements of film, historical development of the medium, and its narrative modes through screening of significant films. Applies toward humanities general education requirement. Prerequisite: EN110.

HU261 World Literature I
(4,0) 4
The Ancient World to the Renaissance. Readings in translation of significant, primarily Western texts. Selection can include the Bible and works by such authors as Homer, Virgil, Thucydides, Tacitus, Boccaccio, Montaigne, Rabelais, and others. Applies toward humanities general education requirement. Prerequisite: EN110.

HU262 World Literature II
(4,0) 4
The Renaissance to modern times. Readings in translation of significant, primarily Western, texts. Selections can include works by Galileo, Voltaire, Racine, Goethe, Ibsen, Dostoevksy, Brecht, Kafka, Sartre and others. Applies toward humanities general education requirement. Prerequisite: EN110.

HU490 Directed Studies in Humanities
(1,0) 1
To provide students who need one credit of general humanities with an opportunity to read or explore material related to the content of that term. Papers and tutorial session required. Prerequisites: Seven hours of humanities credit; evidence that students are capable of carrying out independent study; approval of department chair or dean.

INTER-DISCIPLINARY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ID300 Man and His Environment
(3,0) 3
Designed to assist the participant in understanding how the individual can become involved with solving environmental problems. Prerequisite: Junior status or permission of course coordinator.

ID399 Internship in (Department)
(2-4,0) 2-4
This course is designed to provide students with an opportunity to earn credit while obtaining meaningful discipline-related work experience outside the classroom setting. Students are expected to spend a minimum of 45 hours in an approved work setting for each credit hour earned. The course may be repeated once for a maximum of four credits. Prerequisite: 2.5 GPA in major, junior standing and permission of department head at least one semester in advance of registering for the course.

JOURNALISM

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

JR210 Writing for the Mass Media
(3,0) 3
Acquaints students with the basic similarities and differences in newswriting among the mass media, particularly newspapers, radio and television. Students will practice writing in the various formats. Prerequisites: EN110 and ability to type 40 words per minute.

JR211 Print Newswriting
(3,0) 3
Improves students' print newswriting skills. Writing of basic print news stories, such as speech, news conference and meetings, obituaries, accidents, fires, natural disasters, schools, taxation, police and the courts. Prerequisite: JR210 or permission of instructor.

JR310 Electronic Editing and Production
(2,3) 3
Students gain an understanding of basic copyediting responsibilities — use of symbols, headline writing, and newspaper design and layout — and the ability to discharge those responsibilities under deadline pressure. Prerequisite: JR211.

JR311 Supervising School Publications
(3,0) 3
Teaches the elements of supervising high school publications including the high school newspaper or yearbook; methods of production; problems of production; the elements of libel; and good taste. Prerequisite: JR211 or permission of instructor.

JR410 Broadcast Newswriting
(2,3) 3
Designed to improve students' broadcast newswriting skills from the fundamental level of those developed in JR210. Upon completion of this course, the student will be familiar with the process by which broadcast news is reported, written and performed on the air. Prerequisite: JR210 or permission of instructor.

R411 Broadcast Editing and Production
3) 3
esigned to build upon the broadcast reporting, writing and performing skills developed in 410. Students will become familiar with production of newscasts, public affairs documentaries, the role of the producer in modern radio, the function and operation of the console, tape recording and playback units, microphones and sound, splicing and dubbing, achieving effects and news-oriented talk shows. Prerequisite: JR410 or permission of instructor.

JR413 Directed Individual Studies
(2,0) 2
Shine Sundstrom journalism internship at Sault Ste. Marie Evening News: Experience in newsroom and on assignment; writing, rewriting; use of word processor. Prerequisites: Junior status; JR210 and JR211. File application with dean of Arts, Letters and Social Sciences School by fifth week of previous semester.

JAPANESE STUDIES

The Japan Center for Michigan Universities provides staff and resources for the courses in this minor. These courses are offered ***only at the*** Japan Center in Hikone, Japan.

JS105 Intensive Introductory Japanese Language I
(5,5) 5
This course is designed as an intensive introductory study of Japanese. The class meets five hours per week and the laboratory/recitation/practice sessions meet five hours each week. The "New Jordan method" of Japanese language studies for English speakers is used in both class and lab sessions.

JS106 Intensive Introductory Japanese Language II
(5,5) 5
This course is designed as a continuation of JS105. It will stress uses of written Japanese and a research project in which communication with Japanese in the community will be vital. The "New Jordan Method" will be the basis of the instruction.

JS201 Culture and Society of Japan I
(3,0) 3
This is a very broad overview course which examines the social and political development of Japan from prehistoric times to 1300 A.D. It combines written text materials with field work. An emphasis will be placed on the social organization of Japan and its relationships with traditional religious values, economic structures, socialization of children and political institutions.

JS202 Culture and Society in Japan II
(3,0) 3
This is an overview of Japanese history which examines the political and social developments of Japan from 1300 A.D. to the present. Special emphasis will be placed on the Shogunate Tradition, the Meiji Restoration and 20th century political, economic and social developments.

JS301 Japanese Art and Culture I
(4,0) 4
This course is a broad overview of the development of the painting, sculpturing, architecture and literary traditions of Japan from earliest times to 1300 A.D. Special emphasis will be placed on the historic collections available in Nara and Kyoto. Biweekly field trips to examine and study local sites will be a regular portion of the instruction.

JS302 Japanese Art and Culture II (1300 TO Present)
(4,0) 4
This course is designed as a study of the development of Japanese art, architecture and literature from the Ashikaga Shogunate to the present. Special attention will be given to the influences from Western civilization and its impact on Japanese culture.

LEGAL ASSISTANT STUDIES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

LA102 Legal Research and Case Analysis
(3,0) 3
Introduction to the law library and its use. Students will develop research techniques and skills in using encyclopedias, treatises, digests, case reporters, looseleaf services, annotated reports, legal periodicals, legislation, legislative history, administrative materials, shepardization and citation of legal authorities. Students will also develop skills in analyzing, evaluating and synthesizing court opinions and statutory law.

LA125 Civil Litigation and Procedure
(4,0) 4
Concentration on Federal and Michigan rules of procedure prior to, during and after trial. Detailed study of drafting pleadings, discovery procedures and case preparation for trial and appeal. Prerequisite: LA102 and LA150.

LA140 Pesonal Injury Litigation and Investigative Techniques
(3,0) 3
The study of personal litigation shall include principles of negligence, intentional torts, strict liability, products liability and professional malpractice. Emphasis will be placed on investigative techniques utilized in personal injury cases; students will draft complaints and other documents used in such litigation. The course also covers interview techniques, utilization of experts and documentary evidence.

LA150 The Legal Assistant Profession and Ethical Considerations
(3,0) 3
Overview of the legal assistant profession including job qualifications and employment opportunities. General legal principles and terminology shall be discussed. The Code of Professional Responsibility and its application to legal assistants shall be studied in detail including such areas as: confidentiality, conflict of interest, legal advertising, competency considerations and legal malpractice.

LA202 Legal Writing and Analysis
(3,0) 3
Introduction to legal writing styles and skills. Through review and preparation of legal documents, students will become acquainted with basic principles, style, organization and structure of certain legal documents which shall include letter writing, preparation of memorandum of law and an appellate brief. Research skills and analysis of court opinions will be further refined. Prerequisites: LA102 and LA125.

LA250 Law Office Management, Systems and Technology
(3,0) 3
The management and organization of a law office, including such areas as staffing, timekeeping, equipment, legal systems, file maintenance, public relations, and the utilization of computer technology in law office organization, litigation and case preparation shall be discussed. Prerequisites: LA202 and LA125 or permission of instructor.

LA299 Legal Assistant Internship and Professional Development Seminar
(1,3-7) 4-8
A supervised work experience as a legal assistant with a law firm, government agency, court or business enterprise such as a bank, corporation or insurance company. Personal and professional goals shall be refined, including resume preparation, interviewing skills, job search plan and overall career planning. Prerequisites: LA202, LA125, and permission of instructor.

LA300 Seminar in Legal Assistant Studies
(variable) 1-4
A seminar dealing with selected topics in legal assistant studies. The content of this course may vary each time the course is offered. May be repeated with permission of advisor. Prerequisites: LA202, LA125, and/or permission of legal assistant advisor.

LA305 Tribal Law and Government
(3,0) 3
A study of tribal law which will explore such areas as the structure of tribal government; tribal sovereignty; treaties; civil and criminal court jurisdiction in Indian country; tribal resources; tribal economic development; taxation and regulation; rights of individual Indians; and various federal laws and court cases concerning and affecting tribes and their members. Prerequisite: HS230, NA230, or permission of instructor. Also listed as NA305.

LA320 Real Estate Law
(3,0) 3
Various aspects of real estate law and procedures will be studied, including conveyances, mortgages, land contracts, titles, environmental concerns, foreclosure proceedings and landlord-tenant relationships. Emphasis will be placed on preparation of legal documents and pleadings regarding real estate law. Prerequisites: LA102 and LA125 or permission of instructor.

LA321 Family Law
(2,0) 2
Areas of family law including marriage contracts, divorce, separation, child custody, juvenile law and adoption will be explored. Prerequisites: LA102 and LA125 or permission of instructor.

LA322 Probate Law and Procedure
(3,0) 3
The Probate Code will be discussed in detail along with the major topics of wills, estates trusts, guardianships, conservatorships and other probate court procedures. Preparation of probate documents and pleadings will be emphasized. Prerequisites: LA202, LA125, and LA320.

LA401 Evidence and Trial Practice
(3,0) 3
An in-depth study of trial preparation and practice including gathering and organization of materials and information; discovery; depositions; voir dire; preparing trial witnesses and exhibits; preparing trial motions and briefs; jury instructions and forms; organizing the trial; and post-trial procedures and documents. The course also covers evidentiary rules as they relate to trial practice and preparation. Prerequisites: LA125, LA140, LA150 and LA202.

LA405 No-Fault Automobile Law
(3,0) 3
The study of the Michigan no-fault automobile law, including Michigan statutory and case law developments; first and third party cases; recoverable benefits and damages; review of insurance policies; and the preparation and evaluation of such cases for settlement and trial. Prerequisites: LA125, LA140, LA150 and LA202.

LA406 Worker's Disability Compensation Law
(2,0) 2
A study of the Worker's Disability Compensation Act, including both Michigan statutory and case law developments. Also, the administrative procedures and worker's compensation case preparation will be addressed. Prerequisites: LA125, LA140 and LA202.

LA450 Advanced Legal Writing and Interviewing Seminar
(3,0) 3
An advanced study of legal research and writing including the preparation of complex pleadings, legal documents, mediation summaries, settlement brochures, and trial and appellate briefs. Development of interviewing and investigative skills and techniques with regard to client and witnesses will also be discussed. Prerequisites: LA125, LA150, LA202, and senior standing or permission of instructor.

LA490 Independent Study in Legal Assistant Studies
(1-4) 1-4
This may take the form of either a research project or a program of directed reading on a specific topic. One to four credits over a period of one or two semesters may be granted according to the nature of the student's project. Prerequisite: Permission of instructor. May be repeated up to a total of eight credits.

MATHEMATICS

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

Based on a series of exams each student is placed in the beginning mathematics course judged most appropriate for successful completion and mathematical progress. For courses numbered 100 and above a student's curriculum major also affects course selection. Courses numbered below 100 do not count toward graduation.

The following six courses are offered in a four-week, four meetings per week, format for one credit each.

MA081 Pre-Algebra I
(1,0) 1
The first third of MA089. Prerequisite: none.

MA082 Pre-Algebra II
(1,0) 1
The second third of MA089. Prerequisite: MA081 or placement by examination.

MA083 Pre-Algebra III
(1,0) 1
The final third of MA089. Prerequisite: MA082 or placement by examination.

MA084 Introductory Algebra I
(1,0) 1
The first third of MA090. Prerequisite: MA083 or MA089 or placement by examination.

MA085 Introductory Algebra II
(1,0) 1
The second third of MA090. Prerequisite: MA084 or placement by examination.

MA086 Introductory Algebra III
(1,0) 1
The final third of MA090. Completion of this course with credit satisfies the mathematics competency graduation requirement. Prerequisite: MA085 or placement by examination.

MA089 Pre-Algebra
(3,0) 3
Arithmetic operations, fractions, decimals, proportions, percentages, descriptive statistics and elementary geometry. Grading in this course is credit/no credit. Credit in this course does not apply toward graduation. Prerequisite: None (Completion and content of the set of courses MA081, MA082, and MA083 are equivalent to those of MA089.)

MA090 Introductory Algebra
(3,0) 3
Elementary algebra including equations, inequalities, problem solving, polynomials and operations, graphing, systems of equations and radical expressions. Grading in this course is credit/no credit. Credit in this course does not apply toward graduation. Prerequisite: Completion of MA083 or MA089 or placement by examination. (Completion and content of the set of courses MA084, MA085, and MA086 are equivalent to those of MA090.)

MA092 Intermediate Algebra
(4,0) 4
Algebra for students who have not had second-level high school algebra or who need a refresher course in that level of algebra. Real numbers and operations, solving and graphing first degree equations and inequalities, solving systems of equations and quadratic equations, algebra of polynomials, radical and rational expressions and equations, exponential and logarithmic functions. Prerequisites: One year of high school algebra and a satisfactory score on the mathematics placement exam or MA086 with credit. Credit in this course does not apply toward graduation.

MA103 Number Systems and Problem Solving
(3,2) 4
General notions of problem solving. Sets, functions, numeration systems and number theory. Properties and operations of whole numbers, integers, fractions and decimals. Prerequisite: Satisfactory mathematics placement examination score or MA092 with a grade of "C" (2.00) or better.

MA104 Geometry and Measurement
(3,2) 4
Basic notions of geometry. Constructions, congruence and similarity. Motion geometry, symmetry and Tessellations. Concepts of measurement. Coordinate geometry. Prerequisite: MA103 with a grade of "C" (2.00) or better.

MA109 Trigonometry and Vectors
(2,0) 2
Trigonometric functions of a right triangle and of real numbers, graphs of trigonometric functions, identities, inverse trigonometric functions, vectors and complex numbers. Prerequisite: Satisfactory mathematics placement score or MA092 with a grade of C or better.

MA111 College Algebra
(3,0) 3
Algebra for business, life and social science students. Inequalities, functions, graphs of linear, polynomial and rational functions, exponential and logarithmic functions, mathematics of finance, systems of linear equations and matrices, linear programming, and introduction to probability. Prerequisite: Two years of high school algebra and satisfactory achievement on the mathematics placement exam *or* MA092 with a grade of C or better. High school plane geometry also recommended. This course will not count toward a major or minor in mathematics.

MA112 Calculus for Business and Life Sciences
(4,0) 4
Limits, differentiation, applications of the derivative, integration, application of the definite integral, techniques of integration. Calculus of exponential and logarithmic functions, elementary differential equations, functions of several variables. Prerequisite: MA111 with a grade of C or better. This course will not count toward a major or minor in mathematics.

MA140 Algebra for Technologists
(4,0) 4
Algebra for students of science and technology. Algebraic operations, functions and graphs, factoring and fractions, quadratic equations, exponents and radicals, complex numbers, exponential and logarithmic functions, systems of linear equations, determinants and matrices, analytic geometry. Prerequisites: Two years of high school algebra and satisfactory achievement on the mathematics placement examination or MA092 with a grade of C or better. This course will not count toward a major or minor in mathematics.

MA141 Technical Calculus I
(4,0) 4
The derivative and procedures of differentiation, integration and applications of integration, derivatives of trigonometric and inverse trigonometric functions, exponential functions, and logarithmic functions. Prerequisites: MA109 and MA140 each with a grade of C or better. High school trigonometry may be substituted for MA109 with instructor approval.

MA142 Technical Calculus II
(4,0) 4
Integration of trigonometric, exponential and logarithmic functions methods of integration, partial derivatives and double integrals, polar coordinates, curve fitting, series expansion of functions, using MacLaurin, Taylor, and Fourier Series. First- and second-order differential equations and Laplace transform methods. Prerequisite: MA141 with a grade of C or better.

MA143 Calculus for Engineering I
(3,2) 4
Limits and continuity, differentiation, derivative applications, integration. Analytical, graphical and numerical approach with emphasis on engineering applications. Prerequisites: Two years of high school algebra and satisfactory placement on the mathematics

placement exam, ACT exam, or MA140 with a grade of C or better. One-half year of high school trigonometry or MA109 with a grade of C or better. MA150 with a grade of C or better will also suffice.

MA144 Calculus for Enginerring II
(3,2) 4
Applications and techniques of integration, calculus of transcendental functions, infinite series. Emphasis on engineering applications. Prerequisite: MA143 with a grade of C or better.

MA150 Precalculus Mathematics
(4,0) 4
Basic theory of functions including polynomial, exponential, logarithmic and trigonometric functions. Inequalities, topics from analytic geometry and plane trigonometry. Provides the essential background for calculus and subsequent upper-level mathematics. Prerequisites: Two years of high school algebra and one year of plane geometry and satisfactory achievement on the mathematics placement exam, or MA092 with a grade of C or better. Courses in trigonometry and analytic geometry are recommended. This course will not count toward a major or minor in mathematics.

MA151 Calculus I
(4,0) 4
Limits, continuity, differentiation, applications of the derivative, integration, applications of the definite integral. Prerequisite: High school mathematics which includes two years of algebra, one year of plane geometry, and one-half year of trigonometry and satisfactory achievement on the mathematics placement exam, *or* MA150 with a grade of C or better.

MA152 Calculus II
(4,0) 4
Logarithm and exponential functions, inverse trigonometric functions, techniques of integration, improper integrals, L'hopital's rule, infinite series, conic sections, polar coordinates, parametric equations. Prerequisite: MA151 with a grade of C or better.

MA207 Principles of Statistical Methods
(3,0) 3
Descriptive statistics, probability distributions (including normal, binomial and chi-square), techniques of statistical inference including tests of hypotheses and selected nonparametric tests. (This course is a survey of elementary statistical concepts.) Prerequisite: Completion of mathematics competency graduation requirement. This course will not count toward a major in mathematics.

MA215 Fundamental Concepts of Mathematics
(3,0) 3
Elements of set theory, set algebra, cardinality, logic, mathematical induction, methods of proof, functions, relations, equivalence relations. Prerequisite: MA151 or MA142 or MA112 (latter course with permission of instructor only).

MA216 Discrete Mathematics and Problem Solving
(3,0) 3
Selected topics from discrete mathematics including fundamental counting principles, recurrence relations and an introduction to graph theory. A strong emphasis is placed on fundamental problem-solving techniques. Prerequisite: MA215 or permission of instructor.

MA240 Mathematics for Automated Systems
(3,0) 3
Applied linear algebra and vector algebra, Laplace transform methods for solution of first-and-second order linear differential equations. Spherical and cylindrical coordinate systems, graphing of kinematic quantities. Pre- or co-requisite: MA142.

MA243 Calculus and Linear Algebra for Engineers
(3,2) 4
Conic sections, parametric equations, polar coordinates, vectors, vector-valued functions, functions of several variables, partial differentiation and multiple integration. Matrix algebra and determinants. Introduction to differential equations. Emphasis throughout the course on engineering applications. Prerequisite: MA144 with a grade of C or better.

MA251 Calculus III
(4,0) 4
Three-dimensional space, vectors, vector-valved functions, partial differentiation, multiple integration, topics in vector calculus. Prerequisite: MA152 with a grade of C or better.

MA261 Introduction to Numerical Methods
(3,0) alternate years 3
Floating point representation of numbers and floating point arithmetic. Survey of numerical methods for solving a wide variety of common mathematical problems, including solution of a single non-linear equation, solution of a system of linear equations, matrix inversion, numerical integration, function approximation, interpolation. Emphasis will be on the actual computer implementation of common algorithms for solving these problems. Prerequisites: CS111 and either MA142 or MA152.

MA290 Independent Study in Mathematics
(1-4,0) 1-4
Special studies and/or research in mathematics for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the department head. This course may be repeated for a maximum of eight credits. Prerequisites: Sophomore standing or higher and permission of the instructor.

MA305 Computational Linear Algebra
(3,0) alternate years 3
Introduction to matrix algebra and vector spaces. An examination of the topics of linear algebra, with an emphasis on computational aspects. Applications of matrices and linear algebra in the natural and social sciences. Prerequisites: CS111, and either MA112, MA14 or MA151.

MA308 Probability and Mathematical Statistics
(4,0) 4
An introductory course in probability and mathematical statistics. Probability, probability distributions, mathematical expectation, moment generating functions and the Central Limit Theorem. Prerequisite: MA142 or MA152.

MA309 Applied Statistics
(3,0) 3
A continuation of MA308 including estimation of parameters, testing hypotheses, nonparametic methods, analysis of variance, multiple regression and an introduction to statistical software packages. Prerequisite: MA308

MA310 Differential Equations
(3,0) 3
Differential equations of first order, linear differential equations of second and higher orders. Introduction to power series methods, applications. Prerequisite: MA152

MA321 History of Mathematics
(3,0) alternate years 3
Selected topics in the development of mathematics from the time of the ancient Babylonians and Egyptians to the 20th century. Prerequisites: MA152 and MA215

MA325 College Geometry
(3,0) alternate years 3
Selected topics in geometry, including some or all of the following: Modern elementary geometry, transformations, Euclidean constructions, dissection theory, projective geometry, introduction to non-Euclidean geometry, and problems in foundations of geometry. Prerequisites: MA152 and MA215.

