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How to use this Catalog ...

For further information on each degree offered, please note the top of each degree page. There is a page number annotated for further reference.

***visit us at
www.lssu.edu***

About this Catalog...

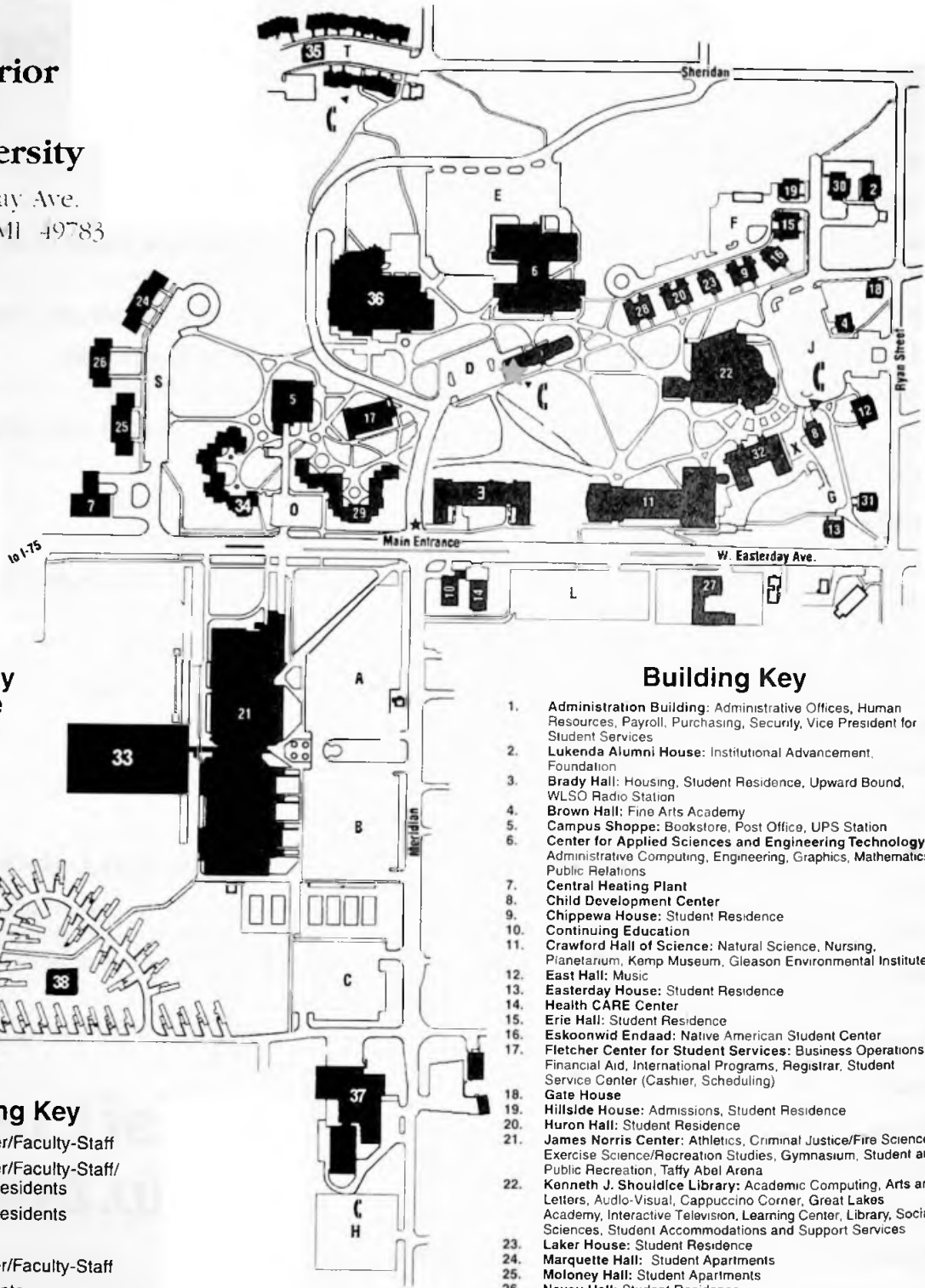
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Lake Superior State University

650 W. Easterday Ave.
Sault Ste. Marie, MI 49783



Building Key

1. **Administration Building:** Administrative Offices, Human Resources, Payroll, Purchasing, Security, Vice President for Student Services
2. **Lukenda Alumni House:** Institutional Advancement, Foundation
3. **Brady Hall:** Housing, Student Residence, Upward Bound, WLSO Radio Station
4. **Brown Hall:** Fine Arts Academy
5. **Campus Shoppe:** Bookstore, Post Office, UPS Station
6. **Center for Applied Sciences and Engineering Technology:** Administrative Computing, Engineering, Graphics, Mathematics, Public Relations
7. **Central Heating Plant**
8. **Child Development Center**
9. **Chippewa House:** Student Residence
10. **Continuing Education**
11. **Crawford Hall of Science:** Natural Science, Nursing, Planetarium, Kemp Museum, Gleason Environmental Institute
12. **East Hall:** Music
13. **Easterday House:** Student Residence
14. **Health CARE Center**
15. **Erie Hall:** Student Residence
16. **Eskoonwid Eendaad:** Native American Student Center
17. **Fletcher Center for Student Services:** Business Operations, Financial Aid, International Programs, Registrar, Student Service Center (Cashier, Scheduling)
18. **Gate House**
19. **Hillside House:** Admissions, Student Residence
20. **Huron Hall:** Student Residence
21. **James Norris Center:** Athletics, Criminal Justice/Fire Science, Exercise Science/Recreation Studies, Gymnasium, Student and Public Recreation, Taffy Abel Arena
22. **Kenneth J. Shouldice Library:** Academic Computing, Arts and Letters, Audio-Visual, Cappuccino Corner, Great Lakes Academy, Interactive Television, Learning Center, Library, Social Sciences, Student Accommodations and Support Services
23. **Laker House:** Student Residence
24. **Marquette Hall:** Student Apartments
25. **Moloney Hall:** Student Apartments
26. **Neveu Hall:** Student Residence
27. **Newman Center**
28. **Ontario Hall:** Honors Program, Student Residence
29. **Osborn Hall:** Student Residence
30. **President's Residence**
31. **Ryan House:** Student Residence
32. **South Hall:** Business and Economics, Career and Employment Services/Cooperative Education Services, Counseling and Testing, Education, Elementary and Secondary Education
33. **Robert Arbuckle Student Activity Center:** Track, Exercise Center
34. **The Village:** Senter, Chelberg, Kemp and Youngs Houses — Student Residence
35. **Townhouses:** Student Residence
36. **Walker Clesler Student and Conference Center:** Catering, Compass (student newspaper), Conference Rooms, Corner Pocket, Food Services, Gallery, ID Office, Quarterdeck, Student and Residential Life, Student Government, Student Lounge and Game Room
37. **Leno A. Pianosi Maintenance Center**
38. **Blair-Hastings Mobile Home Park**

Parking Key

- A Underclass Commuter/Faculty-Staff
- B Underclass Commuter/Faculty-Staff/Osborn and Village Residents
- C Osborn and Village Residents
- D Visitor Parking
- E Upperclass Commuter/Faculty-Staff
- F University Row Students
- G Easterday and Ryan House Residents
- H Brady Hall Residents
- J Faculty-Staff/Commuter Students
- L Upperclass Commuter/Faculty-Staff
- N Open Commuter Parking
- O Osborn and Village Residents
- S Moloney, Neveu and Marquette Hall Residents
- T Townhouse Residents
- X 30-Minute Parking

NO PARKING ON ANY UNIVERSITY DRIVE.

Welcome to Lake Superior State University



At Lake Superior State University, from the day you enroll until the day you graduate, we will do everything possible to ensure your success.

Individual support and personal attention are hallmarks of a Lake State education. Here, you will experience the excitement of learning by interacting with your professors in and out of the classroom. Student clubs, organizations, and a variety of events and activities will continue your learning, get you involved in the campus, and sharpen your leadership skills. You can make a difference at Lake State, and Lake State will make a difference in you. Here, you can realize your full potential.

We offer outstanding academic programs and the opportunity to work and study with talented and dedicated faculty and staff. Laker athletic programs, including NCAA Division I hockey, are always exciting. Our historic, beautiful, and safe campus provides a wonderful environment in which to live, learn, and prepare for your future.

Our graduates are successful engineers, teachers, lawyers, scientists and doctors. Some work in business, criminal justice, fire sciences, fisheries and wildlife management, and recreation. Many graduates pursue exciting employment options in the liberal arts and sciences. All are well prepared to meet the challenges of the decades ahead.

You and your future can come together at Lake Superior State University. We look forward to helping you realize your dreams and achieve your goals. When you are successful, then we have been, too.

Sincerely yours,

A handwritten signature in cursive script that reads "Betty J. Youngblood".

Betty J. Youngblood
President

Lake Superior State University

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 to 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.

The Vision Statement, Mission Statement and Goals of the University were adopted by the Board of Trustees May 13, 1994.

Code of Ethics

Preamble

We believe in a student-centered educational environment which is personal, natural and superior. These themes permeate the vision and mission statements of Lake Superior State University and are embodied in the principles of our Code of Ethics.

Code of Ethics

- We value a personal approach to education which provides the student access to faculty and staff — education provided in a small collegial atmosphere.
- We value our high quality academic programs which provide practical, technical education with the liberal arts tradition.
- We value a supportive, caring environment exemplified by mutual trust and respect and where each individual has worth through a holistic, student-centered focus. We respect not only the rights but the feelings of others.
- We value the exploration of new paradigms and the creative energy needed to stay at the forefront of knowledge.
- We value systematic assessment of all aspects of the University's operation and constructive improvements based on these evaluations.
- We value our public service role. "Enter to learn, go forth to serve" is a traditional motto at Lake Superior State University.
- We value our collaborative partnerships characterized by high ethical standards with international colleagues, businesses, other educational institutions, community organizations, regional contacts and governmental entities.
- We value our unique geographical setting with its natural beauty and its international focus. We value the educational opportunities which are provided in a safer environment. We value the University's physical plant with its historical buildings which are both state and national treasures.
- We value a work ethic which emphasizes productive time-on-task, diligence, ethical behavior and responsibility in the student's personal development.
- We value our extracurricular, co-curricular programs and activities which contribute to the students' personal and professional growth.
- We value an environment which celebrates diversity and focuses on the value of each individual's contribution to the general welfare.
- We value the alumni and friends of the University who provide inspiration, loyalty and support.
- We value decisions which are in the best interests of the University and its students.

A Look at LSSU

Accreditation

Lake Superior State University is accredited by the following agencies:

- North Central Association of Colleges and Schools, Commission on Institutions of Higher Education, 30 North LaSalle Street, Suite 2400, Chicago, Illinois 60602-2504. Phone: 312-263-0456; 800-621-7440. Fax: 312-263-7462; Internet: Info@ncacihe.org
- National League for Nursing Accrediting Commission, 61 Broadway - 33rd Floor, New York, NY 10006. Phone: 212-363-5555, ext. 153. Fax: 212-812-0390. www.nlnac.org
- Council on Medical Education and Hospitals of the American Medical Association, 2450 North Street NW, Washington, DC 20037-1126. Phone: 202-828-0400. Fax: 202-828-1123/1125. www.aame.org
- The manufacturing engineering technology bachelor's program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), and the electrical and mechanical engineering bachelor's programs are accredited by the Engineering Accreditation Commission (EAC) arm of ABET. EAC and TAC of ABET are at 111 Market Place, Suite 1050, Baltimore, Maryland. Phone: 410-347-7700
- International Fire Service Accreditation Congress, 1700 West Tyler, Oklahoma State University, Stillwater, OK 74078. Phone: 405-744-8303, in the bachelor of science for fire science

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 located at the beginning of Interstate 75 which ends in the Florida Keys.

The campus served as Ft. Brady starting in 1894 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 arrived for LSSU

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 272 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 (98,000) allows for an international flavor abounding with the opportunities of a city, and the safety and comfort of a small town.



Programs

Master's Degree

Business Administration (*phased out by August 2003*)

Post-Baccalaureate Certificate

Legal Assistant Studies

Bachelor's Degrees (four-year programs)

Accounting

*Public Accounting • Industrial/Managerial
Data Processing and Accounting • 150-Hour Program*

Athletic Training

Biology

Botany • Ecology • General

Pre-Professional

Pre-Dentistry • Pre-Medicine • Pre-Optometry

Pre-Pharmacy • Pre-Veterinary Medicine

Zoology

Business Administration-Business Education

Business Administration-International Business

Business Administration-Management

Business Administration-Marketing

Chemistry

Pre-professional

Clinical Laboratory Science

Computer and Mathematical Science

Computer Engineering

Robotics and Automation

Computer Networking

Computer Science

Criminal Justice

Corrections • Criminalistics (MCOLES certified)

Generalist • Law Enforcement (MCOLES certified)

Loss Control • Public Safety (MCOLES certified)

Early Childhood Education

Electrical Engineering

Digital Systems • Robotics and Automation • Electrical-Mechanical

Elementary Education*

Biology • English Language and Literature • French Studies

History • Mathematics • Psychology • Social Studies • Sociology

Engineering Management

English Language and Literature

Environmental Chemistry

Environmental Health

Environmental Science

Exercise Science

Finance and Economics

Fine Arts Studies

Fire Science

Engineering Technology • Generalist • Hazardous Materials

Fisheries and Wildlife Management

Fisheries Management • Wildlife Management

French Studies

Geology

Environmental Geology

History

Human Services

Individualized Studies

Legal Assistant Studies

Legal Administration • Criminal Law • Personal Injury

Labor Law • Legislative/Constitutional Law

Liberal Studies

Manufacturing Engineering Technology

Robotics and Automation

Mathematics

Actuarial and Business Applications

Mechanical Engineering

Chemistry and Environment • Mechanical Design

Robotics and Automation

Nursing

Pre-licensure Program • Post-licensure Completion Program

Political Science

General • Pre-Law • Public Administration

Psychology

Recreation Management

Parks and Recreation Management

Secondary Education*

Biology • Business Administration-Business Education

Chemistry • Computer Science

English Language and Literature • Environmental Science

French Studies • Geology • History • Mathematics

Political Science • Psychology • Social Studies • Sociology

Social Science

Sociology

Therapeutic Recreation

Associate's Degrees

(two-year programs)

Business Administration

Chemical Technology

Chemistry

Computer Science

Construction Technology

Criminal Justice

Corrections • Law Enforcement

Early Childhood Education

Fire Science

General Engineering

General Engineering Technology

Health Care Provider

Health Fitness Specialist

Internet Network Specialist

Legal Assistant Studies

Liberal Arts

Machine Tool Technology

Manufacturing Engineering Technology

Natural Resources Technology

Office Administration

Paramedic Technology

Personal Computer Specialist

Skilled Trade Occupations

Substance Abuse Prevention and Treatment

Technical Accounting

Telecommunications Engineering Technology

Certificates (one-year programs)

Information Processing

International Studies

Paramedic Training

Personal Computer Specialist

Practical Nursing

**Students in these programs complete an LSSU academic major, requisite teacher education courses and a fifth-year teaching internship.*

Expectations for Student Learning

Lake Superior State University utilizes a Student Academic Achievement Plan developed by the faculty to enhance continuous quality improvement and to meet the Assessment Initiative of the Commission on Institutions of Higher Education, North Central Association of Colleges and

Schools. The intent of this plan is to document student learning at Lake Superior State University both in the major program and across the general education requirements. This continuous evaluation process works to assure high quality teaching and effective student learning. The faculty at Lake Superior State University have collectively agreed upon the characteristics of the educated person the institution hopes to graduate and have identified outcomes that can be used to document these attributes. The following are areas that the faculty have deemed essential to a liberal education and have value for the students in their lives as responsible citizens: communication skills, mathematics, computer literacy, critical thinking, ethics, aesthetics, cultural diversity, and science and technology. Students who complete the general education courses at Lake Superior State University will be able to demonstrate attributes of the general education outcomes.