MA341 Abstract Algebra I
(3,0) alternate years 3
An introduction to congruences, groups, subgroups, quotient groups, fundamental homomorphism theorems, Sylow theorems. Prerequisite: MA215.

MA342 Abstract Algebra II
(3,0) on demand 3
A continuation of MA341 including rings, integral domains, ideals, quotient rings, the natural homomorphism, fields and polynomial rings. Prerequisite: MA341.

MA343 Differential Equations for Engineers
(3,2) 4
First- and second-order differential equations; Laplace transformations; systems of differential equations; Fourier series methods. Emphasis on engineering applications. Prerequisite: MA243 with a grade of C or better.

MA351 Graph Theory
(3,0) alternate years 3
Selected topics in graph theory, including connectivity, matchings, edge and vertex colorings, networks and tournaments. Prerequisite: MA216.

[A401 Mathematical Modeling
,0) alternate years 3
elected applications of mathematics in such areas as biology, economics, social science and ngineering are discussed. The construction of a mathematical model used to study a real situation will be stressed, as well as interpretation of mathematical results in that context. Prerequisites: Jr/Sr standing, a course in computer programming, and mathematical maturity at the level of MA305, MA308, or MA310.

MA411 Advanced Calculus
(3,0) alternate years 3
An extension of the calculus in one, two, and three dimensions leading to the formulation and solution (in simple cases) of the partial differential equations of mathematical physics. Differential and integral calculus of vectors, divergence, curl, line, surface and volume integrals, Green's divergence and Stokes' theorems, heat and wave equations, Fourier series, orthogonal sets, boundary value problems, separation of variables. Prerequisite: MA251.

MA413 Introduction to Complex Analysis
(3,0) on demand 3
The calculus of functions of a complex variable, algebra and geometry of complex numbers, elementary functions, limits, derivatives, Cauchy-Rieman equations, integrals, Cauchy integral theorem, series, singularities, residue theorem. Prerequisite: MA251.

MA421 Real Analysis I
(3,0) alternate years 3
An examination of some of the foundations of the calculus, including basic topology of the real line, limits, continuity, metric spaces, function spaces, some uniformity concepts. Prerequisites: MA215 and MA251.

MA422 Real Analysis II
(3,0) on demand 3
Continuation of MA421 with emphasis on measure and integration. Prerequisite: MA421.

MA490 Research Topics in Mathematics
(1-4,0) 1-4
Special studies and/or research in mathematics for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the department head. This course may be repeated for a maximum of eight credits. Prerequisites: Junior standing or higher and permission of the instructor.

MASTER OF BUSINESS ADMINISTRATION

MB503 Business Law
(3,0) 3
Basic principles of contract law and its application to sale of goods, with emphasis on legal aspects of product marketing. Law of agency/employment; business organizations, including partnerships and corporations.

MB508 Statistical Analysis
(3,0) 3
Overview of statistical analysis methods; application to business analysis and decision making. Emphasis: Development of problem-solving and computational skills. Prerequisite: Mathematics competency.

MB521 Financial Accounting
(3,0) 3
Basic accounting principles; their application in business with emphasis on management uses of accounting data in decision-making. Includes discussions of accounting control systems and ethical issues.

MB525 Business Finance
(3,0) 3
Mathematics of finance; risk-return analysis and portfolio theory; financial markets and securities; financial analysis; capital structure, leverage, and financing alternatives; financial planning and forecasting; capital budgeting; valuation and cost of capital. Prerequisites: MB508 and MB521 or equivalent.

MB561 Organizational Theory
3
Fundamental theories and concepts of management and their application to organization theory and management functions, and processes.

MB581 Marketing Concepts and Applications
(3,0) 3
Planning, organizing, directing and controlling of marketing sub-system in business organizations. Focus on environment that influences marketing, and decisions facing marketing managers such as selection, target marketing, designing marketing strategy, and organizing and controlling marketing activities.

MB601 Quantitative Methods
(3,0) 3
Orientation to management science; introduces students to variety of deterministic and probabilistic models useful in resolution of business related problems in functional application areas. Prerequisite: MB508.

MB604 Managerial Economics
(3,0) 3
Application of economic theory and analysis to managerial decision-making including demand theory and estimation, production theory and cost analysis, profit planning and optimization techniques, consumer behavior, pricing strategy, economic forecasting. Prerequisites: EC201, EC202, and MB508.

MB608 Research Techniques
(3,0) 3
Survey of research methods used in business; emphasis on development of a research design. Survey techniques, experimental design, non-experimental designs and case study method. Prerequisite: MB508.

MB611 Operations Management
(3,0) 3
In-depth exposure to the management of operational systems. Focus: Development and implementation of realistic solutions to complex problems related to operations management. Prerequisites: An introductory data processing course or equivalent experience, MB508 and MB601.

MB621 Managerial Accounting and Control
(3,0) 3
A study of accounting concepts, budgeting, management planning and control, and elements of cost accounting systems. Emphasis is placed on analysis and interpretation of accounting reports for management purposes: measuring performance, controlling costs and evaluating proposals. Prerequisite: MB521 or waiver of MB521.

MB625 Financial Management
(3,0) 3
Advanced study of modern financial theory and issues with emphasis on the utilization of current analytical techniques in the decision-making process. Case discussions and readings from contemporary financial literature supplement the text assignments. Prerequisite: MB525

MB631 Revising Business Prose
(1,0) 1
Students will contribute documents from the work place. Students will learn to edit such documents for clarity, conciseness and appeal. Prerequisite: BA231.

MB653 Business and Society
(3,0) 3
A course designed to explore the role of business and society; U.S. government regulation/deregulation, labor values and ethics, social responsibility, the changing international environment and the future of the corporation.

MB654 Canadian Business Environment
(3,0) 3
For the foreseeable future Canada is likely to be subject to a series of intense economic, fiscal and political pressures. These stresses will shape the environment within which business will operate in Canada. This course examines these pressures and their implications, particularly for the business community.

MB659 Administrative Policy
(3,0) 3
Concepts and relationships between a firm and its economic, social and political environment. Focus: Position of general manager in formulating strategic policy and implications for attainment of corporate objectives. Prerequisite: Completion of common professional component.

MB660 Organizational Behavior
(3,0) 3
Study and analysis of characteristics common to all organizations (behavior, structure and process); application to the effective management of organizational behavior. Prerequisite: MB561.

MB678 Collective Bargaining and Dispute Settlement
(3,0) 3
Introduction to theories and practices of negotiating and administering collective bargaining agreements; negotiation process, legal constraints, subject matter of contracts, grievance procedures, and arbitration. Prerequisite: MB561.

MB681 Marketing Management
(3,0) 3
Decision-making activities of marketing and consumer selection; promotional sales force management; pricing; distribution channels. Emphasis is placed on the growing fields of international marketing and behavioral science. Prerequisite: MB581.

MB687 Advertising Management
(3,0) 3
An analysis of ways promotion techniques are applied to marketing-related activities. The focus is on the entire promotion mix and to include areas associated with solving problems regarding the mix and various media. The course will examine how areas like consumer behavior, the competitive climate and the legal environment may have an impact on decision-making. Prerequisite: MB581.

MB691 Independent Study
(1-3,0) 1-3
Independent study and seminar; individual student guidance by faculty member for selected research topics in business. Prerequisite: Admission to graduate program and approval of program coordinator.

MECHANICAL ENGINEERING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ME110 Manufacturing Processes I
(2,3) 3
Capabilities and limitations of machines and processes for production planning and designing machinery, mechanical parts and systems. Prerequisites: none.

ME115 Manufacturing Processes II
(2,3) 3
Continuation of ME110. Contains advanced topics on capabilities and limitations of machines and processes for production planning and designing machinery, mechanical parts and systems. Prerequisites: ME110.

ME140 Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD AND GD&T)
(4,1) 4
Basic autocad (2-D) and (3-D) drawing, editing and dimensioning techniques are covered as well as GD&T terms, definitions and rules. Students create their own GD&T symbols library and use it to make engineering drawings using autocad commands and GD&T principles.

ME225 Strength of Materials
(3,0) 3
A study of stress analysis and measurements. Topics include axial, shear, torsion, bending stresses, axial strains, shear strains, Poisson's ratio, Hooke's law and the transformation of stresses and strains. Deflection of beams and buckling of columns are also treated. Prerequisite: EM220, MA161.

ME275 Engineering Materials
(2,3) 3
Physical structure of engineering materials, properties, testing and applications. In the laboratory, the student will prepare and analyze the microstructure of various specimens. Prerequisite: CH108, Corequisite: ME225

ME335 Fluid Mechanics
(3,0) 3
Theory and applications of principles of fluid mechanics with emphasis on problem solving. Fluid statics, kinematics, continuity, energy and momentum problems are covered. Dimensional analysis and pipe flow problems are treated. Prerequisites: EM220, MA144.

ME336 Thermodynamics I
(3,0) 3
Theory and applications of thermodynamics. First and second laws of thermodynamics, energy conversion, properties of working substance, processes and cycles. Corequisite: ME335.

ME350 Machine Design I
(3,3) 4
Design and selection of machine components and power transmission units. Topics covered include curved beam theory, Catigliano's theory, static failure, impact and fatigue. Stress analysis in the laboratory will include strain gages, uniaxial testing machines, deflections and buckling of beams and report writing. Prerequisites: EM225, EM275, and EM320.

ME425 Vibration
(3,3) 4
An introductory course to vibrations analysis, including free, forced and damped vibrations of one degree of freedom systems. Selected topics on machine balancing, monitoring and noise control will be covered. Prerequisites: EM320, MA343.

ME430 Thermodynamics II and Heat Transfer
(3,3) 4
Continuation of ME336. In addition, fundamentals of steady state, and transient heat conduction, convection and radiation are covered. Design and analysis of heat exchangers are also treated. Prerequisite : ME336.

ME440 Solid Modeling and Animation
(3,0) 3
Theory and application of three-dimension computer-aided drafting. Emphasis will be placed on assembly drawings and presentation.

ME442 Finite Element Analysis
(3,3) 4
This course will cover the fundamentals of finite element analysis. Topics include: modeling elements, boundary conditions, loading, convergence and an introduction to modal analysis. Commercial software will be used in the laboratory along with 3-D mesh generation. Prerequisite: ME350.

ME455 Machine Design II
(3,3) 4
A continuation of ME350. Topics on design of fasteners, welds, gears, bearings, brakes, clutches, and shafts are covered. Lab material includes experiments on photoelasticity, fatigue, and computer simulations. Prerequisite: ME350.

MARKETING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

MK281 Marketing Principles and Strategy
(3,0) 3
A study of the marketing principles, variables, institutions, target markets, marketing mix and the development of marketing strategy. Prerequisite: EN110

MK283 Principles of Selling
(3,0) 3
The study of personal selling and its requirements. Topics included are buyer behavior, sales presentations from prospecting to closing the sale, and overcoming objections. Sales interviews by students are an integral part of the course.

MK285 Retail Management
(3,0) 3
A study of the field of retailing. A survey of retail institutions; store location and organization; buying and merchandising techniques; retail advertising, sales promotion and image; human resource policies; and store protection.

MK381 Consumer Behavior
(3,0) 3
A study of behavioral concepts related to consumer behavior. Attention is directed toward understanding consumer needs, perceptions, attitudes, intentions and behavior within a strategic and managerial framework. Topics include the differences of complex decision making and habit and between high and low involvement decision making. Emphasis is on predicting and understanding purchase behavior for best firm/consumer needs' match. Prerequisite: MK281.

MK384 Physical Distribution
(3,0) 3
An analysis of the physical supply/physical distribution system. Studies areas of movement control, including distribution centers and warehousing, traffic and transportation, inventory management, information flow and cost-service alternatives. Prerequisite: MK281.

MK387 Advertising Theory and Practice
(3,0) 3
A study of the principles and practices in various advertising media such as newspaper, radio, television, outdoor and direct mail; consideration of creative methods, consumer behavior, measurement of effectiveness and coordination with other aspects of the promotional program. Prerequisite: MK281.

MK480 Marketing Research
(3,0) 3
Application of research methods to the field of marketing. Methods of gathering and presenting data, market analysis, consumer surveys and sales forecasting. Students will participate in a research project. Prerequisites: BA211 and MK281

MK481 Marketing Management
(3,0) 3
A study of the essential tasks of marketing managers: (1) identifying marketing opportunities, (2) developing marketing plans, and (3) implementing these plans by introducing marketing strategies. Prerequisite: MK281.

MK483 Sales Force Management
(3,0) 3
Principles and policies of sales organization; career opportunities; recruiting, selecting and training sales people; motivation, supervision and evaluation of sales performance; compensation plans, quotes and expense accounts. Prerequisites: MK281, MK283.

MK486 International Marketing
(3,0) 3
Principles and methods of international marketing; strategies for foreign market entry and operations. Analysis of the environment of international marketing management with emphasis on problems connected with social, cultural, institutional and economic variables found in foreign markets. Prerequisite: MK281.

MANAGEMENT

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

MN360 Principles of Management
(3,0) 3
Principles and techniques applicable to the functions of management: Planning, organizing, directing (staffing and leading) and controlling; development of management thought and decision-making; current issues and future concerns in management. Foundation course for study and understanding of management theory and practice. Prerequisite: Junior standing or permission of instructor.

MN365 Human Resource Management
(3,0) 3
An examination of current practices and recommended techniques by which management procures, develops, utilizes and maintains an effective work force. The major areas studied are: recruitment and selection, equal employment opportunity and affirmative action programs, training and development, career planning and performance appraisal, compensation and benefits, safety and health issues, employee and labor relations, including grievance handling, contract negotiation and remaining union-free as an organization. Prerequisite: Junior standing or permission of instructor.

MN451 Labor Law
(4,0) 4
An analysis of labor laws pertaining to union-management relations; emphasis on the private sector as well as on laws relating to health care institutions; legal aspects of relationships between unions and their members; federal wage and hour laws, including administration of the statutes and their relationship; applicable remedies for violations of federal labor laws. Prerequisite: Junior standing or permission of instructor.

MN461 Management Simulation
(1,4) 3
Realistic simulations of business operations with an opportunity to practice the functions of management by means of computerized models and cases. Prerequisite or corequisite: FN341 or permission of instructor.

MN464 Organizational Behavior
(3,0) 3
An analysis of problems and cases relating to management and organizational behavior typically requiring decisions by an administrator. Topics include leadership, motivation, communication, negotiation, problem solving, decision making, conflict resolution, group dynamics, stress management, job design and organization structure. Prerequisite: MN360.

MN469 Collective Bargaining
(3,0) 3
An analysis of the process of collective bargaining, the major subjects of negotiation, including arbitration of grievances; process of dispute settlements; and influence of larger environment. The discussion includes theories of bargaining, strategies and weapons available to both parties. Also examines collective employee-employer relationships in the public sector and tactics of public employee groups and agencies. Prerequisite: Junior standing or permission of instructor.

MN471 Production and Operations Management: Models, Methods and Applications
(5,0) 5
Study and analysis of operations of modern industrial and service organizations. Topics covered include scheduling and assignment problems, forecasting, inventory models, project management, mathematical programming, decision theory, game theory, Markov models, replacement problems, queuing problems and simulation. Prerequisite: BA211 and MN360, or permission of instructor.

MANUFACTURING ENGINEERING TECHNOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

MT215 Design for Manufacturing
(3,3) 4
A survey of design principles related to tooling design for cutting tools, jigs, fixtures and dies. An introduction to precision measurements and design concepts for assembly. Prerequisite: ME110 or permission of instructor.

MT225 Statics and Strength of Materials
(3,1) 3
Fundamental concepts of statics and strength of materials. Solutions of problems introducing forces, moments, normal stress, shear stress, bending stress and torsional stress. Theory and application of strain gages. Prerequisites: MA109 and MA140.

MT265 Quality Engineering
(2,0) 2
An introduction to the philosophy, principles and methods for the use of statistical process controlling the manufacturing environment. Numerous control charts and frequency distribution will be covered in detail. Management methods will be discussed. Prerequisite: Math competency.

MT315 NC/CNC Manufacturing Process
(2,3) 3
Writing NC/CNC programs in machine codes, and the setup and trial runs to produce parts from these programs. Computer software interfacing between programming languages and various industrial machines will be stressed. Computer-aided manufacturing (CAM) topics and applications of CAM software will also be covered. Prerequisite: ME115.

MUSIC

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

MU110 through MU161 count as humanities for general education requirements.

MU110 Orchestra
(0,3) 1
Perform regular series of concerts as a member of the Sault Symphony Orchestra. Prerequisite: Permission of instructor.

MU111 Orchestra
(0,3) 1
Perform regular series of concerts as a member of the Sault Symphony Orchestra. Prerequisite: Permission of instructor.

MU112 Band
(0,3) 1
Open to all University students. The concert band performs representative band and wind ensemble literature and provides a challenging musical experience.

MU113 Band
(0,3) 1
Open to all University students. The concert band performs representative band and wind ensemble literature and provides a challenging musical experience.

MU140 Chorus
(0,3) 1
Regular rehearsals and participation in various campus activities. Prerequisite: Permission of instructor.

MU141 Chorus
(0,3) 1
Regular rehearsals and participation in various campus activities. Prerequisite: Permission of instructor.

MU160 Jazz Ensemble
(0,3) 1
Regular rehearsals and performances during school year. Prerequisite: Permission of instructor.

MU161 Jazz Ensemble
(0,3) 3
Regular rehearsals and performances during the school year. Prerequisite: Permission of the instructor.

MU170 Class Piano I
(0,2) 1
Beginning piano techniques. Music reading ability helpful but not required.

MU171 Class Piano II
(0,2) 1
To improve proficiency and techniques gained in MU170. Prerequisite: MU170 or permission of instructor.

MU180 Class Guitar I
(0,2) 1
Introduction to guitar playing including knowledge of musical rudiments, left and right hand techniques and ensemble performance.

MU181 Class Guitar II
(0,2) 1
Course emphasizes increasing technical achievement, musicianship and the development of individual musicality.

MU220 History and Appreciation of Music I
(4,0) 4
A survey of music from the Middle Ages to the early 19th century with emphasis on the music of Bach, Handel, Haydn, Mozart and Beethoven. Counts as humanities credit for general education requirements.

MU221 History and Appreciation of Music II
(4,0) 4
A survey of music of the 19th and 20th centuries. Counts as humanities credit for general education requirements.

MU250 Chamber Music I
(0,2) 1
For advanced students interested in solo and ensemble performance in a supervised program. Prerequisite: Permission of instructor.

MU251 Chamber Music II
(0,2) 1
For advanced students interested in solo and ensemble performance in a supervised program. Prerequisite: Permission of instructor.

MU260 History & Appreciation of Jazz
(4,0) 4
The course explores the historical and stylistic development of jazz and explains how to listen to this type of music. Counts as humanities credit for general education requirements.

NATIVE AMERICAN STUDIES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NA141 Ojibwe I, Aniishnaabemowin
(4,1) 4
Introduction to the Ojibwe language's vocabulary, phonics and grammar. This course is designed to acquaint the student with the minimum essentials of oral and written Ojibwe. This course serves as the foundation for further study in the Ojibwe language and culture. Students will begin to learn to read Ojibwe text. Students will learn to express themselves orally and gain the necessary knowledge and skill that will prepare the student for Ojibwe conversation.

NA142 Ojibwe II, Aniishnaabemowin
(4,1) 4
Further study on Ojibwe language vocabulary, phonics, grammar and elementary conversation. This course is designed to further acquaint students with the minimum essentials of oral and written Ojibwe. This course rounds out the foundation for further study in Ojibwe language and culture. Students will continue to learn to read Ojibwe text, express them-

selves orally; and gain the necessary knowledge, skill and practice which will prepare the student for Ojibwe conversation and elementary writing. Prerequisite: NA141 or permission of instructor.

NA201 Second-Year Ojibwe Conversation I, Aniishnaabemowin
(4,1) 4
Further study in Ojibwe language with particular focus on Ojibwe conversation. This course will equip students with the essentials of oral and written Ojibwe. This course rounds out the foundation for further study in the Ojibwe language and culture. Students will continue to learn to read Ojibwe text, express themselves orally and gain the necessary knowledge, skill and practice which will prepare the student for Ojibwe conversation and elementary writing. Prerequisite: NA141, NA142, or permission of instructor.

NA225 Native Cultures of North America
(3,0) 3
A study of the Native American Indian and Inuit cultures of North America from earliest times to the present, with emphasis on contrasting patterns of cultures. Also listed as SO225.

NA230 Survey of American Indian History
(4,0) 4
A study of American Indian history from earliest times to the present, with emphasis placed on the historical development of Indian tribes located in the Great Lakes region. Also listed as HS230.

NA235 Survey of Native American Literature
(3,0) 3
An overview of Native American literature including myths, poetry, biographies, legends and stories from recognized Indian and non-Indian authors. The significance of Indian philosophy found in such literature will be emphasized. Prerequisite: EN210 or EN215 or permission of instructor. Also listed as EN235.

NA305 Tribal Law and Government
(3,0) 3
A study of tribal law which will explore such areas as the structure of tribal government; tribal sovereignty; treaties; civil and criminal court jurisdiction in Indian country; tribal resources; tribal economic development; taxation and regulation; rights of individual Indians; and various federal laws and court cases concerning and affecting tribes and their members. Prerequisite: NA230, HS230, or permission of instructor. Also listed as LA305.

NA310 Seminar in Native American Studies
(3,0) 3
A seminar dealing with selected topics in Native American studies. The content of this course may vary each time the course is offered. Prerequisites: NA225, SO226, NA230, NA235, and NA305 or permission of instructor.

NA320 Contemporary Native American Issues
(3,0) 3
A study of current Native American issues, problems and concerns. Prerequisites: NA225, SO226, NA230, NA235, and NA305 or permission of instructor.

NATURAL SCIENCES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NS101 Conceptual Physics
(3,1) 3
A survey of basic physical science principles emphasizing their applications in daily life. Prerequisite: Completion of the mathematics competency graduation requirement.

NS102 Introduction to Geology
(3,2) 4
A survey course to acquaint students with the major concepts and phenomena inherent in a study of geology. It will also provide sufficient background for a better understanding of human relationships to the physical environment. Prerequisite: None.

NS103 Environmental Science
(3,0) 3
An introduction to environmental concepts and a brief survey of environmental issues facing society. Emphasis is placed on solutions and the responsibility of the individual towards these solutions.

NS104 Environmental Science Laboratory
(0,2) 1
Laboratory component of environmental science. Corequisite: NS103.

NS105 Physical Geography: Earth, Sun and Weather
(3,1) alternate years 3
Study of the physical properties of the earth's surface as they relate to weather and climate. Credit for both GG108 and NS105 not permitted. Prerequisite: None.

NS107 Physical Geography: Landforms and Soils
(2,1) alternate years 3
Study of the physical properties of the earth's surface as they relate to landforms and soil. Credit for both GG106 and NS107 not permitted. Prerequisite: None.

NS110 Chemistry in Society
(3,2) 4
An applied topical course examining the issues, problems and challenges facing modern society with an emphasis on the underlying chemical principles and theories. Attention will be given to decision-making activities, to developing critical thinking skills, and to addressing social issues that relate to chemistry. Prerequisite: Completion of the mathematics competency graduation requirement.

NS119 Descriptive Astronomy
(3,1) 3
Introductory course with a balanced, comprehensive account of contemporary astronomy with emphasis placed on the broad principles of astronomy rather than on a chronological or historical framework. Prerequisite: Completion of the mathematics competency graduation requirement.

NURSING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NU110 Introduction to Professional Nursing I
(1,0) 1
Focus on origin of nursing and its evolvement into current status as major profession. Role of nursing in the health care delivery system: Philosophy of nursing; human needs theory; introduction to nursing process.

NU211 Introduction to Professional Nursing II
(3,0) 3
Theoretical foundation for nursing practice, nursing concepts and theories needed to promote, maintain and restore health throughout the life cycle, including nursing theory, stress adaptation, ethics, teaching-learning and legal aspects. Prerequisite: PY155, NU110, acceptance into nursing major. Corequisite: NU110 (transfer students only).

NU212 Health Appraisal
(2,3) 3
An introduction to nursing assessment component of the nursing process as a method of determining a well individual's health potential and status across the lifespan. Emphasis is on obtaining a health history, performing a nursing assessment and formulating a nursing diagnosis. Prerequisites: PY155, HE208, BL122. Corequisite: HE232 and NU211.

NU213 Fundamentals of Nursing
(3,6) 5
Theoretical and clinical foundation upon which nursing is applied to individual client experiencing common health stressors. Emphasis: Forming nursing diagnoses derived from human needs theory and implementation of both appropriate nursing interventions and related psychomotor nursing skills. Responsibilities as a health team member and as a self-directed learner are also considered. Prerequisites: NU110, NU211, NU212, HE208, HE232, and PY155. Corequisites: HE209, BL223

NU325 Parent/Newborn Nursing
(3,6) 5
Theoretical and clinical foundation for care of the child-bearing family using family-centered approach. Emphasis: Teaching and health promotion. Stress adaptation and self-care theories used to help clients cope with stressors encountered during child-bearing cycle. Prerequisites: BL223, NU213, HE232, HE209, PY155.

NU326 Parent/Child Nursing
(4,6) 6
Theoretical and clinical foundation for application of nursing process in caring for children and their families. Emphasis: Health promotion, maintenance and restoration with application of principles and concepts related to growth and development, family theory and stress adaptation. Prerequisites: BL223, NU213, HE232, HE209, PY155.

NU327 Adult Nursing I
(4,12) 8
Combined theory and clinical laboratory with concepts of stress adaptation related to common health alterations in each of the basic human need areas. Nursing clinical experience is primarily in secondary care settings for adult clients. Prerequisites: BL223, NU213, HE209, HE232, PY155.

NU360 Professional Nursing Concepts
(4,0) 4
This course examines conceptual frameworks, nursing models and theories pertinent to the practice of professional nursing. Factors which affect health behavior throughout the lifespan are examined, and teaching/learning principles as well as change theory are used to effect change. Prerequisite: Acceptance into the nursing completion program.

NU363 Comprehensive Health Appraisal
(2,3) 3
Application of theories from nursing and related sciences to health appraisal of the individual through the lifespan. Emphasis on principles of comprehensive history taking and physical assessment skills. Pre- or co-requisite: NU360.

NU431 Adult Nursing II
(4,12) 8
This is a theory and clinical laboratory course focusing on application of the nursing process in care of the adult client with multiple health stressors. Basic human needs theory and concepts of stress/adaptation, health promotion, health maintenance, health restoration and teaching-learning are applied. The student collaborates with the health team and applies theory and principles of leadership and management in providing care in secondary and tertiary care settings. Prerequisites: HE352, NU325, NU326, NU327. Corequisite: NU435.

NU432 Community Health Nursing
(3,6) 5
Theoretical and clinical foundation in community health nursing. The nursing process is applied to communities, groups, families and individuals. Content includes the application of public health nursing principles, levels of prevention and epidemiology. Expands the roles of the nurse as teacher, collaborator, advocate and direct care provider. Examines health care delivery trends and issues. Prerequisites: HE352 and all required junior-level nursing courses.

NU433 Mental Health Nursing
(3,6) 5
Theoretical and clinical foundation in mental health nursing. Emphasis is on the use of the therapeutic relationship and communication skills to help clients cope with stressors of life experiences. Nursing, human needs theory, family theory, stress adaptation theory and developmental theory are used to help the client achieve optimum level of mental health. Prerequisites: HE352 and all required junior-level nursing courses.

NU434 Nursing Research
(3,0) 3
Focus is on the ethics, methods, evaluation of research studies and consideration of application of nursing research findings in delivery of health care. Students discuss and evaluate nursing research studies and develop and present sections of a research proposal. Prerequisites: PY210 or MA207 and all required junior nursing courses, or NU360 for BSN completion students.

NU435 Management in Nursing
(3,0) 3
Analysis of the leadership and management roles in professional nursing; focus is leadership/management theories basic to the planning, organizing, directing and controlling of nursing services in health care settings. Includes concepts of continued quality improvement, risk management, performance appraisal, employee relations. Prerequisite: NU360 (for BSN Completion). Corequisite: NU431 (for four-year program).

NU436 Contemporary Issues in Nursing
(2,0) 2
Analysis of issues involving the professional nurse. Explores role socialization from student to professional nurse. Selected social, ethical, economic and legal issues will be examined. Prerequisites: All required junior nursing courses or NU360 for BSN completion students.

NU451 Critical Care Nursing
(3,0) 3
Assists student in developing nursing knowledge essential to care of critically ill client/family. Health promotion maintenance and restoration interventions are stressed in care of clients with severe alterations in basic human needs. Prerequisite: NU431 or graduate nurse.

NU490 Independent Study
(1-4,0) 1-4
Individual investigation of topics tailored to student interest and need. Prerequisites: Junior or Senior standing and permission of the instructor.

OFFICE ADMINISTRATION

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

OA111 Keyboarding/Document Formatting I
(3,0) 3
Introduction to typewriter and computer keyboard; development of basic keyboarding skill-alphabetic, numeric, and 10-key pad numeric; to assist student to reach optimal skill and more efficiently use computer terminals, information processor and typewriter keyboards. This course is intended for students with no previous typing experience. Students will be pretested by the instructor the first day of class for placement in accordance with beginning skill level. Also, formatting of business letters, memos, tables, and reports (APA, MLA, and Turabian formats), using word processing software.

OA112 Keyboard Skillbuilding
(4,0) 7 1/2 weeks 2
Improvement of keyboarding speed and accuracy (both alphabetic and numeric), using developmental programs and keyboarding drills. Student may take this course to accumulate two to four credits. Once an office administration student reaches 60 wpm skill on alpha/numeric text (error rate - 1 per minute) this course becomes an elective. Prerequisite: OA111 or 30 wpm keyboarding skill.

OA113 Document Formatting II
(3,0) 3
Formatting of legal documents, medical histories and reports, governmental correspondence, accounting statements and technical text/data, using WordPerfect 6.1 for Windows. Advanced WordPerfect features such as advanced merge, graphics, and desktop publishing skills will be used to produce letter quality documents. Prerequisite: DP225.

OA119 Accounting Procedurres
(4,0) 4
Accounting experiences common to small business or professional offices; development of basic principles underlying accounting procedures; techniques and records used in analyzing, classifying, recording and summarizing transactions; accounting procedures applied to a computer simulation for small businesses. May not be taken for credit following successful completion of AC132.

OA235 Automated Office Systems
(3,0) 3
Lectures and discussions about effects of new technology on the workplace and the role students are expected to play in the office. Such topics as technology, communications, human relations and customer service techniques will be covered. A practice simulation in either medical office or legal office will also be covered. Prerequisite: Word processing and a grade of C or higher in EN210 or EN215, or permission of instructor.

PHYSICS

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

PH221 Elements of Physics I
(3,2) 4
General principles of rigid body mechanics (kinematics, laws of motion, energy and momentum), fluid mechanics and thermal physics. Prerequisite: MA109, and either MA111 or MA140.

PH222 Elements of Physics II
(3,2) 4
Vibrations and waves, electricity and magnetism, optics, relativity and modern physics. Prerequisite: PH221 with a grade of C or better.

PH224 Topics in Physics for Electrical Technology
(3,2) 4
Vibrations and waves, optics, relativity and modern physics (identical to PH222). Electricity and magnetism topics of particular relevance to electronic engineering technology. Prerequisite: PH221 with a grade of C or better, sophomore standing in EET coursework, and MA141 (which may be taken concurrently).

PH231 Applied Physics for Engineers and Scientists I
(3, 2) 4
An introductory course in rigid body mechanics and fluid mechanics using calculus and with emphasis on practical application. Intended primarily for students in engineering, physical science and mathematics curricula. Prerequisite: MA151 or MA143.

PH232 Applied Physics for Engineers and Scientists II
(3,2) 4
Continuation of PH231. Introduction to thermal physics, electricity, magnetism, electromagnetic waves, and optics. Prerequisite: PH231 with a grade of C or better.

PH241 Applied Physics for Engineers and Scientists I
(3,2) 4
An introductory course in rigid body mechanics and fluid mechanics using calculus with emphasis on practical applications. Intended primarily for students in engineering, physic science, and mathematics curricula. Prerequisite: MA160.

PH242 Applied Physics for Engineers and Scientists II
(3,2) 4
A continuation of PH241. An introduction to thermal physics, electricity, magnetism, electromagnetic waves and optics. Prerequisite: PH241 with a grade of C or better.

PH290 Independent Study in Physics
(1-4,0) 1-4
Special studies and/or research in physics for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the school dean. This course may be repeated for a maximum of eight credits. Prerequisites: Sophomore standing or higher and permission of the instructor.

PHILOSOPHY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

PL204 Introduction to Philosophy
(3,0) 3
A study of selected philosophical problems and of methods and ways to answer them. Counts as humanities credit for general education requirement. Prerequisite: EN210 or EN215; or permission of instructor.

PL205 Logic
(3,0) 3
An introductory course in logic; study of the role of logical methods of the rational approach to knowledge; consideration of such concepts as definition, implication, inference, syllogism, deduction. Counts as humanities credit for general education requirement. Prerequisite: EN210 or EN215; or permission of instructor.

PL302 ANCIENT WESTERN PHILOSOPHY
(3,0) 3
A study of the origins and the development of Greek and Roman philosophy from the pre-Socratics to the early Christians. Counts as humanities credit for general education requirement. Prerequisite: EN210 or EN215; or permission of instructor.

POLITICAL SCIENCE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

PS110 Introduction to American Government and Politics
(4,0) 4
An introductory survey of American national government and politics.

PS120 Introduction to Legal Processes
(3,0) 3
An introduction to the nature and characteristics of law as it operates in the United States: structure and function of the judiciary, process of litigation, influences on law, and impact and enforcement of judicial decisions.

PS130 Introduction to State and Local Government
(4,0) 4
A study of the politics and organization of state and local governments, with an emphasis on specific policy issues such as education, criminal justice and economic development.

PS160 Introduction to Canadian Government and Politics
(3,0) 3
An introductory survey of Canadian government and politics.

PS201 Introduction to Public Administration
(3,0) 3
This course provides an overview of the field of public administration. It examines the types of organizations, the relation of administration to politics and public management.

PS211 Political Science Research and Statistics
(4,0) 4
An introduction to research methods and statistical applications in political science and public administration. Among other research methods, the course examines survey research, content analysis, experimental design and analysis of existing data. Introduces students to the basics of descriptive and inferential statistics, up through correlation and regression. Prerequisite: Fulfillment of mathematics competency graduation requirement.

PS222 Introduction to the Legal Profession
(2,0) 2
Students will become familiar with how the law functions, how the legal profession has evolved, how to prepare for and apply to law school and how law schools differ from college. Prerequisites: PS110, 120.

PS241 Introduction to International Relations
(4,0) 4
An introductory study of the factors that influence the conduct of international relations and of the various methods by which those relations are conducted. This material will then be applied to an examination of some appropriate current international controversies.

PS247 Model United Nations
(1,0) 1
This course includes required participation in the model United Nations program, in which students represent specific countries and become familiar with their background and politics. The goal is an understanding of how the United Nations functions. May be repeated for up to a total of four credits, but no more than two credits may be counted toward a political science major or minor. Prerequisite: Permission of the instructor.

PS290 Research Topics in Political Science
(1-4,0) 1-4
This may take the form of either a research project or a program of directed reading on a specific topic. One to four credits over a period of one or two semesters may be granted according to the nature of the student's project. Prerequisite: Permission of instructor.

PS301 Policy Analysis and Evaluation
(4,0) 4
Examines how public issues and problems are analyzed to assist in the development of public policies. Considers the process of evaluating public programs to determine whether they are to be expanded, cut back or continued at the current level. Prerequisite: Permission of instructor.

PS325 Politics and Media
(3,0) 3
Examines the impact of electronic and print media on contemporary American politics. Evaluates proposals for changing the method and role of media coverage of government and politics. Prerequisites: PS110 and junior standing or permission of instructor.

PS331 Comparative Politics of Western Europe and Russia
(4,0) 4
Institutions and functioning of government in major European states, such as Great Britai France, Germany and Russia. Prerequisite: PS110.

PS334 Middle East Politics
(3,0) 3
An examination of government and politics in the Middle East, with special emphasis on the influences of Islam and nationalism on both international and domestic politics of the area. Prerequisite: Junior or senior standing, or permission of instructor.

PS351 Political Philosophy I
(4,0) 4
An examination of political philosophy from the ancient Greeks through the Reformation, concentrating on Plato, Aristotle, Augustine, Aquinas and Machiavelli. Prerequisites: PS110 and junior or senior standing, or permission of instructor.

PS352 Political Philosophy II
(4,0) 4
An examination of political philosophy from the seventeenth century to the twentieth century, concentrating on Hobbes, Locke, Rousseau, Hume, Burke, Bentham, Mill, Hegel, and Marx. The course includes analysis of the period's main ideologies: Conservatism, liberalism, socialism, communism, anarchism, fascism and national socialism. Prerequisites: PS110 and junior or senior standing, or permission of instructor.

PS357 Politics of Violence
(3,0) 3
An interdisciplinary examination of the origin, nature and consequences of political violence, including war, revolution and terrorism. Prerequisite: Junior or senior standing or permission of instructor. May also be used for sociology credit.

PS364 Political Parties, Interest Groups and Public Opinion
(3,0) 3
Examines the roles of political parties and interest groups in the American political system, especially in elections and lobbying activities. The formation and uses of public opinion are also analyzed. Prerequisite: PS110.

PS367 Congress and the Presidency
(4,0) 4
Examines the legislative and executive branches of government as parts of the policy-making process. Prerequisite: PS110.

PS401 Principles of Public Administration
(3,0) 3
Examines major issues and methods in public administration. Analysis of specific public policy issues. Prerequisite: Advanced standing or permission of instructor.

PS411 U.S. Foreign Policy I
(3,0) 3
A study of the formulation and conduct of American foreign policy. Analysis of relevant factors, institutions which influence the formulation and conduct of policy; and an examination of selected foreign policies. Prerequisite: PS110.

PS420 Politics of the World Economy
(4,0) 4
Power conflict at the international economic level and its impact on the politics of various nations, states, regions and interests. Prerequisites: PS110 or PS160, and junior standing, as well as either EC201 or EC202, or permission of the instructor. PS241 recommended but not required.

PS463 Seminar in Political Science
(1-3,0) 1-3
A reading and discussion seminar dealing with selected topics in political science. Course may be repeated with permission of instructor. Prerequisite: Junior or senior standing, or permission of instructor.

PS467 Constitutional Law and Civil Liberties
(4,0) 4
Principles of the American Constitution: separation of powers, federalism, the powers of the national and state governments, and limitations on the exercise of these powers as well as principles of the American Constitution respecting civil rights and liberties, The Bill of Rights, equal protection of the laws, citizenship and suffrage, and limitations on the exercise of those rights. Prerequisite: PS120 or its equivalent, or permission of instructor.

PS490 Independent Study in Political Science
(l-3) 1-3
Independent research or directed study under the supervision of a faculty member. Prerequisite: Permission of instructor. May be repeated for a total of nine credits.

PS491 Senior Seminar I
(3,0) 3
The first course in a capstone sequence required of all political science majors. The course examines the history of political science and public administration and reviews contemporary approaches and recent research. Students prepare a research proposal to be carried out in PS492. Prerequisites: Political science major and senior standing, or permission of instructor.

PS492 Senior Seminar II
(3,0) 3
Completion of the research project begun in PS491. Students will make oral presentations of their project results at the end of the course to other students, faculty and invited guests. Prerequisite: PS491.

PS499 Political Science/Public Administration Internship
(1,9 - 27) 3-9
Students arrange, with the assistance and approval of the instructor, a supervised work experience in a governmental, community or nonprofit organization. Students perform professional tasks under the supervision of agency personnel. The students' review and evaluation of the work experience is under the direction of the instructor. Permission of the instructor required by the seventh week of the preceding semester. Course may be repeated to a maximum of nine credits.

PS601 Foundations of Public Administration
(3,0) 3
Introduction to public administration by providing an overview of the central issues, values and problems associated with the field. Through the use of the case study method, public administration will be examined as the operation of government entities.

PSYCHOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

PY101 Introduction to Psychology
(4,0) 4
A general introduction to the systematic study of behavior and mental processes in human and animals.

PY155 Lifespan Development
(3,0) 3
Human psychological development from birth to death. This course covers social, emotional and intellectual development across the lifespan. This course will not count toward a major or minor in psychology.

PY201 Communication Skills in Counseling
(2,1) 3
This course covers the essential elements of establishing a therapeutic relationship, including active listening skills, empathy and confrontation. Students both explore their potential to be congruent and authentic as counselors and demonstrate counseling skills with voluntary, involuntary and crisis counselors. No prerequisite. Also listed as SW201.

PY210 Statistics
(3,0) 3
Introduction to basic statistical methods of analyzing psychological data. Emphasis is placed on statistical inference, e.g., t-tests, F-tests and selected non-parametric tests. This course provides students with basic statistical concepts and skills necessary for laboratory and survey work, and for understanding psychological literature, and introduces them to statistical analysis on the computer. MA207 may be used in place of PY210 to meet the psychology major and minor requirements. Prerequisite: Fulfillment of mathematics competency graduation requirement.

PY212 Experimental Psychology
(3,0) 3
An examination of the basic research methods employed in the social sciences with emphasis on the experiment. Topics: Epistemology, laboratory experiments, field experiments, survey construction, correlational research. Students will each participate as a subject and an experimenter, collect data, analyze data, and write a laboratory report according to the editorial style of the American Psychological Association. Prerequisites: PY101 and PY210 or MA207.

PY217 Social Psychology
(3,0) 3
Topics include attitude formation and change, interpersonal attraction, aggression, altruism, conformity and environmental psychology.

PY228 Organizational Behavior
(3,0) 3
An introduction to the theories, principles and practices of organizational behavior within the workplace. May be used for sociology credit.

PY240 Behavior Management
(3,0) 3
Systematic introduction to behavioral concepts and techniques. Self-management applications and behavioral assessments in applied settings serve as practical lab experiences.