Students attending Lake Superior State University can expect commitment by the University to document and enhance student learning. Through the assessment process, the University demonstrates its commitment to improving student learning and ensures that when students graduate they have attained specific attributes and abilities.

Lake Superior State University expects a commitment on the part of its students to actively participate in the learning process.



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 before 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: Academic units, each administered by a "chair" and offering courses in one or more related disciplines.

Discipline: Group of related courses, such as mathematics.

Elective: Course distinguished from required course. You select 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 (nine credits for graduate students).

General Education Requirements: Courses you must take in addition to your major 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 numbered 100 and above.

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 (less than nine if you are a graduate student).

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. Failed courses must be repeated.

Semester: Sometimes called term: See academic year.

Term: Sometimes called semester: See academic year.

Transcript: Official record of your coursework maintained by LSSU Center for Student Services.

Transcript, Official: Mailed directly from principal's or registrar's office of issuing institution to LSSU Registrar's 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

Please familiarize yourself with the academic policies described in this catalog. They will help you obtain your educational objectives.

Faculty advisors, staff and administration will also help you negotiate your way through these policies — seek their advice whenever you have questions!

Student Classifications

0 to 25 credits = freshman

26 to 55 credits = sophomore

56 to 87 credits = junior

88+ = senior

The Academic Year

Lake Superior State University operates on a semester system. There are two regular 15-week semesters (fall and spring) which begin in August or September and end in April or May. The summer semester consists of classes offered in two six-week sessions, or one 12-week session. Starting and ending dates are listed on page 357 of this catalog.

Academic Credit

One credit is earned after completing 15 hours of classroom instruction in lecture/recitation courses. For example, a three-credit course might be scheduled 9-9:50 a.m. Monday, Wednesday and Friday for 15 weeks plus one week for exams. Laboratory classes, field work or other non-lecture classes meet for more than one hour a week per credit.

You should expect to spend two hours of study or class preparation for each hour spent in class.

Sixteen credits are the average load of full-time students. A minimum of 124 credits is required for all baccalaureate degrees; a minimum of 62 hours is required for an associate's degree.

Student Curriculum Choice and Advising

When you apply for admission, you are asked to declare a major. The major you declare will deter-

mine which major department you are in and the academic advisor assigned to you. Please get to know your advisor well and meet with him/her often to get help in class selection, degree progress and career advice. 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.

If you are unsure of your major, you will be assigned to the Liberal Arts major and the advisor assigned to you will be a Liberal Arts faculty member. The Learning Center and the Counseling Center can also provide you with major advice and counseling.

If you are provisionally admitted to Lake Superior State University, an academic advisor from the Learning Center is assigned. You will keep this advisor until your admission status changes and you are admitted to your full-time major program.

Semester Course Selection

Before the end of each semester, you must sign up for courses for the next semester. One to two weeks before scheduling, schedule booklets listing the courses, times, dates and locations will be available in departmental offices, the Center for Student Services and other locations around campus. You need to pick up a schedule booklet, read the instructions for scheduling and meet with your advisor to select courses for the next semester.

You must sign up for classes for the semester in which you will be doing the actual work.

Please read the schedule booklet carefully as it has dates for scheduling according to class level, dates for tuition payments, and information regarding prerequisites, corequisites and other course requirements.

It is your responsibility to ensure that the classes you take count toward your degree program. You may, however, be required to take remedial courses (course numbers beginning with "0", such as MA081), which will not count toward graduation.

Test Scores: When you apply for admission, you will send your ACT score to Lake Superior State University. Your score determines the level of English, math and reading classes into which you will be placed. If you have been out of high school more than 26 months and have not taken the ACT, you can take placement tests at the Testing/Counseling Center at Lake State to determine your placement in English, math and reading.

Maximum credit load: You may carry up to 20 credits per semester. You may take more credits if you have a 3.00 GPA or higher and have written approval from the dean of your school. Students on academic probation should not take more than 15 credits.

Prerequisites: Many courses require that you complete English, math, reading or other preliminary classes before signing up to take these courses. If you have not met the prerequisite, you may be dropped from the class during the regular drop period with an *N* grade or not allowed to sign up for the class. Some courses require that you earn a *C* or better in prerequisite courses before scheduling for the next course. Exceptions may be made only by the dean of your college or the instructor of the subsequent class.

Repeats: You may repeat a class in which you earn a grade other than "*W*" or "*N*" only twice without

special permission and only under the following conditions:

1. Courses transferred from other institutions are included in this policy.
2. Both the original and repeat grades will show on the transcript, but hours earned toward graduation will only count once.
3. For the purpose of calculating the cumulative grade point average, only the grade of the last attempt will be used, if the last class was taken at LSSU. If you transfer in a class to repeat a class from LSSU, the LSSU grade will be removed from your grade point average.
4. To repeat a course more than twice, the student must attain the permission of the course instructor and the dean of the college offering that course. Permission is granted only under exceptional circumstances.

When repeating a course, you should check the R (repeat) column of the Course Registration Form. This policy began fall 2001 for all new students either as transfer or new freshman.

Failed Classes: If you fail a class required for your degree program, you must repeat the class and receive a passing grade. If the failed class is no longer offered because of program changes and/or course deletions, the academic dean can substitute another similar class.

Drop/add period: You may change your class schedule during the first six (6) days of each semester. Courses you drop during the drop/add period will not appear on your permanent record. You must get an instructor's signature to schedule a course that is full or to waive a prerequisite requirement.

Your add or withdrawal from a course is not officially complete

Grades and Grade Points

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

until the appropriate form is completed in the Center for Student Services. It's a good idea to retain the official receipt upon completion of any add or drop.

Late adds: If you wish to add a class after the six-day drop/add period, you must first get a Late Add Form from the Registrar's Office, and then get the instructor's signature. Return your Late Add Form to the Registrar's Office.

Non-attendance of the first class: Your instructor may drop you from a course if you do not attend or if you do not call the instructor before classes begin. The course instructor will fill out a drop form and notify you if you are dropped from the course.

Dropping after the add/delete period: You may drop a course during the first 40 days of a full semester (the last day to drop a class is shown in the schedule book and in the calendar of this book). Your record will show an "N" grade and your GPA will not be affected.

To drop a class after the eight-week drop requires extenuating circumstances, and you must obtain a Withdrawal Form. You must:

1. Complete the form (including listing a reason for the drop).
2. Get the instructor's signature and the instructor's recommendation.
3. Bring the completed form to the dean (of the class they are dropping), for their review and decision.
4. If the dean approves the drop, the student must then bring the form back to the registrar for processing.

A W grade will appear on your permanent record and will not affect your GPA.

Class attendance: Regular class attendance and active participation in classes are important elements in the learning process. You are at the

University primarily for the sake of intellectual growth and development. Attendance and participation provide appropriate opportunities for the evaluation of your progress.

You are personally responsible for the satisfactory completion of the course work prescribed by your instructors. This means that you are expected to attend classes regularly, and that you are responsible for the work assigned in class, the material covered in class and for participation in class activities (including discussion and listening) designed by the instructor as part of the learning experience. However, mere physical attendance should not be a criterion for evaluation of your performance.

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: If you are a full-time student and drop all of your classes during the first eight weeks of the semester, you may be eligible for tuition refund. To receive any refund, fill out a Withdrawal Form at the Center for Student Services. This office will authorize your refund from the Business Office. (Please check the schedule book for the refund policy.)

Before leaving, be sure you have cleared any holds on your records so you can return at a later date or have transcripts of your academic records sent out.

Grading System

Grade Point Average (GPA): To calculate your GPA for a semester, divide the total points earned by the total credits carried. Credits carried include those earned or failed but not those classes taken for credit/no credit. Cumulative GPA is calculated by dividing total

points earned by the number of credits carried in all semesters. If you repeat a course, count only the credits carried and the points of the last grade earned. Just the grade of your last attempt is calculated in your GPA.

A cumulative GPA of 2.00 for all credits is required for graduation. Further, a 2.00 cumulative grade point average for all credits in major and minor(s) is required. Some programs require a higher GPA in the major curriculum.

Incomplete grades (I): An *incomplete* "I" grade can be issued in the case of extenuating circumstances beyond the control of the student that prevent completion of course requirements. Examples of extenuating circumstances may include health issues, death of a parent/spouse/child, or military service. Appropriate documentation is required. An "I" grade can be issued in a course, that by design, cannot be completed in one semester. You must make up the work by the date specified by the instructor. If a date is not given, the student will have a maximum of two semesters (excluding summer semesters) to complete the requirements for removing the "I" grades. Two semesters after the issuance of the "I" grade, if the professor has not completed a Grade Change Form or requested an extension, the Registrar's Office will change the "I" grade to an "F" grade.

N and W grades: These grades are given to those classes that you have officially dropped *N* or withdrawn *W*.

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

Grade change: You may request your instructor to review and change a grade within two semesters after completion. The instructor fills in and sends a Grade Change Form to the Registrar's Office.

Academic Standing Table

*Full- and Part-time Students
Academic Probation and Dismissal Policy*

Cumulative Semester Credits (QHRS) Carried at LSSU	Cumulative Grade Point Average		
	Minimum for Good Standing	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 academic deficiencies until they have enrolled in at least 19 QHRS at Lake Superior State University. QHRS are the cumulative hours used in figuring the grade point average. Classes not at the 100 level or above are not counted in the QHRS. Classes with grades of CR/NCR are not counted in the QHRS..*

***A cumulative grade point average of 2.00 for all credits carried at Lake Superior State University, and a cumulative grade point average of 2.00 for all courses required in the student's major and minor is necessary for graduation.*

Dean's List: Full-time students carrying at least 12 graded credits of college-level courses (100 level or above) in a semester with a grade point average of 3.5 or higher, and not having any incomplete (I) grades, will earn Dean's List honors, which acknowledge outstanding academic achievement. If you have an incomplete (I) grade, you may take steps to resolve the grade. Once you resolve the grade, notify the Provost's Office if your grade point average is 3.50 or higher for the semester. Upon your notification, the Provost's Office will verify your record, send you a letter of congratulations, and notify the Public Relations Office for press release purposes.

Academic probation: This is a warning that scholastic performance is below the University's minimum requirements. During this probationary period, you will be allowed to carry only up to 15 credits each semester (band and

recreational activities are not included in the 15 credits).

1. Academic probation is in effect if your cumulative grade point average is in the "on probation" category.
2. If your cumulative GPA falls into the dismissal range, you will be dismissed.
3. After a first or second dismissal, you have the following options:
 - a. Sit out two semesters (summer can be counted as one semester) before re-enrolling.
 - b. Petition the Scholastic Standards Committee for immediate readmittance. This action is initiated with the assistant to the provost for academic records. Call 1-888-800-LSSU, ext. 2012 or 906-635-2012. The committee can either permit early readmittance with specific conditions required or deny the request. Further appeal can be made to the provost, whose decision is final.
4. Students who continue after a dismissal will be dismissed again after any semester in which their cumulative grade point average falls in the dismissal category. The assistant to the provost for academic records may allow the student to continue "on probation" with the record showing "on probation" instead of "dismissal", if the student's record has shown improvement during the semester and the student has a 2.00 GPA in courses carried for that semester.
5. A student dismissed for the third time can not be reinstated without 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 college dean, provost or vice president for Student Programs and Services, dismiss students from the University if their academic progress, conduct or attitude toward their work is deemed unsatisfactory.

Credit/No Credit Courses

You may enroll in some courses on a credit/no credit basis if you are in good academic standing. The following conditions exist:

1. One course per semester may be taken as credit/no credit.
2. Only 12 credits of courses taken as credit/no credit may be applied toward a degree.
3. Courses that are required by your major, minor, or that are general education courses, can not be taken for credit/no credit.
4. You apply at the Registrar's Office to enroll for a credit/no credit course during the drop/add period; cannot change to regular grades after the drop/add period ends.
5. You maintain a 2.00 C average in a course to receive a CR grade.
6. Instructors are not notified that you are taking a course as credit/no credit; the CR or NCR credit is assigned based on the grade your instructor submits.

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

Cheating and Plagiarism:

The assumption of the academic contract is that the student does his or her own work: any breach of the contract is considered cheating. The faculty member who detects a student cheating may take appropriate action, such as assigning a failing grade for the entire course.