PY259 Abnormal Psychology
(3,0) 3
This course is a systematic investigation of the identification, dynamics and treatment of deviant and maladaptive behavior.

PY265 Child and Adolescent Development
(3,0) 3
Psychological development of the child through adolescence. Social, emotional and intellectual development are covered, with consideration of genetic, prenatal and postnatal influences. Prerequisite: PY101.

PY291 Group Counseling
(3,0) 3
This course examines the theory, techniques and practice of group counseling. Students will become familiar with basic group process, theoretical perspectives and their application to group counseling. Prerequisite: PY203.

PY301 Exceptional Child and Adolescent
(3,0) 3
The study of physically, intellectually and socially exceptional children and adolescents, including their characteristics and unique educational needs. Prerequisite: PY155 or PY265.

PY311 Learning and Motivation
(3,0) 3
An introduction to the theory and research of learning. Factors are examined that influence the acquisition and performance of behaviors in classical and instrumental learning paradigms. Prerequisite: PY212.

PY357 Personality Theory
(3,0) 3
This course surveys the major psychological theories used to conceptualize, treat and research personality issues. Prerequisite: 12 hours of psychology or permission of instructor.

PY383 Industrial Psychology
(3,0) 3
The principles of human behavior in the industrial situation are studied with particular emphasis given to scientific methods of selecting, utilizing, and evaluating a work force in ways consistent with the well-being of the individual worker. Prerequisites: PY101 and statistics.

PY385 Health Psychology
(3,0) 3
This course covers psychoneuroimmunology and stress as they impact on human health and disease as well as psychological interventions which promote physical well being and healing. Prerequisite: Junior standing or permission of instructor.

PY391 Family Therapy
(3,0) 3
This course applies a systems framework to the understanding of family dynamics and introduces structural perspectives and modalities for family intervention. Prerequisites: PY101 and junior standing.

PY396 Tests and Measurements
(3,0) 3
This course has two parts. Part one covers measurement theory, the properties of the normal curve, reliability, validity and measurement statistics. Part two reviews major tests used by researchers, educators, clinicians, counselors, addictions counselors and industrial psychologists. Prerequisite: SO201, PY210, MA207 or equivalent.

PY456 History and Systems of Psychology
(3,0) 3
An examination of persons, events, theories, schools and systems that influenced and defin contemporary psychology. Prerequisite: PY311.

PY457 Cognition
(3,0) 3
A survey of recent findings on cognition in humans. Topics include learning, memory, problem solving, language and complex perceptual processes. Prerequisite: PY311.

PY459 Physiological Psychology
(3,0) 3
This course is an introduction to the neurophysiological structures of the brain and their functions as regulators of animal and human behavior. Prerequisite: PY311.

PY490 Research Topics in Psychology
(1-4) 1-4
This may take the form of either a research project or a program of directed reading on a specific topic. One to four credits over a period of one or two semesters may be granted according to the nature of the student's project. Prerequisite: Permission of instructor. May be repeated up to a total of six credits.

PY498 Senior Research I
(3,0) 3
The study of methods employed in gathering data for research purposes including direct observational techniques and self-report measures. Students will also learn to use the computer to gather data, analyze data and present data graphically; and will develop a research prospectus. Prerequisites: PY210, PY212, PY311.

PY499 Senior Research II
(4,0) 4
Applications of the principles derived from PY498 to the investigation of a research topic. Also, presentations on recent developments and approaches in psychology, including ethical issues in research. Prerequisite: PY498.

RECREATIONAL ACTIVITIES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

RA103 Badminton and Racquetball
(0,2) 1
This course will serve to introduce the student to two racquet sports: Racquetball and badminton. The course will offer each sport for 7.5 weeks and then the student will rotate to the other racquet sport.

RA105 Bowling
(0,2) 1
This course will emphasize delivery, scoring etiquette, strategies for converting spares, spot vs. pin bowling, and learning about handicapping. The course will involve theory as well as practical experience.

RA106 Backpacking
(0,2) 1
Introduction to equipment, safety precautions, environmental concerns and skills needed to successfully backpack. Class will experience a weekend backpacking trip.

RA107 Canoe Techniques
(0,2) 1
This course will introduce the student to the basic strokes and canoe safety associated with flat water canoeing.

RA108 Outdoor Survival
(0,2) 1
This class will focus on the appropriate strategies to employ to avoid a survival situation. It will also expose the student to various techniques and strategies to employ should they find themselves "lost" or unexpectedly spending several days and nights in the out-of-doors.

RA109 Rock Climbing and Rappelling
(0,2) 1
This course will introduce the student to the components associated with top rope climbing and rappelling. The student will become familiar with equipment, knots, setting up a safe site, terminology and technique.

RA110 Golf
(0,2) 1
This course is designed to provide the beginning golfer with the fundamentals of the activity and to further play as a lifetime recreational activity.

RA114 Self Defense
(0,2) 1
This course is designed to introduce the student to the philosophy, concepts and various strategies associated with the martial arts. Physical and mental conditioning and physical techniques associated with the art of self defense will be presented and practiced.

RA119 Cross Country Skiing
(0,2) 1
This course will introduce the student to the sport of cross country skiing. Emphasis will be placed on basic skill development, equipment selection, maintenance of equipment and the enjoyment of winter and the beauty it has to offer. The majority of class time will be spent skiing; class instruction will occur during the ski, usually on a one-to-one basis to meet the needs of the student.

RA125 Tennis
(0,2) 1
This course is intended to develop each student's present knowledge and skills in order that they will be able to pursue tennis as a lifetime leisure activity.

RA127 Volleyball
(0,2) 1
This course is designed to develop basic skills and progression in power volleyball. Conditioning, drill, game tactics and rules will be practically applied.

RA129 Basketball
(0,2) 1
This course is designed to expand each student's present knowledge and skill specific to skill execution, game play, game strategy and rules. May not be repeated for credit. Not available for credit to any student/athlete playing intercollegiate basketball.

RA130 Intercollegiate Sports Skills
(0,2) 1
Will meet as directed by instructor. The course is designed for student-athletes involved in intercollegiate athletics. It provides the opportunity to develop advanced skills in their respective sports. The course may be taken two times for a total of two credits. It may be taken only once per academic year and only during the term in which the student-athlete is participating in an intercollegiate sport.

RA150 Individualized Physical Fitness
(0,2) 1
This class is designed to enable the student to discover his or her own level of fitness and develop and implement an exercise program that will address personal fitness concerns. Central to this process is introducing the student to various aspects of a balanced fitness program and providing personal assistance to the student in selecting beginning fitness goals and appropriate progression of those goals.

RA151 Jogging for Fitness
(0,2) 1
Introduction to jogging as a means of developing physical and mental fitness. Development of an activity ideal for lifetime leisure involvement.

RA152 Orienteering
(0,2) 1
The focus of this class will be to introduce the student to map and compass reading skills and techniques associated with coordinating their use. It will also introduce the student to the competitive sport of orienteering.

RA153 Weight Training
(0,2) 1
This class is designed to familiarize each student with basic weight training knowledge. The student will become familiar with muscular systems, functions, and safe and effective ways to organize and implement a weight training routine.

RA160 Adapted Activities
(0,2) 1
Leisure activities adapted to meet the needs of students with disabilities. Emphasis on walking, jogging and aquatics. (May be repeated for credit.)

RA173 Social Dance
(0,2) 1
This course is designed to provide participants with a broad range of dancing patterns and rhythmic skills. Through social interaction, the following social dances will be learned: Mixers, round dance, square dance and ballroom dance.

RA174 Aerobic Dance
(0,2) 1
This course will provide the student with an opportunity to become involved in a structured aerobic dance program. The purpose of this type of programming is to improve an individual's physical fitness through rhythmic and dance activities.

RA180 Beginning Skating
(0,2) 1
The students will be provided with an opportunity to learn the basic fundamentals of skating and to gain sufficient knowledge of the sport so that they may continue to enjoy and improve for the rest of their lives.

RA194 Scuba
(0,2) 1
This course is designed to introduce the student to the appropriate and safe use of self-contained underwater breathing apparatus.

RA195 Beginning and Advanced Beginning Swimming
(0,2) 1
Course meets in pool two hours a week. Mostly lab work but some lecture. Students cover material in Red Cross beginner and advanced beginner courses and receive certification in one or both depending on skill level attained.

RA196 Intermediate and Advanced Swimming
(0,2) 1
Course meets in pool two hours a week. Mostly lab work but some lecture. Students cover material in Red Cross Intermediate and Swimmer courses and receive certification in one or both depending on skill level attained. Prerequisite: Red Cross advanced beginner certification or equivalent skills.

RA197 Physical Fitness for Law Enforcement
(0,3) 1
This course will provide senior criminal justice students enrolled in the Michigan Law Enforcement Officers Training Council certification track with the opportunity to maintain their physical prowess and to prepare for the state physical ability test. Prerequisite: Senior criminal justice students enrolled in the MLEOTC track.

RA210 Lifeguarding
(0,4) 2
Course meets in pool four hours a week. Mostly lab work, some lecture. Students cover material in Red Cross Basic and Emergency Water Safety course and Red Cross Lifeguarding course. Students receive certification in one or both depending on skill level attained. Either certificate qualifies students to take water safety and lifeguarding Instructor course, RA211. Prerequisite: Red Cross intermediate swimming certificate or equivalent skills.

RA211 Water Safety and Lifeguard Instructor
(0,4) 2
Course meets four hours a week, 70 percent of the time in the pool and 30 percent of the time in the classroom. All students cover material in Red Cross water safety instructor course and do a teaching practicum at the Lake Superior State University pool. Those students entering with a current lifeguarding card may also cover lifeguarding instructor material. Prerequisites: Current Emergency Water Safety or Lifeguarding certificate.

RECREATION

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

RC101 Introduction to Recreation and Leisure Services
(3,0) 3
Overview of philosophy, history, theory, programs, professional leadership and organizations, economics and leisure service delivery systems.

RC105 Program Development and Leadership in Recreation and Leisure Services
(3,0) 3
Principles of leadership skills and styles are applied to various recreation settings with emphasis on group interaction and face-to-face leading. Programming fundamentals for effective leisure services delivery are explored and implemented. Prerequisite: RC101.

RC212 Instructional Methods in Adapted Aquatics
(1,2) 2
Based on American Red Cross adapted aquatics guidelines, the course is designed to help students develop skills used when planning, implementing, instructing, and evaluating water activity programs for those with a disability. Current water safety instructors (WSI) may become American Red Cross certified as adapted aquatics instructors. People who do not have a WSI may become American Red Cross certified adapted aquatics aides.

RC220 Methods in Arts and Crafts
(3,0) 3
A variety of arts and crafts media are studied and applied to specific recreation settings with concentration on leading and programming. Prerequisites: RC101 and RC105.

RC240 Foundations of Therapeutic Recreation
(3,0) 3
An introduction to the profession of therapeutic recreation. Students will be introduced to history, philosophy, current professional trends, professional organizations, professional literature and career opportunities for therapeutic recreation specialists. The health care team and the role of the therapeutic recreation specialist will also be explored. Prerequisite: RC101 and RC105.

RC262 Outdoor Recreation
(3,0) 3
This course will introduce the student to a variety of topics and content areas related to outdoor recreation. These topics will include outdoor education, organized camping and adventure education. Also included will be an opportunity to become familiar with outdoor living skills. Prerequisite: RC105.

RC270 Sports Management
(3,0) 3
This course will provide philosophies, organization techniques and administration principles for youth sports, officiating, intramurals, organized athletics and recreational sports. Issues on assessment, design, implementation, and evaluation for sports programs in today's society will be explored. Investigation of appropriate resources, professional organization's impact, training methods, certification processes and gender issues will be highlighted. Prerequisites: RC101 and RC105 or permission of instructor.

RC280 Readiness in Games, Activities and Sports
(3,0) alternate years 3
This course will focus on the selection and implementation of games, activities and sports which are age-appropriate for the clientele being served. Psychological, sociological, emotional and physiological readiness will be studied as it relates to implementation,

modification and presentation of games, activities, and sports to various age groups. Both positive and negative outcomes will be identified.

RC295 Practicum
1-2
Practical experiences designed to provide the student with various types of recreation programs. The student will work under a site supervisor specialized in that particular area of the student's interest. One credit hour for every 45 hours of practical experience. May be repeated for up to four credits.

RC320 Dance and Rhythmic Activities for Recreation
(3,0) 3
Study of dance in social and therapeutic settings; developing skills to lead programs and adopt a variety of rhythmic activities for individuals and groups: Creative movement, improvisation, variety of social dance, historical significance to actual implementation. Prerequisites: RC101 and RC105.

RC340 Program Development in Therapeutic Recreation
(3,0) 3
Students will explore in detail the therapeutic recreation service model which will include the components of treatment, leisure education and recreation participation. All aspects of comprehensive and specific program planning will be explored with a special concern for the development of individualized behavioral objectives. Prerequisite: RC240.

RC342 Disabilities Seminar in Therapeutic Recreation
(3,0) 3
An extensive survey of disabling conditions which the therapeutic recreation specialist may encounter. Emphasis will be placed on incidence, characteristics, etiology, restrictions to involvement and most current research. Class will be taken on a student research/ presentation format. Prerequisite: RC240.

RC344 Recreational Pursuits and Disabling Conditions
(3,0) 3
A study of specialized recreational and athletic opportunities available to individuals with disabling conditions; such opportunities will be presented as potential activities to be included as part of comprehensive therapeutic recreation services. Practical applications will be encountered. Prerequisite: RC342.

RC346 Clinical Issues and Practice in Therapeutic Recreation
(2,4) 3
Through a combination of directed fieldwork and classroom instruction, students will begin to apply therapeutic recreation theory and program development to the clinical environment. Issues of professional development, confidentiality, assessment, documentation and evaluation will be covered. Prerequisites: RC340, RC 342.

RC362 Land Management for Recreation Purposes
(3,0) 3
This course is designed to meet the needs of the student pursuing a parks and recreation degree. Provides insight and understanding for problems inherent to managing recreation lands for optimum use and minimum impact. Also, for recreation majors in outdoor recreation option. Prerequisites: RC101, RC262.

RC365 Expedition Management
(2,2) 3
Intensive study of performance, programming, leadership and management skills involved in conducting wilderness and back country recreation programming. The student will become aware of various theoretical support structures and paradigms associated with adventure education and the values associated with the use of outdoor programming as a therapeutic intervention modality. Course content includes: Initiating and programming

wilderness/back country experiences, group dynamics and outdoor living skills. A ten-day outing is required immediately upon completion of the semester. Prerequisite: RC262 or permission of instructor.

RC370 Recreation for the Elderly
(3,0) 3
Geared to individuals who will be working with senior citizens in recreation programs, hospitals, nursing homes and family members. The aging process will be studied from the perspective that sound principles will be applied to leading and programming for this growing segment of our population. Prerequisite: RC101, RC105, and 200 level recreation electives.

RC390 Recreation Leader Apprenticeship
(1,0) 1
Practical experience in learning to teach and lead various recreation experiences. Students serve with qualified instructors. Prerequisite: Basic skills and knowledge of activity or permission of instructor. May be repeated for a total of three credits.

RC435 Problems and Issues in Therapeutic Recreation
(3,0) 3
This course will serve as a culminating educational component for the student majoring in therapeutic recreation and recreation management. The course will focus in part on current problems and issues in therapeutic recreation and will also have a major emphasis on developing an original research project. Prerequisite: RC346, PY210, or permission of instructor.

RC436 Therapeutic Recreation and Leisure Science Research
(2,0) 2
This course is the second part of a two-part research sequence required by therapeutic recreation and recreation management majors. This course will focus upon research methodology associated with implementing a research project, collecting data, data analysis and presentation. Current state, national and global issues and trends in the recreation field will also be presented. Prerequisite: RC435.

RC481 Professional Development Seminar
(1,0) 1
Opportunities for students to refine personal and professional goals and initiate preparation of resumes and interviewing skills. Career planning and placement will be emphasized as well as internship evaluation. Seminar format. Prerequisite: Senior status required.

RC482 Administration of Recreation and Leisure Services
(4,0) 4
This course will emphasize organizational patterns and administration problems encountered in operating various types of recreation departments and agencies. Additional content will include budgeting, fund raising, grant writing, personnel management and public relations. Prerequisites: RC105 and junior standing.

RC492 Internship
2-6
This is a comprehensive practical application of the student's formal academic preparation. Prerequisites: Completion of 20 of the 25 hours of departmental core requirements and junior or senior standing.

RC496 Selected Research Topics
(1-3,0) 1-3
Student carries out approved project(s) of his/her own initiative. Prerequisites: junior standing or permission of instructor.

ROBOTICS AND CONTROL SYSTEMS

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

RS280 Robotics Technology
(2,3) 3
Introduction to the field of robotics technology. Topics include: Robotics applications in the manufacturing and service industries, classification of robot systems, robot anatomy, robot control systems, robot end effectors, robot sensors, robot hardware and software, robot cell design, and sociological, economical and management issues in robotics. Laboratory exercises involve programming industrial robots and robot systems integration using programmable logic controllers. Prerequisite: MA140, MA109 and knowledge of DOS.

RS365 Programmable Logic Controllers
(2,2) 3
An introduction to the use of programmable logic controllers (PLC). Basic components of the PLC along with the interface to hydraulic/pneumatic systems and sensors will be discussed. Some higher-level functions such as zone control, master control and sequencers will also be covered. Written business communications is an integral part of the course. Prerequisite: EE210 or equivalent.

RS385 Robotics Engineering
(2,3) 3
An introduction to the field of robotics engineering. Topics include classification of robot systems, robot anatomy, control systems, end effectors, robot applications, robot sensors, robot hardware and software, and robot cell design. The study of the orientation and configuration coordinate transformations and forward and inverse kinematics will be included. Prerequisites: MA243 and EM220.

RS430 Systems Integration and Machine Vision
(3,3) 4
A study of the theory and application of sensors and machine vision in modern manufacturing systems. Topics will include position sensors, encoders, interface electronics, force and torque sensors, LAN, PLC, electrical noise, machine vision, lighting techniques, control software, feature extraction techniques and robot guidance. Prerequisites: MA144, EG265, and EE305 or equivalent.

RS435 Automated Manufacturing Systems
(3,3) 4
A study and analysis of the components of an automated manufacturing system. Topics include analysis of flow lines, automated assembly systems, materials handling and storage, group technology, NC/CNC control, CAD/CAM, FMS and CIM. Course work will include applications of a manufacturing information systems software. Laboratory work will focus on programming industrial robots. In addition, mechanical engineering students will be introduced to computer networking and architecture. Electrical engineering students will be introduced to NC/CNC applications. Prerequisites: MA144, RS280 or RS385, and senior standing.

RS460 Control Systems
(3,3) 4
An introduction to the analysis and design of linear feedback control systems. The course will include a study of system modeling, block diagrams, system response, stability, steady state error, bode plots and root locus. Laboratory exercises will develop a student's ability to design feedback systems and quantify system performance. Prerequisite: MA343, EM220, and EE210 or equivalent.

RS480 Control Systems and Automation
(3,3) 4
Introduction to the analysis of linear feedback control systems. Systems modeling, stability and output response will be covered. Other topics include: Analysis of automated flow lines, computer-integrated manufacturing (CIM), materials requirement planning (MRP) and sensors for automated manufacturing. Laboratory work will focus on advanced robot programming, systems integration projects and manufacturing software applications. Prerequisites: RS280, MA160, MT225, and ET175.

NATURAL RESOURCES TECHNOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

RT102 Methods in Natural Resources
(0,3) 1
A lab course introducing students to field techniques utilized in the natural resources technology program. Methods in forestry, soils, water quality, fishes, and wildlife will be presented.

RT206 Wildlife Management Techniques
(1,3) 2
A lab and field course working with techniques and specimens commonly associated with wildlife management. Prerequisites: Enrollment in natural resource technology program, NS103, RT284.

RT207 Biology and Management of Fishes
(2,3) 3
Identification and natural history of important regional fishes followed by a study of their ecology and management, with emphasis on management techniques. Prerequisite: Enrollment in natural resource technology program.

RT284 Principles of Forestry
(2,4) 4
An introduction to the various areas of forestry, some techniques utilized by foresters, and an analysis of an area for management purposes. Prerequisites: NS103 and BL130 with a C or better.

RT286 Limnological Techniques
(3,3) 4
A course designed to provide training in hydrographic methods, sampling techniques and aquatic surveys. Prerequisite: Permission of instructor.

STUDENT SERVICES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

SA090 Developmental Reading I
(2,2) 3
A combination of lectures, activities and labs provide information and experiences needed to help eliminate inefficient reading habits and develop better reading skills. Emphasis is placed on reading/study strategies, comprehension, reading rate/flexibility, vocabulary, and concentration and memory improvement. Labs are individualized to accommodate the student's needs based on assessment tests. This course is required of those students who score below the reading proficiency level on the college placement test.

SA091 Developmental Reading II
(2,2) 3
This course is a sequel to SA090 for those students who need additional work to meet the minimal reading proficiency requirement. Greater emphasis will be given to the application and practice of critical reading/thinking skills, textbook reading strategies, vocabulary in the disciplines and comprehension. Individualized labs will be based on personal needs. Prerequisite: SA090.