A student who cheats is subject to dismissal from the University. If, in the opinion of the faculty member involved, such action is warranted, he or she will notify the chairman of the Scholastic Standards Committee and the student in writing. The Scholastic Standards Committee will then conduct a hearing in such a manner that the student is given due process. If the committee decides that dismissal is warranted, the student shall have five school days to appeal that decision to the provost of the University.

Credit by Examination

There are three examination processes you can take to earn credit for individual courses or general education requirements. They include:

1. Advanced placement
2. CLEP examinations — Inquire at the Center for Student Services, Counseling Center or with the assistant to the provost for academic records for information on the CLEP examinations.
3. Departmental examinations — Inquire with the academic department whether an examination is available.

You must be admitted to a degree program and in attendance at Lake Superior State University to receive credit by examination. An examination grade of 2.00 is required to earn credit. There is a fee required for both CLEP examination and

departmental examinations. The credits earned by examination appear as transfer credits on your transcript. Some universities may not accept this type of credit for transfer.

Transcripts

You may have an official copy of your permanent records sent to schools, companies and other places or persons of your choice. Send a written request with your student ID number, name during enrollment and dates of attendance to Lake Superior State University, Registrar's Office, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783. There is a \$5 charge for each transcript. Student copy transcripts are issued directly to you and can be requested free of charge at the Student Service Center in the Fletcher Center. 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 following 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

Human Resources; Work Evaluation, Employment; Director; Administration Building

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

Graduate Office; Academic, Financial; Coordinator; South Hall

Registrar's Office; 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 Registrar's Office 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, student employees who manage student education record information, 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, enrollment status (e.g., undergraduate or graduate, full time or part time) 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 ques-

tion 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.

Additional Information

Lake Superior State University complies with Section 113 of the Carl D. Perkins Vocational and Technical Education Act and Section 122 of the Workforce Investment Act of 1998. LSSU uses the student's SSN in order to compile required WIA and Perkins Act reports.

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.

Admissions

Freshmen

You may apply to Lake Superior State University any time during your final year of high school. Applications are processed continuously and you will be notified of a decision within two weeks. To complete your admission file you must submit a final high school transcript and ACT scores (if you graduated from high school within 26 months of entering LSSU). Final high school transcript must verify graduation from an accredited school or passing on the GED. To be considered official, all transcripts must be mailed from your high school guidance office directly to Lake Superior State University.

Enter your social security number on your Application for Admission. It serves as your permanent student identification number. If you do not wish to provide the number, an alternate number will be assigned. Financial aid applications will not be processed without your social security number. Canadian applicants should not use their social insurance number. An alternative number will be assigned to Canadian and other foreign students.

The primary factors in determining admission are ACT* scores and grade point average. LSSU uses an overall grade point average (GPA). The average overall GPA for the 2001 freshman class was 3.06 on a scale of a 4.0. The average ACT composite score was a 21.

Students whose ACT or GPA levels approach but do not meet LSSU standards may be admitted via the University Studies program. University Studies is an arm of the Great Lakes Academy dedicated to providing an educational opportunity to students who meet certain profiles. Students who are admitted via University Studies receive additional advising and support services to ensure their success at LSSU.

If you are admitted via University Studies, you will be fully entered into your chosen major after meeting these three simple requirements:

- * earn 12 credits at the 100 level or above,
- * earn a 2.00 GPA, and
- * be eligible for 100-level math, reading and composition courses.

Students denied regular admission may reapply after attending another accredited college and earning at least 19 semester (29 quarter) hours of transferable credit. Evaluation for admission is then based upon the college record.

**Although LSSU prefers you take the ACT, we will accept equivalent SAT scores to determine admission.*

ACT

The ACT is offered nationally five times a year at many locations including our campus. Registration forms are available in high school counseling offices or by contacting the LSSU Counseling and Testing Center at 906-635-2733.

United States residents applying for academic scholarships must have their ACT scores sent prior to the April 1 scholarship deadline.

Transfer Students

Transfer students must possess a 2.0 cumulative college GPA and be eligible to return to your former college(s). If you have completed fewer than 19 semester (29 quarter) hours of credit, you must send an official high school transcript or GED scores in addition to your college transcript (and ACT scores if you graduated from high school within 26 months of the semester of entry).

Contact the Registrar's Office or high school guidance office to have

an official transcript mailed to our Registrar's Office. Transcripts sent via facsimile or hand delivered are not considered official. All transcripts become the property of Lake Superior State University and are not returnable.

Your complete application should be submitted at least 30 days prior to the semester of entry. Transfer students denied admission may reapply after taking additional courses that raise their overall GPA to above a 2.0.

Credit Evaluations

Official evaluation of transfer credit is made as quickly as possible after you are admitted. The Admissions Office will help you with an unofficial transcript review at your request.

If a course taken at another institution is not offered at LSSU, 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.

Grades less than C- will not transfer.

The Registrar's Office completes transfer credit evaluations. The decision on courses and transfer credit granted may be appealed first to the academic dean and then to the provost.

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. You must complete at least 15 semester hours of credit with a cumulative GPA of 2.00 at LSSU before provisional credits will become part of your permanent record.

MACRAO Agreement

Michigan community college students admitted to Lake State

who have the MACRAO stamp on their transcript are recognized as having completed the general education requirements at Lake State.

Sault College Agreement

Sault College of Applied Arts and Technology students admitted to Lake Superior State University who have the GECERT stamp (liberal studies degree) on their transcript are recognized as having completed the general education requirements at Lake Superior State University.

Early Admission Policy

Students under the age of 18 that apply for early admission to LSSU that do not possess a high school diploma or GED will be counseled on an individual basis by a member of the Admissions staff. Early applicants to LSSU must provide an official transcript of all high school work and test scores from either ACT or SAT.

If the applicant is unable to provide the necessary data he or she will be required to take LSSU's placement tests. The results of these tests, along with the high school record, will be used to determine the applicant's eligibility for admission. It is required that the applicant meet with a representative of the Financial Aid Office as early admission may affect financial aid eligibility.

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 LSSU courses.

Regional center students must earn at least 32 credits and at least 50 percent of their departmental required 300/400-level credits in Lake State courses.

Associate's degree and certificate candidates must earn 16 of their final 20 credits in Lake State courses.

Great Lakes Academy

Lake Superior State University has a long-term commitment to the academic and personal success of all our students. The Great Lakes Academy serves three functions which assure students can enroll in and complete the relevant coursework and programs.

Access to higher education is offered via the University Studies program. Students from the Eastern Upper Peninsula whose academic background approaches, but does not meet Lake State admission standards, can get their start in higher education via the University Studies program in the Great Lakes Academy. As a University Studies student you will be assigned an academic advisor who understands your situation. Your advisor will work closely with you to make sure you are enrolled in appropriate courses.

The Great Lakes Academy provides *academic support* for the entire Sault Ste. Marie campus. The academy operates the Learning Center as well as several other tutoring and support programs. Students enrolled in associate's degrees have access to the Office of Student Accommodation and Support Services, which provides tutoring, advising and supplemental instruction.

Occupational education is the goal for many students. They seek workplace-relevant programs designed to open the door to good-paying technical positions. Such programs also promote the economic growth of the entire community. The Great Lakes Academy oversees the development and operation of academic programs at the one- or two-year level.

Learning Center

The Learning center (LC), located in the KJS Library Building, offers free academic support services to all enrolled students at LSSU, at all levels of learning (freshman through senior).

- Peer tutoring and supplemental instruction (also known as organized study groups) are available for many preparatory, 100- and 200-level courses across the disciplines.
- The LC's Writing Lab staff can assist you with all types of writing at all levels for all disciplines.
- You can enhance your academic performance by using our state-of-the-art computers equipped with tutorial and instructional software for many LSSU courses, as well as various other programs such as the Internet, Corel and MS Office. With more than 80 programs to choose from, the LC has something for everyone.
- Our student success seminars (on topics such as study skills, test preparation, test anxiety and time management) are available each semester on a first-come, first-served basis.
- Study space, tutorial video and audio libraries, and a book-lending library are also available.

Our friendly staff will be happy to assist you in reaching your academic goals. Please contact us at 906-635-2849 with any questions.

Resource Center for Students with Disabilities (RCSD) - formerly OSASS

The Resource Center for Students with Disabilities is located in South Hall. The center is responsible for providing disability-related

services, and ensuring appropriate accommodations for students are met in the academic and university environment. In order for students to receive accommodations, they must voluntarily provide current documentation verifying their disabling condition, and register and meet with the RCSD coordinator. The types of accommodations vary depending on the disability and are determined on a case-by-case basis. If you have a disabling condition (learning, mental, physical) or you think you may have a disabling condition, please contact the RCSD.

Former Students

Former full-time Lake Superior State University students who miss one or more semesters (not including summer) and attend another college or university must apply for readmission before the semester of re-entry. There is no application fee. You must submit official transcripts from any college you attended since leaving LSSU and meet our transfer student admissions policy.

Guest Students

Students enrolled at another college or university may be admitted to Lake State for one semester as a guest student. An extension of one additional semester may be granted for extenuating circumstances. If you intend to enroll full time for more than one semester, you must submit an Application for Admission as a transfer student. Guest students assume responsibility for determining if Lake State courses apply to their program at the college from which they 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.

Additional information for Ontario secondary school students is available in the Ontario Student Handbook 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.

If you completed grade 13 or OAC courses before September 1990, you will receive transfer credit at the University for each course in which your final mark was at least a 60 percent. Transfer credit is not given for any OAC courses taken after September 1990. However, completion of OAC courses prepares some students to earn credit through testing. (See section titled "Credit by Examination").

A notarized financial statement is required before a Certificate of Eligibility (Form I-20) 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 the student's educational and living expenses while studying in the United States. Foreign student scholarships are available. Employment opportunities for foreign students are restricted by U.S. Immigration and Naturalization Service regulations. Canadian students who commute on a daily basis may be exempt from providing financial statements.

Canadian students are required to purchase a health and accident insurance policy unless they are covered under a policy of their own or a policy with their parents.

Foreign Students Excluding Canadians

Applicants must satisfy entrance requirements comparable to those

of United States students. All student credentials must be evaluated by the World Education Services (WES). Information on WES is available on-line at www.WES.org, by phone at 212-966-6311 or email at info@wes.org.

A notarized financial statement is required before a Certificate of Eligibility (Form I-20) 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 the student's educational and living expenses while studying in the United States. Foreign student scholarships are available. Employment opportunities for foreign students are restricted by U.S. Immigration and Naturalization Service regulations.

The foreign student application processing fee is \$40.

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 Form I-20 is sent, as required by the U.S. Immigration and Naturalization Service.

Foreign students are required to purchase a health and accident insurance policy for each year in residence.

Limited English Proficiency

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

1. Score 550 or above on the paper-based Test of English as a Foreign Language (TOEFL)

or 213 on the computer-based TOEFL. For information regarding this test, write: TOEFL, Box 6151, Princeton, New Jersey, 08541-6151 U.S.A. or any United States Information Service Center. 609-771-7100/www.toefl.org.

2. Score 80 or above on the Michigan English Language Assessment Battery (MELAB). For information about this test, write: English Language Institute, MELAB Testing, 3020 North University Building, University of Michigan, Ann Arbor, Michigan 48109-1057 U.S.A.
3. Complete Level 109 at any ELS Language Center located in the United States. For information about ELS Centers, write: ELS Language Centers, 400 Alexander Park, Suite 100, Princeton, New Jersey 08540-6306 U.S.A. 1-609-750-3500/www.els.com, info@els.com
4. Complete two years of study at a school, college or university located in an English-speaking country.
5. Proficiency may be assessed through participation in Lake Superior State University's English as a Second Language Program.

Students not meeting Lake State's English proficiency requirement must enroll in 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. A part-time student not seeking financial aid or a degree or certificate does not have to formally apply for admission.

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

Current high school students should refer to the section regarding dual enrollment.

Tech Prep

The national tech prep movement is supported at LSSU. As a 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 Lake State create a broader array of educational options for our students.

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, LSSU 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. Check with your high school guidance counselor or an LSSU admissions advisor to verify whether a specific course may apply.

Dual Enrollment for High School Students

Knowing that some talented high school students will benefit from taking university courses while in high school, qualified students are challenged to take coursework at LSSU. Before you register for any class, be sure you meet the following criteria:

- complete the Dual Enrollment Form (available at the LSSU Center for Career and Employment Services or your high school guidance office),
- be at least a high school junior,
- enroll in 100- or 200-level courses;
- 300-400 courses are available with department approval; and
- be sure to take any required placement tests or prerequisite courses. (A prerequisite is a course that must be completed before the other course can be taken.)

Placement Testing

ACT and/or SAT scores will be used to place students in freshman English and mathematics courses (see table). Students not required to provide ACT scores would take a placement test before scheduling classes.

Students with high ACT or placement scores are invited to enroll in honors English. High scores in mathematics will also allow

<h3>LSSU Course Placement Chart</h3> <h4>ACT, SAT and LSSU Placement Exam Scores</h4>			
Test scores as indicated in the chart below determine your placement into reading, English and mathematics courses. You may challenge your course placement by taking LSSU's placement exams; tests must be completed and scored prior to beginning course work at LSSU.			
Reading Placement	SA090 ACT=0-14 LSSU=1-18	SA106 & 107 Recommended ACT=19-21 LSSU=24-27	No Course Needed ACT=22+ LSSU=28+
	SA091 ACT=15-18 LSSU=19-23		
English Placement	EN091 ACT=0-17 SAT=0-440 LSSU=1-24	EN110* ACT=18-25 SAT=450-580 LSSU=25-33 <i>*also requires ACT reading score of 19 or higher</i>	EN110 Honors ACT=26+ SAT=590+ LSSU=34+
Mathematics Placement	MA081-083 ACT=0-16 SAT=0-400 LSSU=1-14	MA092, 110 or 207 ACT=19-21 SAT=460-510 LSSU=17-25	MA103, 108, 111, 140 ACT=22-26 SAT=520-610 LSSU=26-35
	MA084-086 ACT=17-18 SAT=410-450 LSSU=15-16		MA112, 143, 151 ACT=27+ SAT=620+ LSSU=36+
For more information, please contact the University Studies Program coordinator at 906-635-2874.			

students to enroll in higher-level math courses.

Students with low scores in English, reading and mathematics will be required to take upgrading courses. Students who do not successfully meet reading requirements by their sophomore level (26 credits) will be limited to a 13-credit load (including reading courses) until they successfully complete their reading courses.

Transfer students without appropriate course work in English and mathematics (see degree requirements) are also required to take placement tests. Transfer students may meet placement requirements by their ACT scores if they submit ACT scores to LSSU.

Credit by examination

You may earn university credit by examination. The University grants credit from Advanced Placement, College Level Examination Program (CLEP) and departmental exams. If you are already attending Lake State, you may earn credit through both CLEP and departmental exams.

You must meet the following criteria before credit by examination will be entered on your transcript:

1. be an admitted full-time student, and
2. be enrolled at Lake Superior State University.

Advanced Placement Program (AP)

Advanced Placement Exams are administered at high schools each May. LSSU grants credit in select AP exams passed with a score of three or higher. If an essay is part of an individual exam, 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 Lake State grants credit is available through the Admissions Office.

College Level Examination Program (CLEP)

You may take CLEP exams at a computer testing center, including Lake State's Counseling and Testing Center. Lake State offers CLEP exams every month except December. Credit for CLEP is granted as shown on the table.

You may receive credit toward specified courses that meet general education requirements.

CLEP general and subject 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 are recorded as credit without grade points.

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 permission is granted from the academic department offering the course.

A listing of approved CLEP general and subject examinations and acceptable minimum scores is shown below.

Departmental Exams

Departments may provide their own examinations for certain courses. You must have the written approval of the appropriate department chair to take the examination. An application form for credit by exam can be found with the department chair. 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. Credit earned by exam is recorded as transfer credit on the student's transcript. Some universities may not accept transfer credit earned by departmental exam.

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

Health Record

Everyone entering Lake State for the first time should complete an Immunization Record and 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.

Credit for CLEP General Exam

Test	Score Equiv. Reg.	Course	Credit Hours
Mathematics	500	MA Electives	3

Credit for CLEP Subject Exams

Test	Essay Required	Required Score	Course Equivalents	Credit Hours
Principles of Accounting	No	50	AC132, 133	8
General Biology	No	50	BL109, 110, 111	8
General Chemistry	No	50	CH115, 116	9
Information Systems & Computer Appl.	No	50	CS101	3
Principles of Macroeconomics	No	50	EC201	3
Principles of Microeconomics	No	50	EC202	3
Freshman College Composition	Yes	50	EN110	3
Analyzing and Interpreting Literature	Yes	50	EN111	3
American Literature	Yes	50	EN231, 232	6
English Literature	Yes	50	EN233, 234	6
History of U.S. I	No	50	HS131	4
History of U.S. II	No	50	HS132	4
Western Civilization I	No	50	HS101	4
Western Civilization II	No	50	HS102	4
College Algebra	No	50	MA111	3
College Algebra-Trigonometry	No	50	MA140	5
Calculus with Elementary Functions	No	50	MA151	4
Principles of Marketing	No	50	MK281	3
Principles of Management	No	50	MN360	3
American Government	No	50	PS110	4
Introductory Psychology	No	50	PY101	4
Human Growth and Development	No	50	PY265	3
Introductory Sociology	No	50	SO101	3
College-Level German I & II	No	50	GN141, 142	8
College-Level Spanish I & II	No	50	SP161, 162	8
College-Level French I & II	No	50	FR151, 152	4

**based on local norms*

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 non-refundable and does not apply toward tuition or other fees.

Definition of Michigan Residency for Tuition Purposes

As a state-supported institution, Lake Superior State University complies with the following definitions and regulations governing resident status:

1. The residence of a student who is a minor follows that of parents or legal guardians, except that a minor student who comes to the University from another state or country cannot be registered as a resident of this state on the basis of having a resident of this state as a guardian, except on permission of the University in each individual case.
2. A person who is at least 18 years of age at the time of initial registration and who has continuously resided in Michigan for at least six months immediately preceding the first day of classes, is a resident for tuition purposes provided he/she can provide evidence of Michigan residency. A non-resident student can show that they qualify for resident tuition by presenting a valid State of Michigan drivers license or presenting a State of Michigan voter registration card or proving their motor vehicle is registered in the state of Michigan or other acceptable means.
3. Non-resident students who enter the state and immediately begin classes shall be eligible for reclassification to resident status after six months, provided they can provide evidence of a change in their residency status. A non-resident student can show that they qualify for resident tuition by presenting a valid State of Michigan drivers license or presenting a State of Michigan voter registration card or proving their motor vehicle is registered in the state of Michigan or other acceptable means.
4. A Michigan resident absent from the state for periods of up to one year shall not forfeit his or her residence for tuition purposes, provided that he or she has taken no action to become a resident of another state.
5. Initial decisions on classification, and requests for reclassification to become a resident student, will be made by and to the registrar. Students may appeal these decisions to the vice-president for Student Affairs.
6. The residence of a student follows that of his or her spouse, except that a student who initially registers as a resident student may continue to register as a resident of Michigan although subsequently marrying a non-resident student or other non-resident.
7. Students on active duty in any of the armed services and stationed in the state of Michigan are exempt from payment of non-resident tuition.

8. Aliens lawfully admitted for permanent residence in the United States who have a permanent visa, their spouses and minor children, may register as residents of this state provided they have met the other requirements herein for residency.
9. Any full-time employee of the University, and those members of the teaching staff whose appointments require at least three contact hours of teaching each week in regularly assigned formal classes, and their dependents, may register as residents.
10. Any dependent child of an alumni parent who has earned credit at Lake Superior State University prior to the fall quarter of 1968 or earned a certificate or degree from this University or completed a minimum of 24 semester hours of 36 quarter hours.
11. Any transfer student who was accepted as a Michigan resident at a Michigan community college with proof of the community college tuition rate and the student's tuition status.
12. Any foreign exchange student attending secondary schools in Michigan or Ontario.
13. An out-of-state *first time in college* freshman student who has at least a 3.0 grade point out of a possible 4.00 or a 24 composite on ACT or in the top one-fifth of their graduating class *will receive a scholarship for the difference of in-state and out-of-state tuition. If the student does not declare Michigan residency after the first year in attendance, the scholarship is renewable provided the student meets scholarship renewal requirements.*
14. Any transfer student who has earned at least 60 semester credits from a United States junior college or United States community college with at

least a 3.00 overall grade point average.

Any student who is in doubt of residence status should contact the registrar and have any questions settled prior to registration.

Policy: Tuition/Fees

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

Anyone who is delinquent in any obligation to the University will not be allowed to register for classes. 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: Audits are designed for someone who wishes to take a particular course for its content but not be graded for the course. An LSSU student may register for any course on an audit basis provided all prerequisites have been satisfied.

The coursework for auditing a course is determined in conjunction with the faculty member for the course.

Auditing courses do not count as part of a student's official class load for determining financial aid eligibility, veteran's benefits or any other enrollment certification requirements.

Students may change from an audit to credit status during the first week of classes and only with the concurrence of the faculty member for the course. This change must be processed through the Registrar's Office for grading purposes.

Students are assessed full tuition and fees for the course and an AU grade is recorded on the student's official transcript if the student completes the course.

Michigan residents who are 60 years of age or older may audit undergraduate courses compliments of LSSU with no record kept of their audits.

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, and requires special permission from the instructor of the course.

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/Refunds

If you decide to drop your classes, you must complete each step to officially withdraw from the University.

1. Pick up an Official Withdrawal Request Form at the Fletcher Center for Student Services
2. Clear any outstanding charges or holds that may prevent your return at a later date or prevent the release of your academic record.
3. Complete the entire Withdrawal Form and obtain the required signatures (shown on the form).

4. If you have benefited from federal financial aid, you may be required to complete an Exit Interview at the Financial Aid Office — allow 25 minutes.
5. Deliver the completed form to the Registrar's Office. Your withdrawal date will be determined by the date the completed form is submitted to the Registrar's Office. Any refunds will be calculated "as of" that date.

All withdrawals should be done in person. If you are unable to complete the process in person, the registrar is the only University authority that can authorize the process of your withdrawal over the phone. Please contact the registrar at 635-2682 or 1-888-800-LSSU, ext. 2682 for assistance.

Refunds are made in accordance with the above schedule.

After your completed Withdrawal Form is accepted, your University charges will be reduced according to the schedule shown above. If you have not received any form of financial aid and there is a credit balance on your account, you will be sent a refund check. If you have received aid, your aid may have to be returned to the appropriate source. You may owe money!

Withdrawal and Refund Policy for Fall and Spring Semesters

Courses Dropped	Time of Withdrawal	% of Refund
Any or all classes	Prior to class - 6th school day*	100%
Dropping all classes	7th-8th school day	90%
Dropping all classes	9th-19th school day	50%
Dropping all classes	20th-38th school day	25%

**There are no refunds for partial drops after the sixth day.*

Financial Aid Return Policy: Applies to students receiving federal and state financial aid including loans and scholarships, and institutional and private aid.

- First, your account will be credited according to Lake Superior State University's Refund Policy (on or prior to the 38-day withdrawal period).
- Then, your financial aid will be reduced in direct proportion to the length of time you remained enrolled, up to 60 percent of the semester.
- **PLEASE NOTE:** *If you have received a payment for excess financial aid and you withdraw, you could owe the University and/or the federal government money.*
- If there is still a credit on your account, the amount of the credit will then be applied to the remaining financial aid funds until the credit has been reduced to zero.
- Any remaining refund due you, after all funding sources have received the appropriate credit, will be refunded directly to you.

There may be an administrative fee for early withdrawal.

For example: If there are 105 days in the semester and you withdraw on the 58th day, your federal aid would be reduced to 55% (58/105). If your total cost to attend was \$2200 and it was paid with federal aid of \$1200 and a personal payment of \$1000, your federal aid would be reduced to \$660. You could owe the University \$540.

Attendance Policy for federal financial aid recipients: Regular class attendance is required for students receiving federal financial aid. If you are reported for non-attendance in any or all of your courses, your financial aid may be withdrawn.

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 an official Withdrawal Request Form 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.

Delinquent accounts: Students with delinquent accounts may be removed from class, have their diploma withheld, and/or have transcript requests denied.

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 ex-

empted by the vice president for Student Affairs.

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 and be enrolled in and attending classes to live on campus.

Room and board: Students are billed for room and board and tuition each semester. A payment plan may be set up with the Business Office located in the Fletcher Center. A cost sheet is available from the Student Service Center.

Housing deposit: If you are living on campus, there is a \$125 security deposit prior to checking into the hall. This deposit is refunded, less monies owed to the University, when you leave campus housing.

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



Financial Aid

Notification of scholarship awards begins October 1 for students admitting for the following fall semester.

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, grant, loan, 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 grants, loans and/or employment based on need established from the Free Application for Federal Student Aid (FAFSA).

You can obtain information on all financial aid programs from the Financial Aid staff. Staff 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 for financial aid by obtaining a FAFSA form from your high school counselor or contacting the Financial Aid Office, Lake Superior State University, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783. You may also file your FAFSA on-line at www.fafsa.ed.gov.

Once your FAFSA is received by LSSU and your admission is complete, you will receive an "Official Offer of Award" letter from the Financial Aid Office.

Scholarship requirements: Incoming freshmen must have a minimum GPA of 3.0 and ACT of 19 to qualify for an LSSU scholarship. The recipient of any award must be a full-time student carrying 12 academic hours or more each semester (except regional center recipients).

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.

All freshmen who are Michigan residents are encouraged to complete the Michigan Educational Assessment Program (MEAP) test to determine eligibility for additional state aid.

You and your parents or guardian must complete a Free Application for Federal Student Aid (FAFSA) to apply for federal aid. The form must be received by the processor before February 21 (incoming freshmen) or March 21 (returning students) to assure priority aid consideration.

Satisfactory Academic Progress Requirements for the Retention of Financial Aid

If you are receiving any form of financial aid, you must meet these satisfactory academic progress requirements to retain your aid each semester.

Financial aid regulations require that a student must make satisfactory progress to remain eligible for financial aid. Financial aid programs affected by this policy are Federal Pell Grant, Federal Perkins Loan, Federal Work-Study, Federal Supplemental Educational Oppor-

tunity Grant, Federal Direct Loans, Federal PLUS Loans, State of Michigan and Institutional Scholarships, Grants, Loan and Work Programs. The Native American Tuition Waiver is exempted from this policy.

The following policy is the **minimum requirement** for all types of financial aid; however, there are some types of aid with more stringent requirements (see scholarship requirements):

Qualitative Standards

Every student must maintain, at the end of each semester, a cumulative grade point average (GPA) of at least:

Cumulative GPA	Credits Attempted*
1.70	0-25 credits
1.86	26-55 credits
1.93	56-87 credits
1.97	88 or more credits

**Semester Hours (includes transfer credit hours)*

Probationary Semester: First-year freshmen and new transfer students not meeting the GPA requirement after their first semester at LSSU will be placed on financial aid probation for one semester. The cumulative GPA after the probationary semester must satisfy the minimum GPA or the student will have his/her financial aid suspended. For example, a freshman "attempting" 16 credits each semester would need to have a cumulative GPA of at least 1.86 to receive aid the following year.

Current Students: Students that have been enrolled for more than one semester will not have a probationary semester and must meet the schedule above for each semester.

Transfer Students: The requirements for transfer students are based on the number of full-time equivalent credits transferred to LSSU. For example, a student with 68 transfer credits must earn a GPA of 1.93 or higher.

Quantitative Standards

Each student's progress in credits earned will be reviewed every semester. The following credits must be earned in relation to the number of credits enrolled at the end of the add period:

Undergraduate Students Fall/Spring Semester	
Enrolled Credits	Credits to be Earned
12+	9
11	8
10	7
9	6
8	6
7	5
6	4
5-1	100%

Graduate Students Fall/Spring Semester	
Enrolled Credits	Credits to be Earned
10+	7
9	6
8	6
7	5
6	4
5	4
4-1	100%

If a student does not satisfactorily meet the quantitative standard, he/she will be placed on financial aid probation for the next semester. If a student fails to meet the standard for the second consecutive semester enrolled, his/her financial aid will be suspended.

Part-time students enrolled for less than six credits must earn all credits attempted.

Once financial aid is suspended, both the GPA and credit hour completion criteria must be met in subsequent semesters of six credits or more 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 cancellation of aid by the student.