SA100 How to Succeed in College
(1.5,0) 1
A general overview of the importance attitude and motivation play toward academic success. Help students understand LSSU programs, policies and procedures. Focus on the various study skills that can help students improve their note-taking, preparing for and taking tests, time management, memory and reading skills. The course consists of lectures, discussions and quizzes.

SA105 Development of Reading Abilities
(1,1) 1
Lectures, discussion, activities and labs provide students with the information and experiences needed to develop reading-rate flexibility, vocabulary skills, critical reading/thinking skills for reading in the context areas, and concentration and memory improvement. Labs are individualized to fit each student's needs, as determined by a reading test given at the beginning of the semester.

SA125 Career Planning and Decision Making
(0,1.5) 1
Expanding awareness of personal strength and career options, this course will help students make realistic decisions relating to planning and implementation of academic and life career goals. Follows a student self-directed framework utilizing video-tapes and career/self-exploration to complete assignments. Prerequisite: student must be fully admitted for enrollment at LSSU and currently enrolled in six (6) credits.

SA150 Personal Growth Seminar
(0,1.5) 1
A seminar to help students make the transition to university life, communicate effectively on an interpersonal level, strengthen self-concept and build positive relationships. Course content addresses the personal, social, educational and vocational aspects of individual development.

SA205 Group Interactions
(3,0) 3
This course is designed for the first-year resident advisors to develop a better understanding of self and others, particularly in regard to group responsibilities. There will be a three-day pre-fall orientation program. Group activities will be aimed at developing cohesiveness. Curriculum will increase awareness of group processes and interaction skills including: Leadership, referral, conflict resolution, assertiveness, crisis intervention, programming, empathy and active listening. Prerequisite: For first-year resident advisors only.

SPEECH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

SD101 Fundamentals of Speech Communication
(3,0) 3
A study of communication theory as it relates to the oral sender and receiver in interpersonal, dyadic, small group, and public speaking situations. Application will be in percep-

tual analysis, dyadic encounters, small group problem-solving and discussion, and public speaking situations.

SD161 Problems in Speech/Drama
(1-3,0) 1-3
Practical problems in speech or theatre. Requires participation in forensics, debate, Reader's Theatre or theatre. May be repeated for a maximum of three credits. Prerequisite: SD101 or permission of instructor.

SD201 Small Group Communication
(3,0) 3
Analysis of verbal communication in small groups as related to information processing, problem solving, agenda establishment, decision making and policy formation. Prerequisite: SD101.

SD202 Informative Speaking
(3,0) 3
Development of effective and informative discourse in theory and practice. The preparation and use of audience analysis, organizational structures and visual aids will be applied to descriptive, conceptual and expository situations. Prerequisite: SD101.

SD210 Business and Professional Speaking
(3,0) 3
An introduction to basic skills, principles and contexts of communication in business and professional settings. Application will be in presentational, team-building and interviewing skills. Prerequisite: SD101.

SD211 Advanced Public Speaking
(3,0) 3
A grounding in upper-level public address with an emphasis on both informative and persuasive strategies. It will be taught using a combination of lecture, discussion, video analysis and critiques, and speeches. Prerequisite: SD101.

SD225 Interpersonal Communication
(3,0) 3
An introduction to interpersonal communication theory, with a focus on improved understanding of relationships and an improved ability to communicate more effectively with a variety of people. Prerequisite: SD101.

SD251 History of Drama & Theatre I
(3,0) 3
The study of the historical and esthetic drama and theatre from the Greek period to the European Renaissance. Counts as humanities credit for general education requirement. Prerequisite: EN110.

SD252 History of Drama & Theatre II
(3,0) 3
The study of the historical and esthetic drama and theatre from the Renaissance to current theatre and drama. Counts as humanities credit for general education requirement. Prerequisite: EN110.

SD302 Argumentation and Advocacy
(3,0) 3
Provides a practical grounding in the methods of public debate. Students are familiarized with theoretical frameworks for testing propositions through direct clash of evidence and arguments. The emphasis is on practical experience gained through experiences in oral argument.

SD307 Classical/Contemporary Rhetoric
(3,0) 3
A study of the development of rhetoric beginning with the Greeks and continuing to the present. An emphasis will be placed on the influences of past rhetoric to current theory. Prerequisite: SD101 or permission of instructor.

SD308 Communication Theory
(3,0) 3
A study of the sources, dimensions and applications of contemporary communication theory, including the impact of mass communication in modern society. Prerequisite: SD101 or permission of instructor.

SD309 Speech and Drama Productions
(3,0) 3
Practical problems in the development and production of dramatic works, forensics workshops, tournaments and festivals. Prerequisite: SD101 and permission of instructor.

SD320 Public Relations
(4,0) 4
Public relations theory and practice will form the two emphases of the course. Theory will be explored and discussed as foundation for the application of public relations concepts and strategies. Students will be responsible for working with organizations in order to develop realistic PR campaigns which reflect the awareness of the significant structures and responsibilities involved in a professional approach to public relations. Prerequisite: SD101 or permission of instructor.

SD325 Organizational Communications
(3,0) 3
Focus on oral communication as it impacts on and permits coordination among people and thus allows for organized behavior. Focus on business and organizational contexts for interpersonal transactions. Participant involvement in simulation designed to generate insights into the elements involved in coordinated and competitive organizational communication. Selected topics for theory and practice: Interpersonal transactions, communication rules, conflict management, negotiations, trust, power and influence. Prerequisite: SD101 or permission of instructor.

SD416 Communication Leadership
(3,0) 3
An advanced application of theory from the speech communication field to issues in organizational leadership. Leadership theory is surveyed from the speech communication perspective, with an eye toward building applicable skills. Particular emphasis is laid upon cultivating the ability to continue the process following the conclusion of the course. Prerequisite: SD101.

SOCIOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

SO101 Introduction to Sociology
(3,0) 3
An introduction to the basic concepts of sociology. Explanation of human behavior which emphasizes human groups, institutions, social change and social forces.

SO102 Social Problems
(4,0) 4
An introductory course providing data and theory for a variety of contemporary social problems such as poverty, unemployment, teenage pregnancy, inequality, housing shortages, violence and pollution.

SO103 Cultural Diversity
(3,0) 3
This course introduces the student to racial, ethnic, gender and social class variation within the United States and the global community to enable the student to better understand, live with, and appreciate diversity.

SO113 Sociology of the American Family
(3,0) 3
A study of the development and change of the American family since 1890. This study will explore the impact of urbanization, industrialization, increased mobility, extended education and the changing status of women on the American family.

SO202 Social Research Methods
(3,0) 3
Introduction to basic methods of social research. (Also listed as SW202.)

SO213 Introduction to Anthropology
(3,0) 3
A study of the evolution of humankind and the evolution and development of culture and society. Prerequisite: One introductory sociology course.

SO214 Criminology
(3,0) 3
A study of the nature and causes of crime and the results of various attempts to reduce crime.

SO225 Native Cultures of North America
(3,0) 3
A study of the Native American Indian and Inuit cultures of North America from earliest times to the present with emphasis on contrasting patterns of cultures. (Also listed as NA225.)

SO226 Races and Minorities
(3,0) 3
Study of various social and ethnic minorities in the United States with an emphasis on Black/White relations. Competition, conflict and prejudice as they influence social and ethnic minority group relations. Social movements and their effects on majority, minority relations. Prerequisite: Sophomore standing.

SO227 Population
(3,0) 3
Study of the basic problem of the world's population increase and distribution in relation to natural resources and standards of living.

SO238 Social Psychology
(3,0) 3
Examines the social nature of humans, exploring both the influence of social structures upon behavior and the process by which people create social structures; symbolic interactionist theory explained. Prerequisite: SO101.

SO242 Sociology of Sex
(3,0) 3
Socio-psychological study of the impact of human sexuality upon human behavior.

SO302 Statistics for Social Science
(4,0) 4
The social foundation of statistical inference is discussed and elementary statistical concepts are introduced through numerical problems: Z scores, t-test, chi square, correlation, ANOVA, etc. Prerequisite: Fulfillment of mathematics competency graduation requirement.

SO303 Contemporary Sociological Theory
(3,0) 3
Comparison and assessment of the models and concepts used today by sociologists to explain human behavior. Prerequisite: SO101.

SO313 Work and Organization
(3,0) 3
Development and structure of the workplace; includes contemporary trends in formal organization and management styles, changing career patterns, sources of conflict and some cross-cultural comparisons. Prerequisite: Junior standing or three hours of sociology.

SO314 Social Change
(3,0) 3
Study of trends in industrial societies, theories explaining these changes, and the role of social movements in social change; focusing primarily on industrialized societies with some discussion of developing countries. Prerequisite: Junior standing or three hours of sociology.

SO321 Sociology of Women
(3,0) 3
This analysis of the roles and status of women in contemporary American society covers social structure, social psychology and social movements; also includes some cross-cultural comparisons.

SO325 Social Stratification
(3,0) 3
Class, caste, status, power, general concept of stratification and consequences of stratification will be related to social institutions.

SO326 The Sociology of Aging and the Aged
(3,0) 3
Examines aging and the aged in American society from the sociological perspective.

SO327 The Sociology of Dying and Death
(3,0) 3
Sociological examination of dying and death.

SO338 Deviance
(3,0) 3
Analysis of causes and consequences of deviance and development of deviant subcultures; examination of various societal responses to control deviance and their effectiveness. Included are alcoholism, crime, mental illness and homosexuality among others. Prerequisite: Junior standing or three hours of sociology and/or human services. (Also listed as SW338.)

SO339 Culture and Personality
(3,0) 3
Analysis of the role of culture in shaping personality using both contemporary industrial society and also cross-culture material. Prerequisite: Three hours of sociology or junior standing.

SO341 Addiciton
(3,0) 3
Study of the nature of chemical dependence with emphasis on individual, social and cultural variations of drug effects. Relationship of chemical use to the family system. Comparisons between chemical and non-chemical dependent behaviors. Prerequisite: Six hours of sociology or permission of instructor. (Also listed as SW341.)

SO344 Social Welfare Systems
(3,0) 3
Development of social welfare systems including changing programs and philosophy and interrelationships with economic, political and family institutions; cross-cultural comparisons; current issues and problems in social welfare. Prerequisites: Junior standing or three credits in sociology. (Also listed as SW344.)

SO402 Honors Sociology Research
(3,0) 3
Working under the guidance of a sociology faculty member, the student develops and conducts a sociological research project, analyzes the data, prepares a written report in journal format and gives a formal presentation of the results. Prerequisites: SO101, SO202, SO303; GPA of 3.0 or higher; or permission of instructor.

SO403 Development of Sociological Theory
(3,0) 3
A critical analysis of the contributions to sociological theory by Comte, Spencer, Marx, Durkheim, Pareto, Weber and others.

SO405 Seminar: Current Sociological Issues
(3,0) 3
Contemporary issues in sociology, to vary from year to year. Extensive reading, writing, and discussion expected. Prerequisite: Junior standing and 12 hours in sociology. Formerly listed as SO401.

SO490 Independent Research Topics in Sociology
(1-4) 1-4
This may take the form of either a research project or a program of directed reading on a specific topic. One to four credits over a period of one or two semesters may be granted according to the nature of the student's project. Prerequisites: SO402. May be repeated to a total of six credits.

SPANISH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

SP161 First Year Spanish I
(4,1) 4
Introduction to basic Spanish grammar and vocabulary, designed to acquaint the student with the essentials of oral and written Spanish.

SP162 First Year Spanish II
(4,1) 4
Further study of Spanish grammar and vocabulary; emphasis on oral communication; reading of various materials in Spanish with the aim of understanding the meaning, enlarging the vocabulary and using Spanish for communication. Prerequisite: SP161 or equivalent.

SP165 Spanish for Public Safety
(4,1) 4
A continuation of SP161, with emphasis on vocabulary relevant to work in criminal justice. Prerequisite: SP161 or equivalent.

SP261 Second Year Spanish I
(4,1) 4
Intensive review of grammar and further vocabulary development. Emphasis on composition and conversation based on the reading of Spanish texts and newspapers. Prerequisite: SP162 or equivalent.

SP262 Second Year Spanish II
(4,1) 4
Conducted as much as possible in Spanish with the primary aim of dealing fluently with basic conversation situations. Prerequisite: SP261 or equivalent.

SP305 Spanish Literature in Translation I
(3,0) 3
From the Medieval period through the works of Miguel de Cervantes. The course is taught in English and the readings are in English. This course counts as humanities credit for general education requirement.

SP306 Spanish Literature in Translation II
(3,0) 3
Representative 18th, 19th and 20th century Spanish works and some representative Latin American works. The course is taught in English and the readings are in English. This course counts as humanities credit for general education requirement.

SOCIAL WORK

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

SW110 Introduction to Social Work
(3,0) 3
A general introduction and overview of the social work profession including its philosophy, values, professional roles, current trends and models in different practice settings (i.e. public welfare, child and family services, mental health, medical settings, etc.).

SW201 Communication Skills in Counseling
(2,1) 3
This course covers the essential elements of establishing a therapeutic relationship including active listening skills, empathy and confrontation. Students both explore their potential to be congruent and authentic as counselors and demonstrate counseling skills with voluntary, involuntary and crisis counselors. No prerequisite. Also listed as PY201.

SW202 Social Research Methods
(3,0) 3
Introduction to basic methods of social research. Also listed as SO202.

SW250 Social Work Practicum
(1,9-27) 3-9
This course provides a field placement opportunity for students to practice skills and use knowledge gained from courses in skill miniors. Prerequisite: Permission of instructor. (Also listed as HM250.)

SW310 Clinical Practice and Diagnosis
(3,0) 3
Student will learn skills in developing psychosocial history, treatment plans, becoming familiar with diagnostic criteria and categories, and appreciating the uses and limitations of various diagnostic schemes. Prerequisite: Senior standing or permission of instructor. Completion of PY/SW201.

SW338 Deviance
(3,0) 3
Analysis of causes and consequences of deviance and development of deviant subcultures; examination of various societal responses to control deviance and their effectiveness. Included are alcoholism, crime, mental illness and homosexuality among others. Prerequisite: Junior standing or three hours of sociology and/or human services or social work. (Also listed as SO338.)

SW341 Addiction
(3,0) 3
Study of the nature of chemical dependence with emphasis on individual, social and cultural variations of drug effects. Relationships of chemical use to the family system. Comparisons between chemical and non-chemical dependent behaviors. Prerequisite: Six hours of sociology or permission of instructor. (Also listed as SO341.)

SW344 Social Welfare Systems
(3,0) 3
Development of social welfare systems including changing programs and philosophy and interrelationships with economic, political, and family institutions; cross-cultural comparisons; current issues and problems in social welfare. Prerequisite: Junior standing or three credits in sociology. (Also listed as SO344.)

CONSTRUCTION TECHNOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

TC101 Construction I
(3,0) 3
An overview and analysis of properties, processing and applications of conventional construction materials. Wood, concrete, masonry, ferrous and nonferrous metals, glass, plastics and other materials are examined in detail. The application of building codes as they pertain to these materials will also be presented.

TC102 Construction II
(3,0) 3
Concepts in construction blueprint reading and the development of skills in reading construction drawings. The correlation of building codes and specifications to the production of working drawings. Prerequisite: TC101.

TC103 Surveying
(2,4) 3
Concepts and operation of distance and angular measurement. Use of transit and level, land description, traverse, construction and earth work calculations.

TC110 Industrial Safety
(2,0) 2
Study of occupational safety, occupational health and industrial hazard control. Focus on basic principles, concepts and techniques proven useful in reducing industrial injuries and occupational diseases. Prerequisites: None.

TC111 Small Engine Mechanics
(1,2) 2
Practical study of the operation and repair of small engines.

TC118 Drafting
(2,3) 3
Technical drawings to include instruments, lettering, geometrical construction, sketching, multiview projection, sectioning, auxiliary views, dimensioning, tolerancing, fasteners, design and working drawings, reproduction and control drawings, pictorial drawings, intersections, graphical vector analysis and graphs. Prerequisite: none.

TEACHER EDUCATION

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

TE150 Reflections on Learning and Teaching
(3,0) 3
Students will examine their experiences and assumptions as learners and teachers, contrasting them with psychological, sociological and anthropological theories about learning in and out of school.

TE250 Student Diversity and Schools
(3,0) 3
A study of the forms of diversity found among students and how these differences affect participation in schools. Schools are studied in terms of their goals, impact on students and as workplaces for teachers. Course activities include school visits and discussions of classroom teaching. Prerequisite: Sophomore standing or permission of instructor.

TE301 Students and the Contexts of Learning
(3,3) 4
A study of students and learning as they are affected by social context and sociocultural background including natural and socially constructed differences among learners. Also teaching and learning subject matter within institutional and community contexts. Includes extensive classroom observations. Prerequisite: TE150 and TE250 and admission to teacher certification program.

UNIVERSITY SEMINAR

UN101 University Seminar I: Foundations for Success
(1,0) 1
This course focuses on academic skills and critical thinking, on knowledge of the institution and the role of higher education, and on personal skills for living, which together are requisite for student success and lifelong learning. Seminar I - Foundations for Success places emphasis on incorporation into university culture, time management, use of campus resources, written and oral presentations, development of critical thinking skills, and strengthening study skills for academic success.

UN102 University Seminar II: Developing Critical Thinking
(1,0) 1
Seminar II - Developing Critical Thinking continues the goals of Seminar I while placing emphasis on the application of critical thinking skills to the academic setting. A reading anthology is used as the basis for regular written, and oral communication and a term research paper. While continuing to apply skills and techniques used in Seminar I, students additionally develop cultural literacy and incorporate greater computer usage, and explore campus organizations, community events and community service.

UN103 University Seminar III: Thinking About the Discipline
(1,0) 1

Seminar III - Thinking about the Discipline begins a more focused examination of the applications of critical thinking to the student's discipline. Each school selects a reading anthology suitable for analysis and discussion by its majors in order to examine such as current critical issues, social responsibility, ethics and cultural diversity from the perspective of the student's discipline. Continuing the activities of earlier seminars this course promotes ongoing participation in community events, application of academic success skills and writing in the discipline.

UN104 University Seminar IV: Professional Seminar
(1,0) 1

Seminar IV - Professional Seminar serves as the fourth and final in the series and focuses on introducing the student to their discipline with special emphasis on interviews with professional, examinations of career options, and overviews of the literature and research of their discipline. This course focuses attention on the skills and knowledge base of the profession, features of the work environment, development of resume and career developing activities. Activities of earlier seminars continue as students apply critical thinking skills to the examination of the current literature of their field, participate in written and oral presentations, and hear presentations from working professionals.

Distinguished Teachers

The Distinguised Teacher Award recognizes excellence in the classroom and commitment to Lake Superior State University as a whole. Nominations for the award are submitted by campus faculty, staff and students. A committee of graduating seniors with the highest grade point averages and faculty who have previously received the award determine each year's honoree. The following are recipients of this singular distinction.

1957-58	Raymond Chelberg	1983-84	Michael Flynn
1963-64	C. Ernest Kemp	1984-85	Margaret Malmberg
1971-72	Margaret Howe	1985-86	Robert Money
1972-73	David Blair	1986-87	Rosa Kavanaugh
1973-74	Gerald Samson	1987-88	Dimitri Diliani
1974-75	Thomas Mickewich	1988-89	David Behmer
1975-76	Arthur Duwe	1989-90	Susan Ratwik
1976-77	Thomas Kelly	1990-91	William Haag
1977-78	Larry Schneider	1991-92	James Madden
1978-79	Steven Person	1992-93	Sally Childs
1979-80	Bernard Arbic	1993-94	Carol Campagna
1980-81	Edeltraute Vialpando	1994-95	Madan Saluja
1981-82	Timothy Sawyer	1995-96	Carole Connaughton
1982-83	Paul Wilson		

Employee of the Year

Each year, the University community honors one recipient for two awards: Administrative/Professional Employee of the Year and Educational Support Personnel Employee of the Year. Nominations are gathered from the entire campus. The following individuals exemplify the best LSSU offers to students and the community.

	Administrative/ Professional	Educational Support Personnel
1991-92	Conrad A. Schmitigal	M. Kathy Person
1992-93	Beverly E. White	Trinda M. Pontus
1993-94	Margaret E. Olson	Jeanne E. Thompson
1994-95	Susan K. Camp	Terri D. Peller
1995-96	Robbin S. Manor	Donna M. Payment
1996-97	Karen Shackleton	Judy V. Jones

FACULTY

Allan, Thomas A., associate professor of biology/chemistry, (1990, 1996); B.A., Central Michigan University, 1973; M.A., Michigan Technological University, 1978; Ph.D., University of Maine, 1984.

Andary, Carol, associate professor and coordinator of legal assistant studies, (1984, 1993); B.S., Western Michigan University, 1977; Juris Doctor, Wayne State University, 1980.

Anderson, Colleen, assistant professor of English, (1992); B.A., State University of New York at Cortland, 1978; M.A., Catholic University of America, 1988; Ph.D., Catholic University of America, 1992.

Anleitner, Donna, assistant professor of nursing (1985); B.S.N., Indiana State University, 1971; M.S.N., Northern Illinois State University, 1976.