Financial Aid Suspension: No aid will be granted once a student's

150% Completion Rule

Students are expected to complete a two-year degree in six semesters, a four-year degree in 12 semesters and a master's degree in four semesters of full-time study. Eligibility for aid is terminated after six semesters (associate's), 12 semesters (bachelor's degree), and four semesters (master's), or after attempting 150 percent of the credits required for the degree.

eligibility is suspended, including but not limited to the Federal Direct Stafford Loan, Federal Perkins Loan, Federal Direct PLUS Loan, Federal Work-Study, Federal Supplemental Educational Opportunity Grant, Federal Pell Grant, Michigan Competitive Scholarship, Michigan Adult Part-Time Grant, Michigan Educational Opportunity Grant, Michigan Work Study and Institutional Scholarships and Grants.

Financial Aid Reinstatement: To remove financial aid suspension status, a student must have attained the minimum cumulative grade point average and credit-earned requirements (minimum six credit hours) at Lake Superior State University, while not receiving financial aid. Students who successfully complete 26 credits at a community college after being suspended at LSSU will be allowed one probationary semester upon readmission. Successful students must advise the Financial Aid Office in writing that they have met the requirements for reinstatement.

Right to Appeal: A student whose aid is suspended may request reinstatement through the Financial Aid Committee. To obtain reinstatement, the student must effectively demonstrate that their poor performance was due to some unusual circumstance. Such requests should be in writing and addressed to the Vice President for Student Affairs. Appeal letters should be received immediately following the semester of the suspension.

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.

SCHOLARSHIP RENEWAL REQUIREMENTS

In addition to the quantitative standards, scholarship winners must meet the following GPA requirements to maintain their awards:

BOARD OF TRUSTEES* DISTINGUISHED

3.00 or better after two semesters of study
3.10 or better after four semesters of study
3.20 or better after six semesters of study

BOARD OF TRUSTEES**

2.50 or better after two semesters of study
2.60 or better after four semesters of study
2.70 or better after six semesters of study

*Includes other renewable institutional scholarships with a value of \$4,000, full tuition or higher.

**Includes other renewable institutional scholarships with a value of less than \$4,000.

Note: Transfer credits are included when determining "semesters of study."

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 Official Offer of 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 Official Offer of Award letter.)
7. 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 meeting the requirements, and how to re-establish eligibility for financial aid. (See Satisfactory Progress Policy in this section of the Catalog.)
11. that LSSU programs are accessible to the handicapped. Further information is available from the Resource Center for Students with Disabilities (RCSD), Lake Superior State University, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783. The RCSD is located within Counseling, Testing and Disability Services in room 206 of South Hall.
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
 - d. all non-LSSU aid received.
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

Scholarship criteria is reviewed each year and subject to change. Scholarships are described here as awarded for 2002-2003.

Incoming Freshmen (In-State)

Eligibility is determined by the Financial Aid Office for all students admitted by April 1st for the following academic year.

All recipients in this section are selected by the Financial Aid Committee and may choose any degree curriculum offered by the University. Students must be U.S. citizens and current graduates of an accredited Michigan high school.

Scholarships are awarded based on a point scale that is approved annually by the Financial Aid Committee. Fifty percent weight is given to the overall high school GPA and 50 percent is based on the highest ACT composite score received by April 1.

All renewable scholarships are based on the recipient meeting the University's scholarship renewal criteria.

Board of Trustees Distinguished Scholarship

Value: up to \$6000 per year (\$4000 + \$2000 if Room & Board) — renewable

Criteria: merit based; Michigan resident; minimum points 185 (example: 3.80 GPA and 27 ACT)

Board of Trustees Academic Excellence Scholarship

Value: up to \$4000 per year (\$2000 + \$2000 if Room & Board) - renewable

Criteria: merit based; Michigan resident; 175-184.99 points (example: 3.72 GPA and 25 ACT)

Board of Trustees Academic Honors Scholarship

Value: up to \$2000 per year (\$1000 + \$1000 if Room & Board) — renewable

Criteria: merit based; Michigan resident; 165-174.99 points (example: 3.56 GPA and 24 ACT)

Board of Trustees Academic Achievement Scholarship

Value: up to \$1000 per year (\$500 + \$500 if Room & Board) — renewable

Criteria: merit based; Michigan resident; 160-164.99 points (example: 3.60 GPA and 23 ACT)

President's Academic Award

Value: \$500 — non-renewable

Criteria: merit based; Michigan resident; 150-159.99 points (example: 3.20 GPA and 23 ACT)

President's Room & Board Honors Award

Value: \$500 — non-renewable — for students participating in the campus Room & Board Program

Criteria: merit based; Michigan resident; minimum 3.0 GPA and 19 ACT

Note: This award is not available with any other LSSU scholarship

Board of Trustees Michigan Valedictorian Scholarship

Value: variable up to \$1200 per year — renewable

Criteria: merit based; selected as valedictorian of a Michigan high school and ranks first in high school graduating class

Note: This scholarship may be combined with other LSSU scholarships

Incoming Freshmen (Out-of-State and Foreign)

Eligibility is determined by the Financial Aid Office for all students admitted by April 1st for the following academic year.

All recipients in this section are selected by the Financial Aid

Committee and may choose any degree curriculum offered by the University. Students must be current graduates of non-Michigan high schools.

All renewable scholarships are based on the recipient meeting the University's scholarship renewal criteria.

Board of Trustees' Laker USA Scholarship

Value: the difference between out-state and in-state tuition — renewable

Criteria: merit based; U.S. students scoring 24 or higher ACT or 3.0 GPA, or who graduate in the top 20% of their graduating class

Note: may be combined with other LSSU scholarships

Board of Trustees United States and Foreign Distinguished Scholarship

Value: up to \$4000 (\$2000 + \$2000 if Room & Board) — renewable

Criteria: merit based; based on minimum 3.7 GPA and 28 ACT

Board of Trustees United States and Foreign Academic Scholarship

Value: up to \$2000 (\$1000 + \$1000 if Room & Board) — renewable

Criteria: merit based; based on minimum 3.5 GPA and 26 ACT

Incoming Freshmen (Ontario)

Board of Trustees Ontario Distinguished Scholarship

Value: up to \$4000 (\$2000 + \$2000 if Room & Board) — renewable

Criteria: merit based; Ontario resident; graduate of an Ontario high school; minimum 3.8 GPA (equated)

Board of Trustees Ontario Honors Scholarship

Value: up to \$2000 (\$1000 + \$1000 if Room & Board) — renewable

Criteria: merit based; Ontario

resident; graduate of an Ontario high school; minimum 3.5 GPA (equated)

Board of Trustees Ontario Achievement Award

Value: \$1000 — renewable

Criteria: merit based; Ontario resident; graduate of an Ontario high school; minimum 3.3 GPA (equated)

Board of Trustees Ontario Academic Award

Value: \$1000 — non-renewable

Criteria: merit based; Ontario resident; graduate of an Ontario high school; minimum 3.0 GPA (equated)

Community College Transfer Students

Eligibility is determined by the Financial Aid Office for all students admitted by April 1st for the following academic year.

All recipients in this section are selected by the Financial Aid Committee and may choose any degree curriculum offered by the University. Students must earn an associate's degree from a Michigan or Ontario community college just before attending Lake Superior State University.

All renewable scholarships are based on the recipient meeting the University's scholarship renewal criteria.

Board of Trustees Michigan Junior and Community College Scholarship - Distinguished

Value: up to full tuition per year — renewable for senior year if the recipient meets the University's scholarship renewal criteria

Criteria: merit based; Michigan resident; graduated or intend to graduate from a recognized junior or community college in Michigan prior to enrollment at Lake Superior State University; must have earned an associate's degree and enroll as at least a junior at LSSU; minimum community college GPA of 3.9

Board of Trustees Michigan Junior and Community College Scholarship

Value: variable up to \$2000 per year — renewable for senior year if the recipient meets the University's scholarship renewal criteria

Criteria: merit and need based; Michigan resident; graduated or intend to graduate from a recognized junior or community college in Michigan prior to enrollment at Lake Superior State University; must have earned an associate's degree and enroll as at least a junior at LSSU; minimum community college GPA of 3.3

Qualified regional center part-time student may opt to receive the scholarship for a minimum of \$400 per semester. The scholarship may be applied in any semester, including summer, if the recipient is taking one or more LSSU courses at a regional center. Each scholarship recipient has three calendar years to use his/her six semesters of scholarship eligibility of part-time attendance only.

Board of Trustees Ontario Community College Scholarship

Value: up to one-half tuition per year — renewable for the student's fourth year of study, if the recipient meets the University's scholarship renewal criteria

Criteria: merit based; graduate of Ontario community college enrolled as at least a junior at LSSU; minimum community college GPA of 3.5

Additional Scholarships for Incoming Students

Eligibility is determined by the Financial Aid Office for all students admitted by April 1st for the following academic year. These scholarships typically replace and upgrade other LSSU scholarships.

All recipients in this section are selected by the Financial Aid Committee (unless otherwise

stated) and may choose any degree curriculum offered by the University (unless otherwise stated).

All renewable scholarships are based on the recipient meeting the University's scholarship renewal criteria.

449th Bombardment Wing Scholarship

Value: variable — renewable

Criteria: merit based; entering freshmen that have graduated from high schools in Chippewa, Luce or Mackinac County

Guy Adda Memorial Endowed Scholarship

Value: variable — renewable

Criteria: merit and need based; preference is given to applicants from Southeastern Lower Michigan; based on GPA and ACT scores

Bill Ayers Memorial Scholarship

Value: variable — renewable

Criteria: must be a Sault Area High School graduate

Selected by: Financial Aid Committee upon recommendation of the Sault Area High School Faculty Honor Committee

Richard Blankenbaker Memorial Award

Value: variable up to full tuition — renewable

Criteria: need based; preference is given to graduates of DeTour High School or a DeTour mailing address

Leah Marie Bollin Memorial Award

Value: variable — non-renewable

Criteria: This award is intended to help a student who has epilepsy and is making satisfactory progress toward his/her education goals. A minimum cumulative 2.00 GPA is required. Preference will be given to a student with demonstrated financial need. Students with other seizure disorders will also be considered. Interested students must complete a questionnaire and provide

three letters of recommendation.

Selected by: recommendation by a committee of representatives from the LSSU faculty, the Office of Student Accommodations and Support Services, the Counseling Center and the Bollin family

Kurt and Mary Brammer Scholarship

Value: full tuition — renewable
Criteria: merit and need based; high school seniors, transfer students or LSSU students who apply after earning 26 LSSU credits; awards to high school seniors are based on ACT and GPA scores

John E. Brown Memorial Scholarship

Value: variable — renewable
Criteria: merit based; must be from the Eastern Upper Peninsula of Michigan; minimum 3.5 GPA
Note: If there is no eligible candidate from the E.U.P., a candidate from the Michigan Upper Peninsula may be considered.
Curriculum: electrical engineering

Sam Cohodas Endowed Scholarship

Value: variable — renewable
Criteria: merit and need based; awarded annually to Michigan Upper Peninsula high school seniors based on GPA and ACT scores, character and leadership

Michael Della-Moretta Memorial Scholarship

Value: variable — renewable
Criteria: merit and need based; preference given to Upper Peninsula residents
Curriculum: biological science

Sam Dubow Memorial Scholarship

Value: \$300 — renewable
Criteria: merit and need based; graduating Sault Area High School senior; leadership demonstration; community/school involvement
Selected by: recommendation by the Sault Area High School Faculty Honors Committee

ESP Endowed Award

Value: variable — non-renewable
Criteria: full-time student in good standing; minimum cumulative 2.00 GPA is required. Must be either the child or grandchild of an ESP participating employee or retiree or be sponsored by a participating employee. Preference will be given to a student with demonstrated financial need. Interested students must submit a biographical essay

Selected by: recommendation by the ESP Endowed Award Committee

Frank Fazi Endowed Scholarship

Value: variable — non-renewable
Criteria: Merit based; awarded to incoming freshman with a minimum 3.0 GPA and a graduate of an Eastern Upper Peninsula high school
Curriculum: business and/or economics

First National Bank of St. Ignace Endowed Scholarship

Value: variable — renewable
Criteria: merit based; preference is given to graduates of LaSalle High School of St. Ignace and selection is based on GPA and ACT scores

H. Thayer Fletcher Distinguished Scholarship

Value: up to \$6000 per year (\$4000 + \$2000 if Room and Board)—renewable if the recipient meets the University's scholarship renewal criteria for distinguished scholars
Criteria: merit and need based; Michigan or Canadian residents; meet distinguished scholarship criteria

Rosa Grout Scholarship

Value: variable — renewable
Criteria: merit based; selection based on high school GPA and ACT scores
Curriculum: engineering, engineering technology, mathematics, computer and mathematical science or lab science major

Gus Macker Scholarship

Value: variable — renewable
Criteria: merit based; recipient must show demonstrated involvement in civic, school and/or other voluntary activities within his/her community; minimum 3.0 GPA; resident of Eastern Upper Peninsula and a graduate of a high school in Chippewa, Mackinac or Luce County

Dennis Hardt Memorial Scholarship

Value: variable — renewable
Criteria: merit based; student's high school GPA and ACT scores will be the prime selection criteria; current LSSU students must have earned at least 26 LSSU credits with a minimum 3.0 GPA

Curriculum: electrical engineering

Philip Hart Memorial Scholarship

Value: variable — renewable
Criteria: seniors of Michigan high schools or graduates of Michigan community colleges planning to attend LSSU for the first time; minimum 3.0 cumulative GPA. Candidates will be required to submit their applications with formal essays detailing their values, goals and public service experience. Essays should attempt to answer this question: "How have my activities thus far related to the goals and the ideals of Senator Hart?" Candidates will also be required to 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.

Frank and Gladys Hoholik Scholarship

Value: variable up to full tuition — renewable
Criteria: need based; may be entering freshmen, transfer students or currently enrolled students who have completed 26 credits at LSSU

Hudson, Coates, Kline Scholarship
Value: variable - minimum \$2500 — renewable

Criteria: merit and need based; graduating Sault Area High School senior; based on high school GPA and ACT scores. If a graduating senior is not available, it may be awarded to a current LSSU student with at least 26 earned LSSU credits and minimum 3.2 GPA that graduated from Sault Area High School.