Arbic, Bernard J., professor of mathematics (1967, 1986); B.S., Massachusetts Institute of Technology, 1962; M.A., Bowdoin College, 1967; Ph.D., University of Wyoming, 1972.

Ayres, Jeffrey M., assistant professor of political science (1994); B.A., University of Virginia, 1987; M.A., University of Wisconsin, 1989; Ph.D., University of Wisconsin, 1994.

Back II, Richard C., assistant professor of aquatic biology (1996); B.S., Syracuse University, 1982; M.S., Clemson University, 1985; Ph.D., University of Wisconsin-Milwaukee, 1993.

Blashill, James, associate professor and coordinator of criminal justice and coordinator of Institute for Public Safety (1975, 1995); chair of the Department of Criminal Justice and Fire Science (1975) (1993): B.S., Wayne State University, 1973; M.S., Michigan State University, 1976.

Boger, Thomas, associate professor of computer science, (1981, 1991); B.S., 1973; M.S., Michigan State University, 1974.

Bolio, Lawrence A., associate professor of mechanical engineering technology (1984); B.S., Michigan Technological University, 1966 and 1975; M.A., Nortl ern Michigan University, 1979.

Brown, Lewis M., professor and coordinator of geology (1979, 1989), chair of th Department of Geology and Physics (1993); B.A., Cornell College, 1965; M.S. University of Iowa, 1967; Ph.D., University of New Mexico, 1973.

Campagna, Carol A., associate professor of nursing (1984); B.S.N., D'Youville College, 1964; M.S.N., University of Colorado, 1969.

Castner, David G., associate professor, counselor, (1978, 1979, 1993); B.S., University of Wisconsin-Stout, 1972; M.S., 1974.

Chejlava, Michael, assistant professor of chemistry, (1993); B.S., 1975, Harvey Mudd College; Ph.D., 1982, Kansas State University, Ph.D..

Childs, Sally A., professor of physical education and recreation and coordinator of recreation studies (1981, 1987, 1994); chair of the Department of Recreation Studies and Exercise Sciences (1994); B.S., Eastern Michigan University, 1971; M.S., Northern Michigan University, 1978; Ph.D., Ohio State University, 1986.

Connaughton, Carole, professor of nursing and coordinator of B.S.N. program (1984); B.S.N., Saint Mary's College, Notre Dame, 1956; M.S.N., 1967; Ph.D., Indiana University, 1974.

Crandall, Richard C., professor of sociology (1969, 1987); B.S., 1967; M.A., Central Michigan University, 1969; Ph.D., University of Michigan, 1974.

Cullen, John C., professor of Spanish and English (1967, 1985); B.A., 1963; M.A., Michigan State University, 1965; Ph.D., Interamerican University, 1973.

Delaney-Lehman, Maureen, assistant professor/librarian (1989, 1992); B.M., Western Michigan University, 1975; M.S., Michigan State University, 1980; M.L.S., University of Kentucky, 1988.

Denger, George, assistant professor of speech and forensics (1995); B.S., Eastern Michigan University, 1983; M.A., Eastern Michigan University, 1986.

Devaprasad, James, associate professor and coordinator of automated systems engineering technology (1986, 1991, 1996); chair of the Department of Automated Systems Manufacturing Technology (1994); B.E., University of Madras, India, 1983; M.S., University of New Mexico, 1986.

Dobbertin, Gerald, assistant professor of sociology (1972, 1982); B.S., Wayne State University, 1967; M.A., Central Michigan University, 1973; Ph.D., Michigan State University, 1981.

Dobbertin, Leslie, associate professor of sociology (1974, 1982, 1991); chair of the Department of Sociology (1994); B.A., Central Michigan University, 1965; M.A., Iowa State University, 1972; Ph.D., Michigan State University, 1989.

Dorrity, Daniel T., professor of history (1970, 1990); chair of the Department of Humanities and History (1994); B.A., 1966; M.A., Wayne State University, 1967; Ph.D., University of Michigan, 1973.

Duesing, Paul, associate professor of mechanical engineering technology and coordinator of Cooperative Education (1984, 1990); chair of the Department of Mechanical Engineering Technology (1994); B.S.M.E., 1971; M.S.M.E., University of Michigan, 1973.

Duesing, Sherilyn R., instructor of developmental mathematics 1994; B.S., Central Michigan University 1976.

Erkkila, John, professor of economics, and coordinator of recruitment and transfer (1990, 1996); chair of the Department of Business Administration (1994); B.S., Lake Superior State College, 1970; M.A., University of Windsor, 1971; Ph.D., The University of Western Ontario, 1987.

Evans, Barbara I., assistant professor of biology (1994); B.S., University of Ottawa, Canada, 1980; Ph.D., University of Kansas, 1986.

Fabbri, Anthony J., assistant professor of mathematics (1996); B.S., Indiana State University, 1965; M.S., Indiana State University, 1967; E.D.D., University of Louisville, 1995.

Fields, Polly Stevens, assistant professor of English (1995), B.A., Vanderbilt University, 1978; M.A., University of Mississippi, 1989; Ph.D., Louisiana State University, 1992.

Foley, Elizabeth A., assistant professor of criminal justice and coordinator of corrections (1981, 1987); B.A., Madonna College, 1969; M.A., Northern Michigan University, 1982.

Furr, Richard S., associate professor of biology (1971, 1981); A.B., Pfeiffer College, 1963; M.S., North Carolina State University, 1966; Ph.D., University of Tennessee, 1971.

Gadzinski, Eric, assistant professor of English (1995); B.A., Lafayette College, 1977; M.A., Temple University, 1990; Ph.D., Temple University, 1995.

Gaertner, Georgegeen P., associate professor of English and coordinator of writing in the disciplines (1965, 1974); B.A., Michigan State University, 1959; M.A., University of Michigan, 1963.

Gaertner, Robert, associate professor of finance (1965, 1989); B.B.A., University of Notre Dame, 1964; M.B.A., Michigan State University, 1965.

Gardiner, R. Lee, assistant professor of exercise science (1988, 1992); B.S., Grand Valley State University, 1979; M.S., Northern Michigan University, 1988.

Gerrish, Steven J., assistant professor of mechanical engineering technology (1981, 1988); B.S., Lake Superior State College, 1978; M.A., Michigan State University, 1981.

Godby, Marjorie B., assistant professor/counselor (1986, 1992); B.S., University of Minnesota, 1962; M.A., University of Michigan, 1966.

Gutowska, Janina, assistant professor of mathematics (1988); M.S. University of Lodz, Poland, 1966.

Gutowski, Mieczyslaw, associate professor of mathematics (1984, 1990); M.S., University of Lodz, 1965; Ph.D., University of Gdansk, 1973.

Haag, William, professor of bio-chemistry (1984, 1994); B.S., Loras College, 1961; M.S., 1965; Ph.D., University of Nebraska, 1971.

Halsey, Alice, associate professor of nursing (1973, 1983); B.S.N., University of Michigan, 1962; M.S.N., Wayne State University, 1977.

Hanson, Margaret R., assistant professor of nursing (1995); B.S., Madonna College, 1974; M.S., University of Michigan, 1979.

Harger, Bruce T., professor of economics (1967, 1985, 1996); department head of Business & Economics (1986-1993); dean, (1993-1996); B.A., 1966; M.A., 1967; Ph.D., Michigan State University, 1991.

Harrison, Galen H., assistant professor of mathematics (1963, 1967); B.S., 1960; M.A., Michigan Technological University, 1963.

Hayward, Pamela A., assistant professor of speech (1995); B.A., Northeastern Illinois University, 1981; M.A., University of Illinois, 1990.

Heyns, Terry L., professor of fire science (1989, 1994); A.B., Saint Louis University, 1965; M.A., University of Kansas, 1967; Ph.D., Kansas State University, 1989.

Holmes, Dennis K., assistant professor of criminal justice (1992); B.G.S., Oakland University, 1978; M.P.A., Oakland University, 1982.

Hronek, Beth, instrusctor/librarian (1994); B.S., University of Iowa, 1983; M.A., University of Tennessee, 1985; M.L.S., University of Iowa, 1990.

Hudson, John S., associate professor of accounting (1970, 1986); B.A., 1963; M.A., Michigan State University, 1965; M.B.A., Western Michigan University, 1967.

Jennings, Richard P., professor of speech and coordinator of Reader's Theater, (1970, 1990); B.A., University of Michigan, 1950; B.D., Virginia Theological Seminary, 1953; M.A., Central Michigan University, 1970.

Johnson, Gary R., professor of political science (1978, 1990); chair of the Department of Political Sciences (1994); B.A., Augustana College, 1972; M.A., 1975; Ph.D., University of Cincinnati, 1979.

Jones, Charles W., professor of chemistry (1970, 1981); A.B., Western State College of Colorado, 1954; M.S., 1957; Ph.D., Oklahoma State University, 1973.

June, Mary M., assistant professor / librarian (1988, 1993); B.A., 1978; M.L.S., University of Wisconsin-Milwaukee, 1980.

Kabke, Lynn, assistant professor of health sciences; (1991); B.S.N., Lake Superior State University, 1990; M.S.N., Northern Michigan University, 1991.

Kelso, Paul R., assistant professor of developmental math, (1993); B.S., University of Minnesota 1986; M.A., University of Minnesota 1990; Ph.D., 1993.

Ketkar, Mohan, assistant professor of electrical engineering technology, (1996); B.E., University of Poona, 1971; M.E., University of Poona, 1980; M.S., University of Wisconsin-Madison, 1982.

King, Brian C., instructor of geology and physics, (1995); B.S., University of Dayton, 1980; M.S., University of Kentucky, 1984.

Kirkpatrick, Nancy, assistant professor of biology, (1995); B.S., 1972; M.S., 1979; Ph.D., Miami University, 1993.

Land, Roger J., assistant professor of fire science, (1996); B.S., Brigham Young University, 1972; M.S., University of Utah, 1974.

Lehman, John W., professor of chemistry (1966, 1982); chair of the Department of Chemistry and Environmental Sciences (1993); B.S., McPherson College, 1960; Ph.D., University of Colorado, 1969.

Lewis, Diane K., assistant professor of nursing (1993); B.S.N., Depauw University, 1984; M.A., Wright State University, 1993.

Linderoth, Leon W., professor of English (1968); A.B., 1958; B.S., Central Michigan University, 1958; M.A., 1960; Ph.D., Florida State University, 1966.

Lundin, Jean M., associate professor of business (1991); B.S., University of Wisconsin, 1975; M.B.A., Roosevelt University, 1977; Ph.D., University of Wisconsin, 1991.

Madden, James, associate professor of criminal justice (1984, 1989); B.S., William Carey College, 1971; M.S., University of Southern Mississippi, 1975.

Madl, John T., associate professor of mechanical engineering technology (1967, 1981); B.S.M.E., 1965, M.S.M.E., Michigan Technological University, 1967.

Mahajan, Ajay M., assistant professor of engineering technology (1994); B.S., University of Roorkee, India, 1990; M.S., Tulane University, 1992; Ph.D., Tulane University, 1994.

Marinoni, Ann B., professor of business and coordinator of hospitality management (1976, 1980, 1993); B.S., Lake Superior State University, 1975; M.S., Central Michigan University, 1977; Michigan State University 1992.

Marsh, Robert J., assistant professor of production management, (1996); B.A. & B.S., University of California at Santa Barbara, (1977); M.B.A., Lake Superior State University, (1991).

McDonald, David M., professor and coordinator of electrical engineering technology (1973, 1986, 1995); chair of the Department of Electrical Engineering Technology (1994); B.S.E.E., 1969; M.S.E.E., Michigan Technological University, 1970.

McPherson, Debra, assistant professor of physical education and recreation, (1976, 1983); B.S., 1974; M.S., Northern Michigan University, 1982.

Mannesto, Jean, instructor / reading specialist, (1994); B.A., University of Michigan, 1967; M.A., Central Michigan University, 1981.

Meehan, Mary Jo, assistant professor / counselor (1983, 1987); B.S., 1977; M.A., Northern Michigan University, 1981.

Meiser, Charles W., associate professor of quantitative economics and coordinator of business data processing (1968, 1982); B.S.E.E., 1963; M.S., Purdue University, 1966.

Merkel, Dennis, associate professor of biology (1988, 1993); B.S., 1977; M.S., State University of New York-Syracuse, 1983; Ph.D., Michigan State University, 1988.

Mickewich, Thomas, professor of mathematics (1967, 1988); B.A., 1964; M.A., University of Maine, 1967.

Money, Robert M., professor of history (1969, 1976, 1993); A.B., Northern Michigan University, 1953; M.A., University of Michigan, 1958.

Moody, James W. T., professor of history (1971, 1992); B.A., Greenville College, 1959; M.A., Michigan State University, 1960.

Mugavero, Daniel C., associate professor of accounting (1976, 1991); B.A., 1966; M.B.A., Michigan State University, 1967.

Mullin, C. Randall, professor of chemistry and physics and coordinator of the planetarium (1969, 1986); B.S., St. Vincent College, 1959; Ph.D., University of Notre Dame, 1964.

Myton, David M., (1993); assistant professor of analytical chemistry; B.S., George Fox College, 1980; M.S.T., Portland State University, 1988; Ph.D., Portland State University, 1991.

Neveu, Ruth, assistant professor / librarian (1984, 1988); B.A., Lake Superior State University, 1977; M.S., University of Michigan, 1984.

Niemi, Alan D., assistant professor of computer engineering technology (1986); B.S., Lake Superior State University, 1981; M.S.E.E., Illinois Institute of Technology, 1985.

Payment, Aaron, instructor (1994); B.A., 1988; M.S., Northern Michigan University, 1991.

Person, Steven J., professor of biology (1974, 1989); B.S., 1966; M.S., Iowa State University, 1968; Ph.D., University of Alaska, 1976.

Pichot, Marcel, associate professor of French (1989, 1992); B.A., Andrews University, 1967; M.A., Western Michigan University, 1968; Ph.D., University of Michigan, 1975.

Pike, Ruth Johnston-, assistant professor of nursing (1983); B.S.N., Lake Superior State University, 1982; M.S.N., Wayne State University, 1985.

Pingatore, Diana, associate professor of English and coordinator of writing lab (1988, 1992); chair of the Department of English and Speech, (1994); B.A., Lake Superior State University, 1977; M.A., 1981; Ph.D., Michigan State University, 1987.

Qatu, Mohamad, associate professor of engineering technology (1994); B.S., Yarmouk University, Jordan, 1985; M.S. Ohio State University, 1986: Ph.D., Yarmouk University, Jordan.

Rackliffe, Gary, assistant professor of teacher education (1990, 1992); A.A.S., Ferris State University, 1976; M.A., Central Michigan University, 1977; Ph.D., Michigan State University, 1991.

Ralph, Paige H., associate professor of criminal justice (1993, 1996); B.S. Lake Superior State University, 1988; M.A., Sam Houston State University, 1989; Ph.D., Sam Houston State University, 1992.

Ratwik, Susan H., professor of psychology and coordinator of the Center for Social Research (1977, 1990); B.A., University of Minnesota, 1969; M.S., 1975; Ph.D., University of Notre Dame, 1978.

Roese, John H., associate professor of wildlife ecology and management (1990, 1995); B.S.F., Stephen F. Austin State University, 1982; M.S., 1984; Ph.D., Stephen F. Austin State University, 1989.

Ryckman, Annette J., assistant professor of marketing (1994); B.S., Eastern Michigan University, 1960; M.A., 1977; Ed.S., Michigan State University, Ph.D., 1984;

Ryckman, Lynn A., associate professor of marketing (1992); B.A., 1977; M.A., 1978; Ph.D., Michigan State University, 1982.

Rynberg, Nina Lynn, assistant professor / learning center, (1992, 1995); B.A., 1969; M.A., Central Michigan University, 1983.

Sadler, Judith, associate professor and chair, Department of Nursing, (1995); B.S., Northern Michigan University, 1971; M.S., University of Michigan 1978; Ph.D., University of Wisconsin, 1995.

Saluja, Madan, professor of management (1969, 1981); B.A., University of Delhi, 1960; LL.B., 1962; B.A., MacAlester College, 1964; M.A., 1966; Ph.D., University of Minnesota, 1977.

Sawyer, Timothy J., professor of psychology (1976, 1989); B.A., Northern Michigan University, 1972; M.A., 1974; Ph.D., University of Nevada, 1976.

Schirer, Thomas., professor of English (1984, 1987, 1993); B.A., 1971; M.A., University of California, 1976; Ph.D., FriedrichAlexander University, 1983.

Schmitigal, Linda, assistant professor of office administration (1991, 1993); B.S., Lake Superior State University, 1982; M.B.E., Central Michigan University, 1990.

Schoenemann, Shirley, associate professor and supervisor of child care center (1983, 1990, 1996), B.A., Western Michigan University, 1966; M.A. Oakland University, 1986.

Shannon, MaryAnne P., assistant professor (1991); B.S.N., University of Michigan, 1975; M.S.N., Wayne State University, 1979; A.N.A. Certified Clinical Nurse Specialist in Gerontological Nursing, 1991; Vocational Teaching Certificate-Secondary Ed., Ferris State University, 1995.

Sherman, Karl J., associate professor of accounting (1971, 1980); B.S., Northern Michigan University, 1965; M.S., Southern Illinois University, 1967; C.P.A., 1970.

Schwiderson, Keith H., assistant professor of engineering technology and coordinator of drafting design engineering technology (1977, 1985); B.S., Lake Superior State University, 1976; M.S., Northern Michigan University, 1981.

Spencer, Lester W., assistant professor of engineering technology (1977, 1983); B.S., Lake Superior State University, 1977; M.S., Northern Michigan University, 1980.

Stai, Deborah, associate professor of biology/chemistry (1991, 1995); B.S., (biology), 1974; B.S., (medical technology), 1978; M.A., Mankato State University; Ph.D., Union Institution, 1989.

Stevens, John R., associate professor of English (1967, 1983); B.A., 1958; M.A., University of Michigan, 1959.

Suggitt, Randall G., assistant professor of mathematics (1983, 1988); B.S., Lake Superior State University, 1976; M.A., University of Montana, 1979.

Suneson, Scott, assistant professor of accounting, (1996); B.S., Eastern Michigan University, 1975; B.A., Walsh College, 1981; M.B.A., Lake Superior State University, 1983.

Sutton, Trent M., assistant professor of fisheries biology, (1996); B.S., Michigan State University, 1991; M.S., Michigan Technology.

Susi II, Joseph D., instructor / athletic trainer (1992); B.A., Ohio Northern University, 1988; M.S., Indiana University, 1989.

Terwilliger, Mark G., assistant professor of mathematics and computer science (1990, 1995); chair of the Department of Mathematics (1994); B.S., Lake Superior State University, 1988; M.S., Michigan State University, 1990.

Thesing, Gary L., professor of mathematics (1971, 1981); department head of Computer/Geology/ Mathematics (1971 - 1994); B.A., St. Mary of the Plains College, 1960; M.S., University of Notre Dame, 1964; Ed.D., Oklahoma State University, 1971.

Thunderchild, Marlene C., instructor/Native American counselor (1995); B.I.S.W., Saskatchewan Indian Federated College, University of Regina, 1991; M.S.W., University of British Columbia, 1994.

Toffolo, E. Gary, professor of English (1970, 1990); B.S., Northwestern University, 1958; M.A., University of Chicago, 1961.

Tucker Jr., Houston, assistant professor of criminal justice, 1995; B.A., 1972; M.P.A., Kentucky State University, 1980, M.S., Eastern Kentucky State University, 1993;

Walworth, Maurice, assistant professor of engineering technology (1991), B.S.E.E., Michigan Technological University, 1981; M.S.E.E., 1983.

Weber, Charles L., associate professor of electrical engineering technology and coordinator of computer engineering technology (1970, 1980); B.S., 1964; M.S.E.E., Michigan Technological University, 1970.

Wilkinson, John S., professor of music and coordinator of music and cultural affairs (1976, 1989); B.M.E., 1969; M.M., University of Nebraska, 1972; D.M.A., University of Michigan, 1974.

Willey, Robert G., associate professor of social sciences, (1995); B.A., Southern Illinois University, 1963; M.S., Washington University, 1968.

Wilson, Paul W., professor of mathematics (1963, 1988); B.S., 1962; M.A., Central Michigan University, 1963.

Yanni, Stephen R., assistant professor of therapeutic recreation (1987, 1992); B.S., Lake Superior State University, 1986; M.S., Western Illinois University, 1987.

Zabelka, Richard J., professor of physics (1966, 1984); B.S., Michigan Technological University, 1956; M.S., University of California (LA), 1960; Ph.D., Purdue University, 1964.

Zimmerman, Gregory M., assistant professor of biology (1995); B.S., Ft. Hays State University, 1977; M.S., North Dakota State University, 1983; M.S. Oklahoma State University, 1981; Ph.D., Colorado State University, 1987.

EMERITI FACULTY

Anderson, Melvin L., professor of chemistry (1969-1993); B.S., 1953; M.S., Michigan Technological University, 1955; Ph.D., Michigan State University, 1965.

Anderson, Roland A., associate professor of office administration (1969-1986); B.A., Wisconsin State University-Whitewater, 1953; M.A., Northern Colorado University - Greeley, 1961.

Bruce, Russell D., professor of physical education and recreation (1976 -1987); B.A., Cornell College, 1953; M.A., University of Michigan, 1956; Ph.D., University of Wisconsin, 1966.