Robert M. Hunt Memorial Scholarship

Value: one-half tuition and fees — renewable

Criteria: merit and need based; Sault Area High School graduate who is a well-rounded student and demonstrates leadership skills and dedication to his/her community; minimum 2.0 GPA

Note: If an eligible high school senior is not available, the scholarship may be awarded to an LSSU student that graduated from Sault Area High School with at least 26 earned LSSU credits and meets the eligibility requirements. This scholarship may not be awarded in conjunction with or in place of an athletic scholarship.

Selected by: recommendation of the Sault Area High School Faculty Honors Committee

International Studies Grant

Value: variable up to \$500 per year — renewable

Criteria: must be in good academic standing; minimum cumulative 2.50 GPA is required. Not available to U.S. or Canadian citizens. Student must have graduated from a foreign high school and not be a recipient of an LSSU scholarship.

John Kalesky Memorial Endowed Scholarship

Value: variable — renewable

Criteria: merit and need based; based on high school GPA and ACT scores; may be granted to

current LSSU students with at least 26 earned LSSU credits and a minimum 3.0 GPA

Curriculum: geology

C. Ernest Kemp Endowed Scholarship

Value: variable — minimum \$600 — renewable

Criteria: merit based; based on high school GPA and ACT scores; may be granted to current LSSU students with at least 26 earned LSSU credits and a minimum 3.0 GPA

Curriculum: geology

George and Virginia Lahodny Endowment Scholarship

Value: minimum \$500 — renewable

Criteria: merit based; based on high school GPA and ACT scores; may also be granted to current LSSU students or transfer students

Laker Spirit Scholarship

Value: variable up to \$1000 — non-renewable

Criteria: merit based; based on high school minimum 3.00 GPA and 21 ACT scores; by invitation to the annual Academic Open House for newly admitted students; interview and essay required at the event; leadership and extra-curricular activities that demonstrate involvement. This scholarship will be combined with any other scholarships.

Selected by: recommendation from interview teams of faculty, students and staff at the Academic Open House (held during the winter prior to first fall semester of attendance)

Larson-Prohazka Scholarship

Value: variable — renewable

Criteria: merit and need based; based on GPA and ACT scores; preference will be given to students from the Upper Peninsula with a cumulative GPA of 2.8 or higher; graduate of an Upper Peninsula high school that the student attended for at least three years; may be awarded to current

LSSU students with at least 26 earned LSSU credits if an eligible high school student is not available

LSSU Foundation Endowed Scholarship

Value: variable — renewable

Criteria: merit and need based; for Michigan resident or non-resident students; available to high school seniors, community college graduates and LSSU students who are enrolled full time with at least 26 earned LSSU credits; selection is based on GPA and ACT scores

John Lehman Chemistry Scholarship

Value: variable — non-renewable

Criteria: merit based; preference given to student with demonstrated financial need if two or more applicants are judged to have equal potential; special application letter and essay required; if incoming freshman is not available, the award may be given to sophomores or juniors or to students who previously received the award

Curriculum: chemistry or environmental chemistry

Selected by: recommendation by the LSSU Chemistry Department

School of Mathematics and Computer Science Scholarship

Value: variable — non-renewable

Criteria: merit based; based on high school GPA and ACT scores

Curriculum: computer and math science, or math secondary education

Bill Munsell Endowed Scholarship

Value: variable — renewable

Criteria: merit and need based; graduate of a Chippewa, Luce or Mackinac County public high school; based on GPA and ACT scores

James C. and Melissa H. Myers Scholarship

Value: variable — renewable

Criteria: merit and need based; selection based on high school GPA and ACT scores

Leslie O'Polka Memorial Scholarship

Value: variable — renewable

Criteria: need based; graduate of DeTour High School; may be granted to current LSSU student with at least 26 earned LSSU credits if a high school senior is not eligible

Chase and Stella Osborn Endowed Scholarship

Value: variable — renewable

Criteria: merit and need based; based on GPA and ACT scores

John D. Peacock Award

Value: variable — renewable

Criteria: merit and need based; must have part-time employment while attending LSSU; minimum 2.0 GPA

Frank and Marion Pingatore Memorial Scholarship

Value: variable — renewable

Criteria: merit and need based; Sault Area High School graduate; based on GPA and ACT scores; may be granted to current LSSU students with at least 26 earned LSSU credits and a minimum 3.0 GPA, if a Sault Area High School graduate is not available.

Ross N. Roe Scholarship

Value: variable — renewable

Criteria: merit based; must be enrolled at least half time (six or more credits); incoming freshmen students must have a 2.5 or higher GPA; continuing students must have a cumulative GPA of 3.0 or higher; applicants must also be a volunteer in regard to the I-500 Snowmobile Race or a member of the volunteer's family

Selected by: recommendation by the I-500 Snowmobile Committee

C.G. "Sandy" Sanderson Endowed Scholarship

Value: variable — renewable

Criteria: merit based; graduates of an Upper Peninsula high school; based on GPA and ACT scores

Sault/Loretto High School Memorial Scholarship

Value: \$500 — renewable

Criteria: merit based; graduates of Sault Area High School; selection is based on GPA and ACT scores; if a graduating senior is not available, the scholarship may be awarded to a current LSSU student who is a Sault High graduate.

Catherine M. Sherry Memorial Scholarship

Value: \$1,000 — non-renewable

Criteria: merit based; graduating Sault Area High School senior who is admitted to LSSU by April 1 of his/her senior year; minimum 3.25 GPA

Selected by: recommended by the Sault Area High School Faculty Honors Committee

Dr. Kenneth J. Shouldice Memorial Scholarship

Value: variable — renewable

Criteria: merit based; enrolled at least half time at the main campus or regional location; incoming freshmen must have a 3.0 or higher high school GPA; currently enrolled LSSU students with at least 26 earned LSSU credits and maintain a 3.0 or higher college GPA

Judson "Bucky" Swart Soo Lions Club Memorial Scholarship

Value: variable — renewable

Criteria: merit based; graduate of a Chippewa, Luce or Mackinac County high school

Note: If there is not an eligible candidate from Chippewa, Luce or Mackinac County, a candidate from the Eastern Upper Peninsula may be considered. In the event a graduating senior is not available for the scholarship, it may be awarded to a current LSSU student who is a graduate of a high school in Chippewa, Luce or Mackinac County

Curriculum: business and/or economics

Earl and Minnie Walker Endowment Scholarship

Value: variable — up to full tuition — renewable

Criteria: merit and need based

Izaak Walton League of America Lock City Chapter Endowed Scholarship

Value: variable — non-renewable

Criteria: merit and need based; graduate of Sault Area High School

Curriculum: fisheries and wildlife management

Lottie, Florence and Dorothy Weinreich Memorial Scholarship

Value: \$1000 — renewable

Criteria: merit based; preference given to graduates of an EUP high school

Harold Weiss Memorial Scholarship

Value: variable — renewable

Criteria: merit and need based; minimum 3.0 GPA; Michigan resident

Curriculum: criminal justice

Eugene Welch Endowment Scholarship

Value: variable — up to full tuition and books; renewable

Criteria: merit and need based; must be a resident of Michigan

Current Students

Students that did not receive a scholarship upon entering LSSU may compete for one of these scholarships. Scholarship "sign up" periods are held in October and February each year for available scholarships. Students can sign up for open scholarships in the Financial Aid Office or in the department making the selection.

All recipients in this section are selected by the Financial Aid Committee (unless otherwise stated) and may choose any degree curriculum offered by the University (unless otherwise stated).

All current student scholarships require a minimum cumulative 3.0 GPA and 26 earned LSSU credits

(unless otherwise stated). Students who are selected must be making normal satisfactory progress toward a degree and should not exceed 124 earned credits, except for fifth-year teaching internships.

Scholarships selected by academic departments can usually be combined with other LSSU scholarships, provided the total award does not exceed the cost of tuition and fees. Academic department scholarships are typically awarded in the spring semester for the following academic year. You should check with your academic department for sign-up requirements.

All renewable scholarships are based on the recipient meeting the University's scholarship renewal criteria.

William R. Gregory Trust Fund

Value: variable — renewable

Criteria: merit based; junior status; minimum 3.0 GPA

Curriculum: engineering, mathematics, business, biology or fisheries and wildlife management

Thomas J. O'Neil Memorial Scholarship

Value: \$1000 — renewable

Criteria: merit and need based; resident of the Eastern U.P.; earned at least 26 LSSU credits; minimum 3.0 GPA

Note: If there is not an eligible candidate from the E.U.P., Michigan residents may be considered

Curriculum: human services. If there is not an eligible human services major, a student entering into the field of teaching may be considered

Parker True Value Hardware Scholarship

Value: variable — renewable

Criteria: need based; must be a full-time student; earned at least 26 credits in a business administration major; must have graduated from a high school in Chippewa, Mackinac or Luce County

Curriculum: business administration

Sault Ste. Marie Business and Professional Women's Scholarship

Value: variable — renewable

Criteria: student who has returned to college after at least a two-year interruption and who has established a college cumulative GPA of 3.0 after two semesters of study; restricted to applicants from Chippewa, Mackinac or Luce County

SMO Foundation Endowed Scholarship

Value: variable — renewable

Criteria: merit and need based; sophomore status; must be a resident of Chippewa, Mackinac or Luce County; minimum 3.5 GPA

Curriculum: pre-medicine or pre-pharmacy

Society of American Military Engineers Scholarship

Value: variable — non-renewable

Criteria: merit based; applications to be made to the dean of the School of Engineering Technology and Mathematics

Curriculum: engineering or engineering technology

Selected by: recommendation of the SAME Executive Committee

Edward and Hazel Stephenson Foundation Scholarship

Value: variable — non-renewable

Criteria: merit based; minimum 3.0 GPA; must be a full-time student; earned at least 26 LSSU credits

Tendercare Endowment

Value: variable — renewable

Criteria: merit and need based; minimum 3.0 GPA; earned at least 26 LSSU credits

Curriculum: human services

Daune Weiss Memorial Scholarship

Value: variable — non-renewable

Criteria: merit based; preference given to students from Otsego and Mackinac Counties

Curriculum: elementary/secondary education or business

Arts and Letters Department

Fine and Performing Arts Scholarship

Value: variable — renewable

Criteria: merit based; incoming freshmen students must have a minimum 3.0 GPA; current students must have a minimum 3.0 GPA

Curriculum: any degree curriculum offered by the University with preference given to students majoring in one or more of the Fine and Performing Arts programs

Selected by: recommendation by the Fine Arts Department

Milton Scherer Memorial Endowed Scholarship

Value: variable — renewable

Criteria: merit based; awarded annually to a sophomore; minimum 3.0 GPA

Curriculum: major in history with minor in geography

Selected by: recommendation by the School of Arts, Letters and Social Sciences

Athletic Department

Marian and Raymond Chelberg Outstanding Science Athlete Scholarship

Value: variable — renewable

Criteria: minimum 3.0 GPA, demonstrated leadership abilities and excel in at least one varsity sport; awarded at end of junior year; earned at least 30 LSSU credits

Curriculum: natural science

Selected by: recommendation by the Athletic Department

Ronald "Bud" Cooper Endowment Scholarship

Value: variable — non-renewable

Criteria: The scholarship allocation goes to women's sports on a rotating basis if allowable by NCAA regulations: softball, tennis, volley ball and cross country. The sports are listed in priority order. In the event that there is not an eligible recipient according to the

rotation above, a student from the sport next in line should be selected. The displaced sport reverts to the next year's top priority.

Selected by: recommendation by the Athletic Department

Jim Fallis Endowed Athletic Fund

Value: variable — non-renewable

Criteria: merit based; earned at least 26 LSSU credits; have been an All-American honoree the previous academic year; be an enrolled student athlete and eligible per NCAA rules covering participation in varsity sports at LSSU; minimum 2.5 GPA; due to NCAA rules, an individual who is receiving full equivalency grant-in-aid is not eligible; in the event that no student athletes meet these guidelines, the selection committee may select an individual who has excelled in his or her sport and in the classroom

Selected by: recommendation by the Athletic Department

Katherine E. Jackson Memorial Scholarship

Value: variable — renewable

Criteria: merit based; resident of Michigan or Ontario; member of the LSSU hockey team at time of selection

Selected by: recommendation by the LSSU hockey coach

Dr. Harry Pike Award

Value: variable — non-renewable

Criteria: merit and need based; all student athletes from Michigan are encouraged to apply

Note: This annual scholarship will be awarded on a rotating basis, if allowable by NCAA regulations, to a sport not fully funded and not supplemented by the "Bud" Cooper Endowed Scholarship in a given year. The sports will be listed by priority to determine the rotation basis. In the event there is no eligible recipient according to the rotation list, a student from the sport next in line will be selected. The

displaced sport will revert to the next year's top priority.

Selected by: recommendation by the Athletic Department

Gil Somes Endowed Award

Value: variable — non-renewable

Criteria: full-time student working as a student equipment manager or student athletic trainer for the LSSU Athletic Department; minimum cumulative 2.50 GPA; preference given to student with demonstrated financial need; if there is no eligible candidate, a student-athlete working with the Athletic Department may be considered

Selected by: recommendation by the Athletic Department

Chris Yanni Memorial Award

Value: variable — non-renewable

Criteria: merit based; recipient must be one of the top-seven runners of the LSSU men's cross country team; made significant contributions to the success of the cross country program; minimum 2.0 GPA; be a citizen of Canada or the United States (preference will be given to those applicants from Northern Ontario or Michigan); must have run for the LSSU cross country team for at least one full season and be returning to LSSU and competing for the cross country team the following year; must be a strong advocate for athletics and the virtues of clean, healthy living

Selected by: recommendation by the Athletic Department

Biology and Chemistry Department

Dr. Arthur Duwe Memorial Scholarship

Value: variable — non-renewable

Criteria: merit based; may be a Michigan resident or non-resident, enrolled full time; minimum 3.0 GPA

Curriculum: awarded in the spring of his/her junior year to a

medical technology student for his/her year of internship. If a qualified medical technology student is not available, the award may be given to a senior in biology, fisheries and wildlife, or environmental science

Selected by: recommendation by the Biology and Chemistry Department

Gilbert Gleason Fisheries and Wildlife Scholarship

Value: variable — renewable for senior year

Criteria: merit based; junior or senior status; students who do not qualify for federal grants; earned at least 56 LSSU credits; minimum 3.0 GPA prior to the fall of the junior year

Curriculum: fisheries and wildlife; biology major may be considered if there are no eligible fisheries and wildlife majors

Selected by: recommendation by the Biological Science Department

Business Department

Central Savings Bank Scholarship

Value: variable up to tuition and books — renewable

Criteria: minimum 3.0 GPA after two or more semesters of study; applicants must submit a resumé and a transcript of grades; preference to students who have graduated from high school in the Eastern Upper Peninsula or the Algoma District of Ontario who have an interest in seeking full-time employment in the field of banking in the Eastern Upper Peninsula. This scholarship provides assistance to a student who intends on pursuing a career in banking in the EUP. The bank also provides part-time employment during the school year

Curriculum: finance and economics

College of Business & Economics/Lambda Scholarship

Value: \$500 — non-renewable

Criteria: merit based; junior or senior status; earned at least 26 LSSU credits; minimum 3.0 GPA; demonstrated campus/community leadership and dedication to working in the business profession

Curriculum: business

Selected by: recommendation by the Lambda/School of Business Scholarship Committee

Criminal Justice Department

Criminal Justice Scholarship

Value: \$500 — non-renewable

Criteria: merit and need based; junior or senior status; minimum 3.0 GPA; enrolled full time; involvement in extracurricular college activities

Curriculum: criminal justice

Selected by: recommendation by the Criminal Justice Department

Geology Department

Geology Club Scholarship

Value: variable — non-renewable

Criteria: merit based; junior or senior status; active membership in the Geology Club; exceptionally good academic record in geology; earned at least 26 LSSU credits

Curriculum: geology

Selected by: recommendation by the Geology Department

Math and Computer Science Department

Franklin Otis Award

Value: variable — non-renewable

Criteria: earned at least 26 LSSU credits; minimum 2.5 GPA overall and minimum 3.0 GPA in computer science and mathematics courses; must be a resident of Michigan, Wisconsin or Ontario at time of application. Applicants should send letter of application addressing their qualifications to the designated mathematics faculty member the first week of October.

Curriculum: computer science or math

Selected by: recommendation by the Mathematics and Computer Science Department

Gerald Samson Mathematics Scholarship

Value: Variable — non-renewable

Criteria: merit based

Curriculum: computer and mathematical sciences

Selected by: recommendation by the Mathematics Department faculty

Natural Resource Technology Department

Christopher W. Reinke Endowment Award

Value: full tuition — non-renewable

Criteria: merit and need based; sophomore status only; GPA between 2.0 and 3.0; sincere interest and dedication in the natural resources technology field

Curriculum: natural resources technology

Selected by: recommendation by the Natural Resource Technology Department

Nursing Department

Chippewa County Hospice Scholarship

Value: \$500 — non-renewable

Criteria: merit based; minimum GPA of 3.0; junior or senior status in the nursing program; at least six credits per semester; must submit a typed short letter (150 words or less) indicating interest in Hospice and area of focus

Curriculum: nursing

Selected by: recommendation by the the Nursing Department

Chippewa County War Memorial Hospital Auxiliary Nursing Scholarship

Value: \$500 — non-renewable

Criteria: merit based; full-time nursing student; sophomore or junior status; minimum 3.0 GPA; graduated from a Chippewa County high school

Note: If there is no qualifying candidate, a graduate from an E.U.P. high school may be considered

Curriculum: nursing

Selected by: recommendation by the Nursing Department

Cunningham Nursing Scholarship

Value: \$1000 per year — non-renewable

Criteria: full-time nursing student; sophomore or junior status; minimum 3.00 GPA; preference to student with demonstrated financial need; essay required

Selected by: recommendation by the Nursing Department

Vivian M. Day Endowed Nursing Scholarship

Value: variable — non-renewable

Criteria: merit based; earned at least 26 LSSU credits; demonstrated leadership and dedication to the profession; graduated from an Upper Peninsula high school; be enrolled as a full-time nursing student; minimum 3.0 GPA

Selected by: recommendation by the Nursing Department

Tempie Dubow Memorial Scholarship

Value: variable — non-renewable

Criteria: merit based; at least sophomore status; minimum 2.75 GPA; demonstrated ability to relate to others, including patients; local applicants receive top consideration

Curriculum: nursing

Selected by: recommendation by the Nursing Department

Alana Eitrem Memorial Endowment Award

Value: variable — renewable

Criteria: merit and need based; admitted to the nursing program; graduated from a Chippewa County high school; minimum 2.0 GPA

Curriculum: nursing

Selected by: recommendation by the Nursing Department

**Gerontological Nursing
Scholarship**

Value: \$500 — non-renewable

Criteria: minimum 3.0 GPA; earned at least 26 LSSU credits; demonstrated interest in serving elderly clients

Curriculum: nursing

Selected by: recommendation by the Nursing Department

**Dixie Stanley Light and Morton
Light Nursing Growth Scholarship**

Value: variable up to \$1,500 — renewable

Criteria: merit and need based; registered nurse of Michigan or Ontario admitted to the LSSU baccalaureate nursing post-licensure track; enrolled in a minimum of one LSSU nursing or support course each semester during the academic year; minimum 3.0 GPA; must submit a 500-word essay to explain their valuing of nursing as a service and a career

Curriculum: nursing post-licensure track

Selected by: recommendation by the Nursing Department

**Mae Markstrom Nursing
Scholarship**

Value: full tuition — non-renewable

Criteria: merit based; must be at least sophomore status; minimum 3.25 GPA; resident of Michigan; must show demonstrated leadership and commitment to nursing; preference will be given to members of the Lake Superior State Nursing Association or Michigan Nurses' Association

Curriculum: nursing

Selected by: recommendation by the Nursing Department

**War Memorial Hospital Medical
Staff Nursing Scholarship**

Value: variable — renewable

Criteria: merit and need based; must be college sophomores or juniors in the BSN or BSN completion program as full- or part-time students; must be from the tri-county area; minimum 3.0 GPA

Curriculum: nursing

Selected by: recommendation by the Nursing Department and a member of the War Memorial Hospital staff

**Political Science
Department**

Patrick M. Gagliardi Scholarship

Value: variable — renewable

Criteria: merit based; must be a permanent resident of Emmet, Mackinac, Chippewa, Luce, Schoolcraft or Alger Counties; preference given to student with demonstrated financial need; may be incoming freshman or student with 26 LSSU earned credits

Curriculum: political science

Selected by: recommendation by the Political Science Department

Psychology Department

**Donald Hastings Memorial
Scholarship**

Value: variable — renewable

Criteria: merit based; may be Michigan residents or non-residents; enrolled full time; minimum 3.0 GPA

Curriculum: junior majoring in psychology

Selected by: recommendation by the Psychology Department

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

Recreation Department

Russell D. Bruce Recreation Department Scholarship

Value: variable — non-renewable
Criteria: minimum 3.0 GPA; based on leadership and service contributions to the Recreation Club and Lake Superior State University; awarded at the conclusion of the spring semester of the junior year

Curriculum: recreation
Selected by: recommendation by the Recreation Department

Social Sciences Department

Osborn Scholarship in Political Science & History

Value: variable — non-renewable
Criteria: merit and need based; resident of Michigan; minimum of sophomore status; academic performance and potential for leadership in his or her chosen field

Curriculum: political science or history
Selected by: recommendation by a committee of political science and historians appointed by the head of the Social Sciences and Human Services Department

Teaching Department

Robert O. Wallis C-MARSP Memorial Scholarship

*(formerly Chippewa-Mackinac Area
Retired School Personnel Scholarship)*

Value: variable — non-renewable
Criteria: merit and need based; resident from Chippewa or Mackinac County; currently enrolled LSSU students with at least 26 earned LSSU credits and a minimum 3.0 GPA

Curriculum: teaching (preference will be given to fifth-year teaching students)

The following scholarships may be awarded to current students based on availability:

Kurt and Mary Brammer Scholarship

John E. Brown Memorial Scholarship

ESP Endowed Award

Fine & Performing Arts Scholarship

H. Fletcher Distinguished Scholarship

Dennis Hardt Memorial Scholarship

Philip Hart Memorial Scholarship

Frank & Gladys Hoholik Scholarship

Hudson, Coates, Kline Scholarship

Robert M. Hunt Memorial Scholarship

John Kalesky Memorial Endowed Scholarship

Ernest Kemp Endowed Scholarship

George & Virginia Lahodny Endowment Scholarship

Larson/Prohazka Scholarship

LSSU Foundation Endowed Scholarship

Bill Munsell Scholarship

Leslie O'Polka Memorial Scholarship

Frank & Marion Pingatore Memorial Scholarship

Ross N. Roe Scholarship

Sault/Loretto High School Memorial Scholarship

Dr. Kenneth J. Shouldice Memorial Scholarship

Judson (Bucky) Swart Soo Lions Club Memorial Scholarship

Izaak Walton League of America Lock City Chapter Endowed Scholarship

Harold Weiss Memorial Scholarship

*See Additional Scholarships for
Incoming Freshmen for more details.*

Other Scholarships

Michigan Competitive Scholarship

These State scholarships range from \$100 to \$1,300 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.
3. have scored at Level 1 (exceeded Michigan standards) or Level 2 (met Michigan standards) on mathematics, reading, science and writing, or passed at least two of the above-specified subject tests and scored in the top 25 percent on the ACT or SAT.
 4. have graduated from a Michigan high school or passed the General Educational Development (GED) test.
 5. never have been convicted of a felony involving assault, physical injury or death.

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 December ACT examination.

Michigan Merit Award Scholarship

Established in 1999, this program rewards the students who meet these eligibility requirements. Recipient must:

1. be a Michigan resident.
2. have completed the Michigan Educational Assessment Program (MEAP) test in high school.

The Michigan Merit Award is a merit-based scholarship, based on student achievement only. Financial need is not a consideration. Students may receive up to \$2,500 for academic year 2002-2003. Beginning with the high school graduating class of 2005, there will be an additional award of up to \$500 for students who perform well on the 7th and 8th grade MEAP tests.

Grant Programs

Federal Pell Grants

All students filing the FAFSA are automatically reviewed for Pell Grant eligibility. Pell Grants provide 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 financial need will receive a grant based on that need and on the cost of education at the post-secondary school they choose to attend.

Pell Grant amounts 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 and meet satisfactory progress standards.
3. be U.S. citizens or permanent residents or qualified Jay Treaty students.
4. not be in default on a Direct Stafford or Perkins Loan, and not owe a refund for a Pell Grant or other federal aid.
5. not be disqualified due to prior drug offense convictions.

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 or online at www.fafsa.ed.gov.

Federal Supplemental Educational Opportunity Grant

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).

Financial need is the primary consideration in the selection of grant recipients. Priority is given to the neediest Pell Grant recipients. Recipients are selected from those applying for all forms of financial aid by using the FAFSA.

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

Federal Occupational Education Program

The Perkins Grant Program provides funding for students with demonstrated financial need, as determined by filing the Free Application for Federal Student Aid (FAFSA), who are enrolled in certain associate's degree programs. Students who qualify for the Federal Pell Grant and have earned less than 72 credits will automatically be considered if enrolled in one of the following associate's degrees:

- manufacturing engineering technology
- early childhood education
- legal assistant studies
- substance abuse prevention and treatment
- natural resource technology
- corrections (criminal justice)
- law enforcement (criminal justice)
- fire science
- technical accounting
- office administration
- business administration
- certification in information processing

This grant provides supplemental funding for qualified students and may be pro-rated for less than full-time attendance.

The Lake Superior State Board of Trustees' Grant Program

This program provides assistance to incoming and currently enrolled students based on financial need. Preference is given to those whose financial need is greater than one-half the cost of education. Recipients must be Michigan residents and enrolled full time in Lake Superior State University classes.

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. Recipients must be Michigan residents for the prior 12 months, U.S. citizens making satisfactory academic progress and have demonstrated financial need.

Michigan Post-Secondary Access Student Scholarship (PASS)

This new grant program was introduced in 2000 for Michigan students pursuing associate's degrees at eligible schools. The program helps pay for tuition for up to two years of full-time enrollment at Lake Superior State University for students who meet the following conditions:

- have taken the high school MEAP tests
- Pell Grant eligible
- enrolled for at least six credits
- Michigan resident
- not a current TIP recipient

Students must be admitted into an eligible two-year program and file their FAFSA to determine their financial need. The State of Michigan will determine which students meet the above criteria and calculate the amount of their PASS award.

Michigan 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 but before

reaching age 20; be accepted for admission into an associate's degree program; and accept TIP by submitting certification while in high school. Acceptance must be filed before high school graduation.

Loans

Federal Perkins Loan

The Federal Carl Perkins 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,
6. full-time staff of Head Start Educational Program,
7. full-time provider of services to high-risk children at a child or family service agency.

Federal Direct Stafford Loan (Student)

Qualified applicants must be a United States citizen or eligible alien. Students 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 lifetime maximum amount is \$23,000. Eligibility is based on financial need for subsidized loans.

Subsidized loans are eligible for federal interest benefits. For subsidized loans, the federal government does not charge interest while attending school at least half time, during the six-month grace period, and during deferments (postponements of repayments). Financial need must be shown to receive this type of loan.

For students without financial need, the Direct Loan Program offers Direct Unsubsidized Loans. The federal government charges interest on these loans while attending school, in the grace period, or in deferment.

The student loan program is administered through the Financial Aid Office under the Direct Loan Program. A three percent loan fee is charged on all loans, under federal law. Loans are disbursed in two equal disbursements (one-half in the fall semester; one-half in the spring semester).

Once enrolled at Lake Superior State University, students must meet the satisfactory progress standards to be eligible for additional loans. Students must file a Free Application for Federal Student Aid each year to qualify for a student loan.



Repayment begins six months after graduation or the date the student attends school less than half time. Interest rates are variable, not to exceed 8.25 percent.

Federal Direct PLUS Loan (Parent)

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.