Carlson, Arthur F., associate professor of physics (1947-1970); B.S., University of Minnesota, 1935. (deceased)

Castor, William N., professor of political science (1971-1994); B.A., Middlebury College, 1951; M.A., Columbia University, 1952; Ph.D., University of Denver, 1975

Chandra, Purna, professor of microbiology (1967-1994); B.S., 1949; M.S., Agra University, 1951; Ph.D., Oregon State University, 1958.

Carlson, Delphine, associate professor of mathematics (1947-1969); B.A., 1934; M.A., University of Michigan, 1938. (deceased)

Cole, Wallace, associate professor of mathematics (1955-1969); B.S., 1926; M.A., University of Wisconsin, 1928. (deceased)

Cooper, Ronald R., professor of physical education (1956-1986); director of intercollegiate athletics and James Norris Physical Education Center (1976-1986); B.S., 1951; M.A., Central Michigan University, 1958.

Curtis, Robert W., professor of engineering technology (1955-1986); B.S.M.E., Michigan Technological University, 1948; B.S.Ed., Northern Michigan University, 1950; M.A., University of Michigan, 1954. (deceased)

Dahlman, Marvin, associate professor of mechanical engineering technology (1952-1985); B.S., 1947; M.S., University of Minnesota, 1952.

Duwe, Arthur E., professor of biological science (1968-1991); B.S., Alma College, 1949; M.S., Ohio State University, 1950; Ph.D., 1953. (deceased)

Flynn, Michael, professor of English (1961-1986); B.A., Central Michigan University, 1954; M.A., Northern Michigan University, 1964.

Francisco, Wayne H., assistant professor of criminal justice (1973-1983); B.S., Eastern Michigan University, 1950; M.A., 1967; M.S., Michigan State University, 1971.

Gleason, Gale R., professor of biology and department head of Biology and Chemistry (1965-1986); B.S., Central Michigan University, 1950; M.S., 1951; Ph.D., Michigan State University, 1960.

Gleason, Gilbert J., professor of biology (1961-1988); B.S., 1958; M.A., Central Michigan University, 1960.

Harris, Earle B., associate professor of English (1976-1987); A.B., University of Michigan, 1946; B.D., 1947; Th.M., Princeton Theological Seminary, 1964.

Hatfield, Kenneth G., instructor of geology (1983-1993); B.S., Michigan Technological University, 1950.

Howe, Margaret, associate professor of humanities (1969-1981); A.B., Northwestern University, 1932; M.A., Northern Michigan University, 1965.

Jemison, Eugene F., associate professor of humanities (1969-1986); B.A., Washburn University, 1946; M.F.A., Kansas City Art Institute, 1948.

Kelly, Thomas M., professor of sociology (1971-1992): B.A., St. Mary of the Lake University, 1952; S.T.L., Gregorian University, Rome, 1956; M.A., University of Notre Dame, 1964; M.Ed., Loyola University, 1979.

Kemp, C. Ernest, associate professor of geology (1944-1980); dean emeritus of Lake Superior State University; B.S., Michigan Technological University, 1949.

Marken, Marzale, associate professor of engineering technology (1955-1984); B.S., 1948; M.A., University of Minnesota, 1956. (deceased)

Matheson, John M., professor of journalism and secretary, Board of Control (1969-1984); B.A., Michigan State University, 1948; M.A., 1965; Ph.D., Southern Illinois University, 1967.

McCabe III, John C., professor of English (1970-1987); Ph.B., University of Detroit, 1947; M.F.A., Fordham University, 1948; Ph.D., Shakespeare Institute, University of Birmingham, England, 1954.

Knowles, David M., professor of geology (1969-1994); B.S., 1954; M.S., Michigan Technological University, 1955; Ph.D., Columbia University, 1967.

Knudson, Vernie A., associate professor of natural resources technology (1971-1994); B.S., Bethany College, 1954; B.S., University of Kansas, 1958; M.S., Fort Hays State College, 1959; Ph.D., Oklahoma State University, 1970.

Poisson, Joseph A., associate professor of physical education (1963-1976); S.S., Northern Michigan University, 1940; M.A., University of Michigan, 1957.

Reilly, Raymond, E., professor of biology and chemistry, (1966 - 1990); B.S., 1951; M.S., 1951; M.S., 1963; Ph.D., Michigan State University, 1970.

Sampson, Gerald, professor of mathematics (1966-1990); B.A., University of Michigan, 1952; M.A., Texas A & M University, 1955; M.S., Texas A & M University, 1966.

Sawczak, George J., assistant professor of English (1965-1982); B.A., Alliance, 1952; M.A., Kent State University, 1954.

Shouldice, Kenneth J., professor of business administration and president (1965-1982); B.S., Marquette, 1949; M.S., Northwestern, 1951; Ph.D., Iowa, 1969. (deceased)

Smith, Bernard M., professor of behavioral science (1966-1980); B.A., 1947; M.A., University of Louisville, 1949; M.A., University of Kentucky, 1956; Ph.D., Iowa, 1960. (deceased)

Smith, Bryce E., professor of biology (1970-1995); B.S., 1952, M.A., University of Michigan, 1957; Ph.D., University of Wisconsin, 1965.

Stough, Bessie, associate professor of mathematics (1947-1963); B.A., 1923; M.A., University of Michigan, 1929. (deceased)

Truckey, John, associate professor of counseling (1966-1986); B.S., 1958; M.A., Northern Michigan University, 1964.

Vialpando, Edeltraute, professor of foreign languages (1967-1988); Ph.D., Charles University, Prague, Czechoslovakia, 1944.

Ward, Louis R., professor of English (1961-1981); B.A., 1939; M.A., University of Colorado, 1940; Ph.D., Purdue University, 1959.

Wentz, Elena, assistant professor of nursing (1971-1993); B.A., Simpson College; M.S.N., Wayne State University, 1977.

Youngs, Stephen P., professor and psychometrist (1947-1968); B.S., Northern Michigan University, 1930; M.Ed., Colorado, 1941. (deceased)

ACADEMIC DEANS

ARTS, LETTERS and SOCIAL SCIENCES:

Conboy, Richard T., professor of political science and associate coordinator for policy research / Center for Social Research (1988, 1993,); dean/professor, (1994); B.A., 1967; M.P.A., University of Dayton, 1969; Ph.D., The American University, 1984.

BUSINESS: Position vacant at time of printing.

ENGINEERING and MATHEMATICS:

Adams, Raymond L., associate professor of Mechanical Engineering Technology, (1986, 1993); acting department head of Engineering Technology, (1993); dean/associate professor, (1993); B.S., 1975; M.S., Nicholls State Thibodaux, Louisiana, 1978.

HEALTH and HUMAN SERVICES:

Markstrom, Mae E., dean/professor (1968, 1981, 1992); department head of Health Sciences (1985-1993); dean, (1993); B.S., Lake Superior State University, 1970; M.S.N., Wayne State University, 1977; Ph.D., Michigan State University, 1990.

SCIENCES and NATURAL RESOURCES:

Christofferson, Jay P., dean/professor (1996); B.S., University of Utah, 1961; M.S., University of Hawaii, 1965; Ph.D., University of Hawaii, 1970.

UNIVERSITY COLLEGE:

LaVoy, John F., dean (1996); B.S., Northern Michigan University, 1977; M.A., Northern Michigan University, 1982.

ADMINISTRATIVE STAFF

Elisa Abner-Taschwer, administrative assistant, LSSU Foundation (1995); B.S., Ball State University, 1987.

Katherine A. Albrough, accountant (1989); B.S., Lake Superior State University, 1989; M.B.A., 1996.

Susan Autore, Student Health Center nurse (1990); A.D., Lake Superior State College, 1981.

Dennis Baars, head men and women's cross country coash and men's track coach (1996); B.S. Northern Michigan University, 1992; M.S. 1996.

Elsi M. Baccari, D.O., medical director of Student Health Center (1993).

Mary Baker, community coordinator of Wellness CARE Center (1989); B.S.N., St. Olaf College, 1971; M.S., Mankato State University, 1983.

M. Debra Barrett, typist/clerk, Student Health Center (1994); Lake Superior State University, (ex-1990).

Katherine M. Batho, executive secretary, Board of Trustees (1990, 1994); Muskegon Business College, 1986; A.D., Lake Superior State University, 1995.

Judy A. Bawks, secretary, **Politics & the Life Sciences**, (1991); B.A., Lake Superior State College, 1976.

Ethlene S. Becker, Food Service helper (1996); Certificate, Holmes Jr. College.

David A. Berard, assistant hockey coach (1996); B.S., Providence College, 1992.

David A. Berry, network specialist, (1991, 1992, 1995); B.S., Lake Superior State University, 1990.

Paul A. Besteman, assistant director, Physical Plant (1973, 1987); Lake Superior State College, (ex-1973).

Scott G. Borek, head hockey coach (1995, 1996); B.A., Dartmouth College, 1985.

F. John Burdett, information technology specialist (1996).

Cynthia Butcher, nurse practitioner, Wellness CARE Center (1996); B.S.N., Michigan State University, 1974; M.A., 1983; M.S.N., 1995.

Mary L. Cahill, supervisor inventory/accounts receivable/loans (1975, 1981).

Susan K. Camp, director of Continuing Education (1977, 1988, 1993, 1994, 1995); B.S., Lake Superior State College, 1985; M.B.A., 1992.

Alden E. Campbell, manager of projects/CHP (1973); B.S., Lake Superior State College, 1973.

Jennifer A. Carlo, director of Student and Residential Life (1996); B.A., Princeton University, 1989; M.A., Goddard College, 1996.

Kathleen V. Carr, computer operator (1995); B.S., Lake Superior State University, 1994.

Cheryl L. Castner, textbook services supervisor (1980); B.S., University of Wisconsin-Stout.

Dennis Choiniere, program developer (1996); B.S., St. Louis University, 1975; M.Ed., Wayne State University, 1984.

Bruce G. Clark, assistant director of Admissions (1976, 1986); B.A., Lake Superior State College, 1976.

Thomas W. Coates, auxiliary marketing specialist (1995); B.S., Lake Superior State University, 1986.

Timothy J. Coffey, director of intramural athletics/tennis coach (1994); B.S., Tennessee Technological University, 1989.

Lee D. Comer, director of Physical Plant (1996); B.S., Michigan Technological University, 1979.

Debbie L. Cook, manager of Graphics (1994); B.S.A., Kendall College of Art and Design, 1989.

Jon Coullard, mechanical technician (1996); B.S., Lake Superior State University, 1990.
Georgiana M. Cox, accountant (1979); B.S., Lake Superior State College, 1979; M.B.A., 1988.
Juliana L. Cox, accountant (1983); B.S., Lake Superior State College, 1983 and 1987.
William J. Crawford, atheletic director (1988, 1993, 1996); B.S., Western Michigan University, 1970.
Laurie A. DeNeve-Ewing, textbook assistant (1995); B.S., Lake Superior State University.
Stella R. DePlonty, registrar (1960, 1987).
Sara Devaprasad, information technology specialist (1996); B.S., Seattle Pacific University, 1990.
Wanda M. Eby, director of Purchasing (1974, 1980, 1990).
Mark W. Engle, head women's volleyball coach (1995); B.S., Grand Valley State University, 1974.
Deborah Faust, assistant director of Financial Aid (1979, 1990, 1994); A.D., Lake Superior State College, 1985.
Paul T. Fenlon, director of Career Development and Placement (1981, 1987); B.A., Western Michigan University, 1964.
Susan L. Fitzpatrick, administrative assistant, Alumni Relations (1995); B.S., Lake Superior State University, 1987.
Judy M. Flowers, secretary, Recreation Studies/Exercise Science (1995).
Kay A. Floyd, executive secretary/ administrative assistant, President's Office (1990, 1994); A.D., Lake Superior State University, 1995.
Victoria J. Fox, services coordinator, Upward Bound, (1994, 1995); B.A., Lake Superior State University, 1994.
Peggy Friedt, coordinator of payroll (1996); A.D., Lake Superior State Universi 1987.
David Gilbert, athletic equipment manager (1996); B.S., Lake Superior State University, 1996.
Roger W. Greil, Aquatic Lab manager (1989); A.D., Lake Superior State University, 1988.
Charles J. Gustafson, media specialist (1970); A.D., Lake Superior State College, 1968.
Margaret Haag, project coordinator of 4-S Science-Math Project (1995); B.A., Hamline University, 1975; B.S., Lake Superior State University, 1988; M.S., University of Minnesota, 1989.
Tim Hall, director of Foundation (1994); B.S., Lake Superior State University, 1988.
Terry Hossack, building manager/James Norris Center (1992); B.S., Lake Superior State University, 1988; M.B.A., 1992.
Cheryl Howe, exercise science laboratory technician (1995); B.S., Lake Superior State University, 1991; M.S., Ball State University, 1994.
Mary P. Jason, regional site director — Petoskey (1986, 1993, 1995); B.S., Michigan State University, 1966.
Mark A. Jastorff, director of University and Alumni Relations (1993); B.S., Black Hills State University, 1980.
Bruce R. Johnson, director of Admissions (1985, 1986); B.S., State University College, 1967; M.S., State University of New York- Buffalo, 1971.
Kristie M. Juda, administrative assistant, Employee Relations (1995, 1996); B.S., Lake Superior State University, 1996.
Robert E. Keely, production manager of Food Service (1994).
Patricia A. Kellan, coordinator of Student Health Center (1989); B.S.N., Lake Superior State University, 1989.

Nina A. Klein, director of EUP-ISD Math & Science Grant (1994), and program director of Goals 2000 Grant (1995); coordinator of Department of Education (1996). B.S., University of California, Los Angeles, 1972; M.S., California State University, 1983.

Adam D. Koivisto, Admissions officer (1995); B.S., Northern Michigan University, 1994.

John D. LaFontaine, assistant hockey coach (1995); B.S., Miami University, 1987.

Erica L. Ledy, assistant director of Athletics/women's basketball coach/senior woman athletic administrator (1990); B.S., Lake Superior State University, 1988; M.S., Northern Michigan University, 1995.

Michele M. Mackie, data/account clerk, James Norris Center (1995); A.D., Lake Superior State University.

Kay A. Makela, cashier/clerk (1995); A.D., Lake Superior State College.

Annette M. Malaski, systems analyst (1990); B.S., University of Wisconsin-Stevens Point, 1985.

Robbin S. Manor, Campus Shoppe manager (1990); Lansing Community College, (ex-1977).

Martin McDermott, assistant men's basketball coach (1996); B.B.A., University of North Dakota, 1993; M.Ed., Wayne State College, 1995.

Richard McGahey, telephone technician (1996).

Michael J. McQuade, staff photographer/writer (1994); B.S., University of Wisconsin-Madison, 1990.

Cynthia F. Merkel, systems analyst (1987, 1988, 1994); B.A., Syracuse University, 1979.

Fredrick A. Michels, professor and vice provost for information technology (1976, 1981, 1995); B.S., University of Wisconsin, 1968; M.L.S., Western Michigan University, 1971; Ed.D., 1976.

Bridget A. Miller, Food Service Helper (1995).

Linda K. Miller, administrative assistant to registrar (1969, 1987); LPN, Lake Superior State University, 1969, (ex-1987).

Christie Montgomery, regional site director — Traverse City (1996).

Barbara K. Mugavero, assistant building manager, James Norris Center (1991, 1995); B.A., Oakland University, 1968; M.A., University of Michigan, 1970.

William T. Munsell, director of Financial Aid (1967); Lake Superior State College, (ex-1968).

Heather T. Newburg, director of Learning Center (1995); B.A., Buena Vista College, 1993; M.A., Northern Michigan University, 1995.

Bradley E. Newman, engineering assistant, Physical Plant (1995); A.D., Lake Superior State University, 1995.

Beth M. Noreus, regional site director — Escanaba (1995); A.D., Bay de Noc Community College, 1992; B.S., Lake Superior State University, 1993.

Kim L. Norton, office records aide, Upward Bound (1996).

Joan E. Ojala, Food Service helper (1995).

Elizabeth Olsen, sports information/marketing director (1995, 1996); B.S., Northern Michigan University.

Scott A. Olson, network specialist (1985, 1990, 1992); Lake Superior State University, (ex-1990).

Suzette M. Olson, personnel clerk (1988, 1996); A.D., Lake Superior State College, 1986 and 1987.

Larry J. Perron, custodial operations manager (1986, 1988).

Beatrice Peters, director of Native American Center (1993) B.A., Michigan State University, 1984

Leisa A. Pingatore, Admissions officer (1995); A.D., Lake Superior State University, 1990; B.S., 1991.

Thomas A. Pink, manager of Public Relations (1989, 1993); B.A., Lake Superior State University, 1984.

Patricia Pyle, nurse practitioner of Wellness CARE Center (1996).

Denise A. Roe, Admissions officer/transfer equivalencies (1986, 1994); B.A., Lake Superior State College, 1975.

Gail G. Ruby, assistant program coordinator, School of Health & Human Services (1995); A.D., Kirtland Community College, 1974; A.D., Alpena Community College, 1981; B.S., Lake Superior State University, 1977; B.S., Northern Michigan University, 1983; M.S., University of North Texas, 1987.

George A. Rye, systems analyst (1991); B.S. Lake Superior State College, 1968.

Eva M. Ryma, professional nurse, Wellness CARE Center (1995); A.D., Lake Superior State University, 1988; B.S.N., Lake Superior State University, 1993.

Stephanie J. Sabatine, typist/clerk, Learning Center (1995); A.D., Lake Superior State University, 1995.

Susan M. Schacher, director, Interpretive Center and Educational Programming for schools (1990); B.S., Michigan State University, 1982; M.A., 1986; Ph.D., 1990.

Ray Schebel, Food Service manager (1988); B.S., Lake Superior State University, 1994.

Kahler Schuemann, residence hall director (1996); B.S., Lake Superior State University, ex. 1996.

Karen L. Shackleton, Admissions officer/media specialist (1990); B.A., University of Michigan, 1988.

Debra L. Smart, head teacher, Child Care Center (1989); B.S., Lake Superior State University, 1994.

Scott W. Smart, director of Business Operations (1988, 1993); B.S., Lake Superior State College, 1986; M.B.A., 1992.

Kelly L. Smith, regional site director — Alpena (1995); A.D., Mitchell College, 1987; B.S., Lake Superior State University, 1994.

Terry J. Smith, men's basketball coach (1988); B.S., Michigan State University, 1984.

Tom Smith, director of Food Service, and manager of Cisler Student and Conference Center (1994); A.D., Lake Superior State University, 1988.

Barbara Squier, residence hall director (1996); B.S., Lock Haven University, 1988; M.A., Indiana State University, 1996.

Jessica A. Stanaway, institutional research analyst, (1979, 1983, 1993); B.A., Lake Superior State College, 1970.

Jerry A. Stephens, operations manager (1986, 1990, 1995); B.S., Lake Superior State College, 1986.

Dennis K. Suggitt, supervisor of Pro Shop (1995); Ferris State University, (ex-1978).

Jacquey A. Swailes, executive secretary to the provost (1990).

Aaron W. Tadgerson, program coordinator (1995); B.S., Lake Superior State University, 1993.

Tim Taschwer, catering manager of Food Service.

William G. Thompson, supervisor of grounds and receiving (1979, 1987).

Earl C. Tomlinson, director of Financial Planning (1985, 1987, 1993); B.S., Ferris State University; M.A., Central Michigan University, 1975.

Peggy J. Warren, Food Service helper (1996).

Beverly E. White, director of Employee Relations/Affirmative Action Officer (1976, 1990, 1994); B.S., Lake Superior State University, 1988; M.B.A., 1996.

Patricia A. Whyte, director of Housing (1978, 1987); B.S., Lake Superior State College, 1985

Gwen M. Wilkie, assistant women's basketball coach/athletic administrative assistant (1991, 1994, 1996); B.S., Lake Superior State University, 1991.

Heidi L. Witucki, director of Upward Bound (1991); B.A., Northern Michigan University, 1982.

Jenny L. Zissler, buyer/risk manager (1978, 1991, 1995); B.S., Lake Superior State University, 1988.

Officers of Administration

Robert D. Arbuckle, president, (1992); B.S. in Education, Clarion State University, 1964; M.S. 1966; Ph.D., Penn State University, 1992.

Dora A. Bowen, vice presidence for business and financial operations (1996); B.S., University of Nevada; M.A., Michigan State University.

Thomas R. Bugbee, special assistant to the president; secretary, Board of Trustees, (1988, 1993); B.A., Michigan State University, 1973; M.A., Eastern Michigan University, 1974.

Harry E. Pike, vice president for student programs and services and associate professor (1969, 1972); B.A., University of Washington, 1957; M.A., 1959; Ph.D., Michigan State University, 1969.

David L. Toppen, executive vice president and provost and professor, (1994); B.S., Cornell College, 1965; Ph.D., University of Missouri, 1970.

Department Chairs

Manufacturing Engineering Technology — Professor James Devaprasad
Biology — Dr. Barbara Evans
Business and Economics — Dr. John Erkkila
Chemistry and Environment Science — Dr. William Haag
Criminal Justice/Fire Science — Professor James Blashill
Electrical Engineering — Professor Maurice Walworth
English and Speech — Professor Georgegeen Gaertner
General Engineering and Engineering Technology — Professor David McDonald
Geology and Physics — Dr. Lewis Brown
Humanities and History — Dr. Daniel Dorrity
Mathematics and Computer Science — Professor Mark Terwilliger
Mechanical Engineering — Professor Paul Duesing
Nursing — Dr. Judith Sadler
Political Science — Dr. Gary Johnson
Psychology — Dr. Susan Ratwik
Recreation Studies and Exercise Science — Dr. Sally Childs
Sociology — Dr. Leslie Dobbertin

Board Trustees

Lake Superior State University is governed by an eight member Board of Trustees. Appointed by the Governor and confirmed by the Michigan Senate, these volunteers serve an eight-year term.

Meetings are open to the public with times and locations posted by LSSU.

Reverend Louis C. Cappo
Marquette, 2004

Mr. C. Eugene Chang
Traverse City, 2004

Mrs. Sue Harrison
Pickford, 2002

Mr. William R. Gregory
Sault Ste. Marie, 2002

Mrs. Sigrun Kast
Bloomfield Hills, 2000

Mr. Michael McDonald
Gladstone, 2000

Mr. Devereaux Trepp
Iron Mountain, 1998

Mr. Thomas H. Weiss
Gaylord, 1998

Dr. Robert D. Arbuckle
ex-officio

Mr. Thomas Bugbee
Secretary of the Board

Advisory Committees

Business Vocational

Karen Corbiere, Sault Area High School; Cindy Dodds, Chippewa County War Memorial Hospital; Linda Harger, Michigan Employment Security Commission; Marv Henderson, Anderson Tackman Company; Daniel Hewitt, Soo Co-op Credit Union; Jack Kibble, Sault Ste. Marie Tribe of Chippewa Indians; Dave Nichols, Walmart; Trinda Pontus, LSSU ESP/MEA; Paul Schemanski, Edison Sault Electric Company; Cindy Suppa JTPA Eastern Upper Peninsula Employment and Training Consortium.

Criminal Justice

Law Enforcement Members: Scott Fitzgerald, Sault Ste. Marie; Russell Smith, Michigan State Police; Dan Frazier, Cheboygan; Ralph Boudreau, Michigan State Police; Harris Miller, Sault Ste. Marie; Ed Berkompas, Chippewa County Sheriff; Michael Roy, Alpena Community College; William Winans, Mackinaw City Police Department; Ugo Capy, Sault College.

Corrections Members: Robert LeCureux, Kinross Correctional Facility; Wayne Fortin, John Ferroni, Gary McLeod, Sault Ste. Marie Probation/Parole.

Judicial Member: Patrick Shannon, Chippewa County Prosecutor.

Federal Members: Mel Hendrickson, U.S. Customs Port Director; Robert McNamara, US Border Patrol; Bruce Wagner, U.S. Immigration.

Security/Fire Science Members: Robin Robinson, Algoma Steel Corporation; Kenneth Eagle, Sault Ste. Marie Fire Chief; Wayne Francisco, Atlanta, Michigan; David Fluke, Sault, Ontario, Fire Chief.

Engineering Industrial Advisory Board

Charles Snyder, President of Advisory Board, Delco Electronics Corporation; Frederick J. Berg, Secretary of Advisory Board, General Motors Corporation; David Allison, Dura Automotive Systems, Inc.; Paul R. Bugajski, Industrial Magnetics; Thomas Chrapkiewicz, Phillips Semiconductors; Michael G. Eckert, Fanuc Robotics; Joseph M. Giachino, Ford Motor Company; Dan Goodrich, Walbro Corporation; Dan Hochgreve, Lake Erie MEP; William Kilponen, Kilponen & Associates; Ralph Larsen, Michigan Scientific Corporation; Charles Litzner, Edison Sault Electric Company; Ernest Maas, Edison Sault Electric Company; Jeff Menosky, Michigan Scientific Corporation; Jeff Ptak, ADEPT Technology; Michael E. Rasmussen, AC Rochester Division; Russell Richmond, AC Rochester Division; Ralph S. Shoberg, R.S. Technologies; Gerald F. Stibitz, P.E., Morrison Knudsen Corporation; John Truckey, Dura Automotive Systems, Inc.; Lynette Utecht, GM Truck and Bus; Gary Walker, Graham Motor & Generator Service, Inc.; Matt Witte, Ph.D., Chrysler Corporation.

Legal Assistant Studies

Honorable Joanna Neale, Cheboygan County Probate Court; Honorable Michael MacDonald, Chippewa County District Court; Michael Mulder, President, First of America - Sault Branch; Thomas Evashevski, St. Ignace Attorney; Dennis Valkanoff, Escanaba Attorney; John D. Peacock, Sault Attorney; Patrick Shannon, Chippewa County Prosecutor; Dr. Richard T. Conboy, Dean, School of

Arts, Letters and Social Sciences; Dr. Gary R. Johnson, Faculty; Dr. Madan Saluja, Faculty; James Blashill, Faculty; Vicki Voisin, Charlevoix Legal Assistant; Christine England, Alumni; Carol S. Andary, Attorney and Program Coordinator.

Nursing

Dr. Elsi Baccari, War Memorial Hospital, Sault Ste. Marie, Michigan; Ms. Mary Baker, Wellness CARE Center, Sault Ste. Marie, Michigan; Ms. Antoinette Blunt, Victorian Order of Nurses, Sault Ste. Marie, Ontario; Director of Nursing Education, North Central Michigan College, Petoskey, Michigan; Director of Nursing, Tendercare Nursing Homes of Michigan, Sault Ste. Marie, Michigan; Ms. Nancy Figel, War Memorial Hospital, Sault Ste. Marie, Michigan; Ms. Nancy Heyns, Chippewa County Health Department, Sault Ste. Marie, Michigan; Ms. Mary Jason, LSSU Regional Center Site Coordinator, Petoskey, Michigan; Ms. Sharon Kirkpatrick, Plummer/General Hospital, Sault Ste. Marie, Ontario; Ms. Alexia Kroll, Sault Area Schools, Sault Ste. Marie, Michigan; Ms. Terry Malloy, Kinross Correctional Facility, Kinross, Michigan; Ms. Kathleen McGillis, Alpena Community College, Alpena, Michigan; Ms. Pam Porter, Northern Michigan Hospital, Petoskey, Michigan; Dr. Susan Ratwik, Lake Superior State University, Sault Ste. Marie, Michigan; Ms. Helen Ross, Group Health Centre, Sault Ste. Marie, Ontario; Ms. Rosanne Schultz, District Health Department, Alpena, Michigan; Ms. Beverly Stewart, Community Action Agency, Sault Ste. Marie, Michigan; Ms. Ruth Thesing, Sault Tribe of Chippewa Indians, Sault Ste. Marie, Michigan; Ms. Donna Tremblay, Sault College, Sault Ste. Marie, Ontario; Ms. Anna Zuccato, Algoma Health Unit, Sault Ste. Marie, Ontario.

Computer Services

Personal computer laboratories are located throughout campus. The University's computer laboratory in the Center for Applied Sciences and Engineering Technology is equipped with DEC VAX terminals and IBM compatible PCs supporting computer scientific studies. These studies include programming languages, database management, special applications, word processing, software publishing and many other areas.

The Kenneth J. Shouldice Library has one large computer classroom that supports operating systems and applications software using a networked environment. Osborn and Brady Halls are equipped with computers available for your use.

The Shouldice Library provides an on-line public access catalog, periodical reference resources and information databases resident on CD-ROM. Students also network with other Upper Peninsula libraries through the NOTIS system.

Phonemail electronic voice message service is available to instructors, student residents and administrative personnel. Phonemail services include off campus access.

Library

The Kenneth J. Shouldice Library provides a variety of resources and services. Home to more than 128,000 volumes of books, 16,000 bound volumes of periodicals, 90,000 microforms, and over 65,000 paper government documents, the Shouldice Library is the heart of Lake Superior State University.

The current subscription list exceeds 1,000 individual titles including electronic full text journals and newspapers. The library has been a depository of select U.S. Government publications since 1982. The Audio-Visual Center, on the main floor of the library, maintains a diverse collection of cassettes, filmstrips, games, kits, 16mm films, slides and video tapes. A closed-circuit television system transmits many of these materials to campus classrooms. To assist faculty and students in obtaining materials from other libraries, the library maintains an interlibrary loan service through OCLC, a computer service linked to libraries with access to more than 19 million books and periodicals.

Library facilities include stacks open to all faculty and students, group study areas, internet access, CD-ROMs, microform readers and printers, photocopy machines, audio-visual equipment, equipment for making transparencies, and other materials.

Reference librarians offer personal guidance in the use of the computerized catalog, indexes and abstracts and bibliographies. A handbook of library services and bibliographies are published by the library to assist faculty and students. Library tours and lectures on using our services are available.

The library is a member of an Upper Peninsula-wide consortium of 105 libraries.

Staff includes a director, Dr. Fredrick Michels; librarians Ruth Neveu, Mary June, Maureen Delaney-Lehman, Beth Hronek; and audiovisual specialist, Charles Gustafson.

EQUAL OPPORTUNITY

Notice of Lake Superior State University's policy of compliance with federal and state law

Policy

The University is an equal opportunity employer and educator and prohibits discrimination, including harassment, on the basis of race, color, national origin or ancestry, gender, age, disability, religion, height, weight, sexual preference, marital status, or veteran status.

In carrying out this policy, the University complies with all federal and state laws and regulations prohibiting discrimination including:

Executive Order 11246, the Elliott-Larsen Civil Rights Act of 1976, Title VI of the Civil Rights Act of 1964, The Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972, and the Pregnancy Discrimination Act of 1978, Title IX of the Education Amendments of 1972, Titles VII and VIII of the Public Health Service Act, Age Discrimination in Employment Act of 1967, Sections 503 and 504 of the Rehabilitation Act of 1973, Veteran's Assistance Act of 1972, and Title II of the Americans with Disabilities Act of 1990.

Sexual Harassment

The University is committed to a policy of nondiscrimination on the basis of gender. Discrimination because of gender includes sexual harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct or communication of a sexual nature when:

i. Submission to such conduct or communication is made a term or condition either explicitly or implicitly to obtain employment, public accommodations or public services, education, or housing;

ii. Submission to or rejection of such conduct or communication by an individual is used as a factor in decisions affecting such individual's employment, public accommodations or public services, education, or housing; or

iii. Such conduct or communication has the purpose or effect of substantially interfering with an individual's employment, public accommodations or public services, education, or housing environment.

The University is committed to the protection of the rights of all individuals and to the elimination of barriers that would prevent individuals from realizing their highest potential of human excellence. Sexual harassment is a particularly noxious form of discrimination that interferes with these goals and commitments, and is difficult to combat due to the intimidation and destruction of self esteem of its victims.

Grievance Officer

The Equal Employment Opportunity Officer/Affirmative Action Officer (EEO Officer) is the designated grievance officer for discrimination complaints. If any person believes that he or she has been subjected to discrimination, including harassment by unlawful and unacceptable expressions, acts, attitudes and/or behaviors based on race, color, national origin or ancestry, gender, age, disability, religion, height, weight, sexual preference, marital status, or veteran status, he or she should contact Ms. Beverly White, EEO Officer, Lake Superior State University Administration Building, Sault Ste. Marie, Michigan 49783 (906-635-2697) within sixty (60) working days of the action of which the person complains.

Process

1. The University encourages all individuals to promptly report instances of discrimination and discriminatory harassment. Once the University has been informed of such behavior, it will take timely and appropriate steps to investigate the problem. At any step of the grievance process, time schedules as outlined in the process may be extended by mutual agreement in writing.

2. With the Grievance Officer, individuals may discuss concerns they may have regarding possible discrimination or harassment to learn what options are available.
3. Nonretaliation: The University not only prohibits discrimination, including harassment, but also strictly prohibits any retaliation against any individual, who, in good faith, has registered a complaint under this procedure. Any supervisor, agent, or employee of the University who, after investigation, has been determined to have retaliated against any individual for using the complaint procedure in this policy, will be subject to appropriate discipline up to and including immediate discharge. If an individual believes he or she has been retaliated against for exercising his or her rights under this policy, the individual should use this complaint procedure.
4. All matters discussed in this process will be kept as confidential as possible.
5. If an individual is dissatisfied with the University's investigation process or resolution, he or she may file complaints of illegal discrimination on the basis of gender (Title IX and Title VI) or disability (Section 504 and Title II of the ADA) with the Office for Civil Rights, U.S. Department of Education, Chicago, IL 60605. A Title IX, Title VI, Section 504, or Title II ADA complaint must be filed in writing with the Office for Civil Rights no later than 180 days after the occurrence of the possible discrimination.
6. Individuals have the right under the law to seek remedies from the Michigan Department of Civil Rights, the Equal Employment Opportunity Commission, the Office for Civil Rights, U.S. Department of Education or by court action at the same time a grievance is filed under the University's procedure, during or after the use of the grievance process, or without using the grievance process at all.

STEP 1:
Informal Complaint

Any individual (complainant) with a discrimination or harassment complaint, may contact the Grievance Officer in person.

The Grievance Officer will speak with the complainant and try to resolve the matter on an informal basis. At Step 1, all information will be kept confidential to the extent possible.

STEP 2:
Formal Complaint

If the problem cannot be resolved at Step 1 within five (5) working days from the date of first contact with the Grievance Officer, the complainant may submit a written complaint on a form provided by the Grievance Officer. The Grievance Officer will help the complainant complete the form if the complainant requests.

Within five (5) working days of the receipt of the written complaint, the Grievance Officer will send a Notice of Complaint, a copy of the complaint form, a response form and a copy of this procedure to the respondent. The respondent will submit the completed response form within five (5) working days from the date the complaint is received by the respondent.

The Grievance Officer will conduct an investigation. The investigation should be completed within twenty (20) working days after receipt of the response. If the complaint is against the University as the Employer, the Grievance Officer will have thirty (30) days from the receipt of the written complaint to investigate the matter.

Within ten (10) working days of completion of the investigation, the Grievance Officer will issue to the complainant and to the respondent a written Determination stating whether the allegations of the complaint are true and any remedial action recommended.

At Step 2, information will be kept confidential to the extent possible.

STEP 3:
Hearing

If either the complainant or the respondent is dissatisfied with the Grievance Officer's determination, he or she may request that the matter be referred to a Hearing Panel for a

hearing by submitting the form obtained from the Grievance Officer. The request for hearing must be submitted in writing to the Grievance Officer within five (5) working days after receipt of the Determination.

The President will appoint a permanent Hearing Panel composed of three members including, if possible, at least one female and one minority member. The vice president for business and financial operations will be the chairperson and will conduct the hearing.

The Grievance Officer will send a Notice of Hearing and a copy of the Request for Hearing to the complainant, respondent (if any), and Hearing Panel, scheduling the hearing within fifteen (15) working days, unless the Panel Chairperson provides otherwise and so notifies those involved.

At the hearing, the complainant and respondent will be allowed to give their own testimony, present the testimony of witnesses, documentary evidence or other evidence relevant to the proceedings and cross-examine the other party's witnesses. The complainant and respondent may have an attorney or other advisor present. The Grievance Officer will present the findings of the investigation conducted at Step 2 and may present witnesses, if appropriate. To ensure the privacy of those involved, witnesses (other than the complainant and respondent) will be allowed in the hearing room only during their testimony. At the Chairperson's discretion, the hearing may be recorded.

Within fifteen (15) working days after completion of the hearing, the Chairperson will issue the Decision and recommended order of the Hearing Panel. The Decision will be mailed to the complainant and respondent with a copy to the Grievance Officer. The Chairperson will implement any action recommended by the Panel.

STEP 4:
Appeal

The decision of the Hearing Panel will be final and binding. If grievants wish to pursue the matter further, they may file with the outside agencies listed in Policy section, No. 5. and 6.

Section 5.02 of the by-laws of the Board of Trustees, approved July 24, 1989, will not be invoked for grievances submitted for settlement under this procedure.

1996-97 University Calendar

FALL SEMESTER • 1996

	SEPTEMBER
Instruction Begins	4, Wed. 8:00 a.m.
Final day to add classes	11, Wed., 5:00 p.m.
	OCTOBER
Canadian Thanksgiving	14
Final day to drop classes	29, 5:00 p.m.
	NOVEMBER
Thanksgiving recess	26, Tues., 10 p.m.
	DECEMBER
Classes resume	2, Mon.
Spring Semester Scheduling and Registration	2-5
Spring Semester Tuition Payment	2- Jan. 14, 3:00 p.m.
Classes end	13, Fri.
Final Examinations	16-20, Mon.-Fri.
Semester Ends	20, Fri. 6 p.m.

SPRING SEMESTER • 1997

	JANUARY
Instruction Begins	13, Mon.
Final day to add classes	20, Mon.
	FEBRUARY
Spring break begins	28, Fri., 10 p.m.
	MARCH
Classes resume	10, Mon.
Final day to drop classes	14, Fri, 5:00 p.m.
Fall Semester Scheduling and Registration	31-April 3
	APRIL
Classes end	25, Fri.
Final Examinations	28-May 2, Mon.-Fri., 6 p.m.
	MAY
Semester Ends	2, Fri., 6 p.m.
Commencement	3, Sat.

SUMMER SEMESTER • 1997

	MARCH/APRIL/MAY
Scheduling of Classes	March 31-April 3
Registration, tuition payment	Begins April 7
Instruction Begins for 4 and 12 week classes	May 12
	JUNE
Instructio Begins for 8 week classes	June 9
	AUGUST
Semester Ends	5

Dates subject to change.

1997-98 University Calendar

FALL SEMESTER • 1997

	SEPTEMBER
Instruction Begins	3, Wed. 8:00 a.m.
Final day to add classes	10, Wed., 5:00 p.m.
	OCTOBER
Canadian Thanksgiving	13
Final day to drop classes	28, 5:00 p.m.
	NOVEMBER
Thanksgiving recess	25, Tues., 10 p.m.
	DECEMBER
Classes resume	1, Mon.
Spring Semester Scheduling and Registration	1-4
Spring Semester Tuitio Payment	1-Jan. 13, 3:00 p.m.
Classes end	12, Fri.
Final Examinations	15-19, Mon.-Fri.
Semester Ends	19, Fri. 6 p.m.

SPRING SEMESTER • 1998

	JANUARY
Instruction Begins	12, Mon.
Final day to add classes	19, Mon.
	FEBRUARY
Spring break begins	27, Fri., 10 p.m.
	MARCH
Classes resume	9, Mon.
Final day to drop classes	13, Fri, 5:00 p.m.
Fall Semester Scheduling and Registration	30-April 2
	APRIL/MAY
Classes end	24, Fri.
Final Examinations	Apr. 27-May 2, Mon.-Fri.
Semester Ends	May 1, Fri., 6 p.m.
Commencement	2, Sat.

SUMMER SEMESTER • 1998

	MARCH/APRIL/MAY
Scheduling of Classes	March 30-April 2
Registration, tuition payment begins	April 6
Instruction Begins for 4 and 12 week classes	May 11
	JUNE
Instruction Begins for 8 week classes	June 8
	AUGUST
Semester Ends	4

Dates subject to change.

INDEX

A

B

C

D

E

F

G

H

I

S

T

U

V

W

Vision Statement

The vision of Lake Superior State University is to provide the highest quality personal educational experience for students in the State of Michigan and beyond.

Our vision is to create and maintain a welcoming and personal environment for students, employees, alumni, and visitors from diverse backgrounds—to be a catalyst for individual and professional growth within an international setting.

Our vision is to effectively serve the needs of the region while fulfilling the University's fundamental educational mission.

Mission Statement

Lake Superior State University is a co-educational, public institution that recognizes as its primary mission the offering of challenging undergraduate programs and services to students and other constituencies from its region and from the rest of Michigan, Northern Ontario and the near Midwest.

Lake Superior State University accomplishes its mission by presenting a personal approach to education through a small, collegial and diverse community in which all its constituencies share in the teaching, research, and regional service activities of the institution. In this supportive environment, students, staff, faculty and administrators demonstrate high regard for one another as valued members of the community, thus providing opportunities for emotional and social maturation as well as intellectual growth.

Every educational program at Lake Superior State University acknowledges its commitment to an integrated relationship between the professional/technical and liberal arts fields. That relationship fosters the development of students as contributing citizens, viable professionals and fulfilled, caring individuals. The University's international setting complements its efforts to present unique educational experiences, expand students' perspectives, and foster their ability critically evaluate ideas and information.

Goals of the University

Goal Number I

To develop and provide academic programs in the liberal arts and in technical and professional education that demonstrate excellence and relevance for the students served by the University.

Goal Number II

To provide services and programming for students that will complement their educational experiences and prepare them to live and work in the 21st century.

Goal Number III

To offer a holistic, caring, and supportive environment for all learners.

Goal Number IV

To enhance the University's efficiency and effectiveness in order to help fulfill its vision and mission.


Lake Superior State University
650 W. Easterday Ave.
Sault Ste. Marie, Michigan 49783

1-888-800-LSSU (Toll-free U.S. and Canada)
1-906-635-2231 (All Others)
1-906-635-6669 (Fax)
admissions@lakers.lssu.edu (Internet)
http://www.lssu.edu (World Wide Web site)