Students must meet the satisfactory progress standards to be eligible and must file a Free Application for Federal Student Aid each year to obtain a Federal Direct PLUS loan.

A four percent origination fee is deducted from each of two disbursements made in a school year. Repayment begins within 60 days of disbursements. Interest rates are variable but cannot exceed nine percent.

Federal Nursing Student Loan

The Nursing Education Loan Program provides loans of up to \$2500 a year for bachelor's degree or completion nursing programs. Eligibility requirements include United States citizenship, enrollment of at least half time and demonstrated financial need greater than one-half the cost of education. 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 at least 18 years old, 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 within 25 years. Forbearance, which allows postponing payment of principle and interest, is possible for a maximum of five years. Forbearance periods are approved for up to 12 months per request. Applications are available at the Financial Aid Office or by calling the Student Loan Authority at 1-888-643-7521.

Canada Student Loans

Canadian students who need financial help to enable full-time studies directed toward a degree at an institution of higher education may apply for aid through the Ontario Student Assistance Program.

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 taking at least 60 percent course load (eight credits);
6. complete an application for OSAP and send to address indicated in OSAP booklet with proper documentation, fee and copy of Social Insurance Card;
7. bring Program Information Form to the LSSU Registrar's Office to be completed and mailed by LSSU.

The loans are interest free for full-time students and until six months after graduation or termination of

full-time studies. After the interest-free period has expired, students are responsible for the repayment of principal and the interest on the outstanding balance at a loan rate in effect when repayment begins.

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 1-807-343-7260.

Short-Term Loan Funds

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 \$10 service charge is assessed on all loans.

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 Financial Aid Office.

Student Emergency Fund

Established in 2000 through the Bud Mansfield Endowment, this fund is used to assist students in crisis. Application for funds is made at the Financial Aid Office. Students with insufficient resources to meet textbook needs or other obligations may apply for one-time assistance through this fund.

Campus Employment

How to Apply

If you are interested in working on campus, you may apply at the

Office of Human Resources. There are more than 500 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 \$1,700 during the school year and up to \$4,000 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 Work-Study

If you have demonstrated financial need, you may be eligible for employment by Lake Superior State University under the federally supported Work-Study Program. You must file a FAFSA to be considered for this program and have financial need.

Students may work up to 19 hours weekly while attending classes more than half time. During the summer or other vacation periods when you do not have classes, you may work full time (40 hours per week) under this program. In four months of summer employment under the Work Study Program, an eligible student can earn up to \$3,500.

The basic starting rate tends to be commensurate with the current minimum wage. Higher rates are paid for highly specialized work.

America Reads Program at Lake Superior State University is another work study opportunity for students. Students work as reading tutors in the local elementary schools and are paid through the Federal Work-Study Program. Interested students should request this unique employment experience when submitting their applications for employment at the Office of Human Resources.

Michigan Work Study

Undergraduates who have been Michigan residents for at least 12 months, have financial need, are enrolled at least half time and making satisfactory academic progress may be eligible for employment under the Michigan Work-Study Program. You must file a FAFSA to be considered for this program and have financial need.

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 tribe showing need, may apply for Bureau of Indian Affairs Scholarship Grants by contacting 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: Native 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 tribe.

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

Native American Tuition Waiver

— Value: full tuition waiver for qualified North American Indian students who have been residents of Michigan 12 months prior to enrollment.

Applicants must submit a certification of one-quarter blood quantum to their tribal chairperson or tribal certification officer. The Intertribal Council 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 credit for the tuition for eligible students each semester. Students must be accepted for admission into an eligible program and submit their certification of eligibility prior to starting classes.

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. 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 dismissal 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. They 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. 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.



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. There is always something going on so you can be a part of the campus scene.

We have 11 sports at Lake State: basketball, cross country and tennis for men and women; ice hockey, golf and track for men; and volleyball and softball for women. Women's track may be added for spring 1999. In addition, the University has an extensive intramurals program including sports such as broomball, basketball, hockey and more.

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

Student Government is 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.

Student Professional: Alpha Phi Sigma (CJ Honor Society), American Society of Mechanical Engi-

neers, Biology Club, Criminal Justice Association, Criminal Justice Student Alliance, Early Childhood Education Club, Environmental Science and Technology Club, Fisheries and Wildlife Club, Geology Club, Institute of Electrical Electronic Engineers, LSSU Nurses Association, Lambda Sigma Beta, Legal Assistant Student Association, Political Science Club, Pre-professional Club, Psychology Club, Society of Mechanical Engineers.

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

Special Student: Alpha Theta Omega Sorority, Circle K Club, Delta Phi Epsilon, Delta Sigma Phi, Environmental Awareness Club, Honors Club, Inter-Greek Council, Japanese Animation Club, LSSU Veterans' Association, Lake State Theater Company, Lifeguard Club, Men of Brady, Native American Student Organization, Non-traditional Student Organization, Osborn Hall Government, Paintball Club, 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, United Nations Association.

Student Music: Pep Band.

Communications: *The Compass* (student newspaper), WLSO (student radio station), and *The Campus Planner* (available at the Campus Shoppe and the Student and Residential Life Office).

Housing

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 Affairs.

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 Affairs, 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) with-

drawal 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.

Dining

The Quarterdeck is a full-service cafeteria offering three meals a day. A complete and modern cafeteria, the ‘Deck is in the Walker 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 Center.

Athletics

Lake Superior State University sponsors varsity intercollegiate athletics at the NCAA Division II level in 11 sports; men’s and women’s basketball, tennis, cross country and track; men’s golf; and women’s volleyball and softball. Ice hockey is a Division I sport for men.

The University is a member of the Great Lakes Intercollegiate Athletic Conference (GLIAC) in Division II sports, and competes in the Central Collegiate Hockey Association (CCHA) in 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 our counseling and testing services. Professional counselors are available at the Counseling and Testing Center (located in South Hall) to help with personal or vocational problems. Counseling staff also serve as academic advisors to those students who are not certain about their major or career choice.

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 include all orientation test results for our students. If you wish to have your scores interpreted, simply make an appointment at the center.

The center's services are free to students and strict standards of confidentiality are maintained.

Health Service

Basic health care services are available at the LSSU Health CARE Center. The center is staffed by health care professionals. Full-time staff include a certified nurse practitioner and professional nurses. Consultation and referral to physicians is available through the center. Services are available from 8 a.m.- 5 p.m. Hours of operation are reduced during summer semester and University breaks. You can drop in or phone the center any time during office hours to make an appointment.

A health care plan is available for students who maintain three or more credit hours and attend classes on campus. Once enrolled, you will receive information outlining coverage. Plan information is also available at the center. You are encouraged to review this plan and services. The majority of onsite services are provided at no additional charge to students.

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 a 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 students.

Upward Bound

Upward Bound is a federally funded TRIO program which LSSU has successfully hosted since 1965. This is a free college-preparatory program for low income students and/or students whose parents do not have college degrees. The program provides academic support, career exploration and advising, and cultural growth experiences designed to enhance educational success. Upward Bound works with these students year-round throughout high school to prepare them to enter and succeed in post-secondary education. The program serves about 70 students each year from six area high schools within an hour's drive from LSSU's campus.

Upward Bound hires at least 25 college students each year as tutors and office workers during the academic year and for residential

jobs during the summer. The program is one of the few sites offering paid summer internships for students in human services, psychology, sociology, teacher education and criminal justice.

Child Development Center

The campus Child Development Center provides full- or part-time care for children ages 2 1/2 to 5 years. Children of LSSU students and employees are given priority in admission; however, children from the community can be admitted as space allows. Children must be near completion of their toilet-training. The center, licensed by the State of Michigan Family Independence Agency, provides developmentally appropriate experiences for the child and emphasizes social, emotional, creative, physical and cognitive growth. Each morning and afternoon, under the guidance of experienced staff, students enrolled in the early childhood education program plan and supervise large and small group activities including art, language arts, gross motor, fine motor, and outdoor play. A significant portion of each day is devoted to exploratory play where children move through the various learning areas electing to participate in any one of a wide variety of activities interacting with developmentally appropriate learning materials. The Child Development Center is located at the southeast end of campus.

Student-Faculty Relations Committee (Appeals)

Function. The Student-Faculty Relations Committee provides a forum for resolving conflicts between students and faculty members which may arise with classroom or course-related activities, policies or procedures. The

committee will not consider cases involving ADA compliance or any other matter it deems inappropriate. This committee is strictly an informal mediation body which will forward recommendations for resolution to the parties involved (with a copy to the executive vice president and provost).

Membership. The University president appoints the committee membership to two-year terms. There are four faculty representatives (at least one from each college) and four student representatives. The chair is chosen by the committee membership.

Procedures

1. If a student (or group of students) wishes to raise an issue related to a course which he/she is taking or has taken (normally within one semester), the student should attempt to resolve the issue at the student/faculty, department head or appropriate college dean level. If the matter cannot be resolved at the lowest possible levels, the student may appeal to the Student-Faculty Relations committee informing them of the problem. In exceptional cases, the student may approach the Student-Faculty Relations Committee directly.
2. To bring an issue before the Student-Faculty Relations committee, the student must notify the Student-Faculty Relations Committee in writing. This document must clearly explain the situation and include the student's name, current address, a message telephone number and times when the student is available to meet with the committee. Supporting documentation may be included as well. The written appeal should be submitted directly to the committee chair. The Executive Vice President and Provost's Office will know

the name of the committee chair.

3. Once the committee members have had an opportunity to review the student's concern, they will conduct an informal fact-finding process. As a part of the process, the student will be invited to meet with the committee for further clarification. This meeting will be 20 minutes in length with 10 minutes of question and answer by the committee. The other party will also be invited to meet with the committee following the same format. Both parties will then be asked to meet together with the

committee in an effort to foster communication, clarification and resolution. The most desirable arrangement would be for this step to occur at one setting. The committee will strive to be as expeditious as possible. There may be extenuating circumstances such as semester break or summer recess.

4. If there is no resolution after this joint meeting of the parties involved, or if the outcome of this process is not acceptable to the student or the faculty member, he/she may appeal to the executive vice president and provost of the University.
5. The committee will keep no permanent records.



Computer Services

LSSU Information Technology offers a variety of services and programs for students. Classroom laboratories provide for instruction that involves computers and/or software. During non-class hours, general access labs provide copies of the software used in classes, open Internet access to students, as well as word processing software. Help for students utilizing software in the classroom or labs is available in the Learning Center. PCs enhance the research ability of the KJS Library with access to the Internet and many databases. Word processing software is also available here. The University maintains a student-to-computer ratio of 10-1 whenever possible. On enrollment, a student is eligible for an Internet email account. This account is free to any enrolled student. Instructions and help for setting up and using these accounts are available

at the Information Technology HelpDesk in the Administration Building. Internet access is also available in student residences both on and off campus. All residence halls can provide Ethernet connectivity to the Internet. Dial-in connections are available for off-campus use.

The Information Technology HelpDesk is located in the Administration Building, room 107. The HelpDesk assists students with general computing problems related to any of the above services. Instruction manuals and support appointments are also offered to students who wish to access the Internet from home. Current information concerning availability can also be obtained from our Web Site at <http://it.lssu.edu>.



Continuing Education

www.lssu.edu/conted

Continuing Education (CE) provides educational opportunities for non-traditional students in LSSU's service region. In cooperation with academic departments, CE creates opportunities to meet the educational needs of adult students through alternative delivery options such as distance learning, flexible schedules, evening and weekend degree programs and off-campus degree programs. Continuing Education provides a focus for external and off-campus degree programs, 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. Continuing Education also administers LSSU's summer session.

Regional centers are located at Alpena Community College in Alpena, Bay de Noc Community College in Escanaba and North Central Michigan College in Petoskey. Students may earn bachelor of science degrees in business administration-management, accounting, nursing (BSN completion program for registered nurses), criminal justice/generalists, individualized studies, liberal studies and engineering management. All degree completion requirements may be completed at the off-campus sites. Courses are offered evenings and weekends on a part-time basis. The time required to complete the degree varies according to each student's individual schedule and the number of college credits already completed.

The Continuing Education Office offers professional development opportunities through non-credit courses, seminars, workshops, interactive television and video conferences.

In addition, CE provides training and development programs with business, industry, government, volunteer and social agencies to deliver consulting and customized training programs.

Community enrichment courses (EdVentures) include courses and activities for adults and children. Adult enrichment courses include computers, exercise, crafts, art, language, personal finance and gardening and more.

Elderhostel is a nonprofit educational travel program for participants 60 years or older. CE has been successfully offering the Elderhostel experience for over 20 years.

Lake Superior Elders (LSE) addresses the needs of retired and semi-retired adults through continued educational pursuits. This "learning in retirement center", which is associated with Elderhostel International, has a monthly program featuring guest speakers on various topics. Participants take mini-courses which are scheduled on a three-month basis, vary in number of sessions, and are designed by the organization's curriculum committee.

Location: Continuing Education is located on the corner of Meridian Street and Easterday Avenue (across from the Norris Center).

Mission Statement:

Continuing Education delivers educational opportunities to meet the needs of non-traditional students through degree programs, professional development, personal enrichment and community outreach.

Vision Statement:

Our vision is to create and maintain a welcoming and personal environment by identifying and meeting the unique goals and educational needs of the non-traditional students and the community we serve.

• Distance Education

• EdVentures

Professional Development
Community Enrichment
Lake Superior Elders & Elderhostel
Customized Training

• Evening & Weekend Courses

Degree Completion Programs
Certificate Programs

• Regional Centers

Alpena
Escanaba
Petoskey

• Summer School

The Kenneth J. Shouldice Library

The newly remodeled and expanded Kenneth J. Shouldice Library provides a variety of resources and services. It is the heart of the University, and is home to more than 132,000 volumes of books, 17,500 bound volumes of periodicals, 265,000 microforms, over 72,000 paper government documents, and a

diverse collection of computerized equipment and resources.

The current yearly subscription list exceeds 900 individual titles, in addition to subscriptions to electronic full-text journals and newspapers. The library has been a selective depository of U.S. government publications since 1982. To assist faculty and students in obtaining materials from other libraries, the library provides interlibrary loan service through OCLC, a computer service linked to libraries with access to more than 37 million books, periodicals and other materials. The library is a member of an Upper Peninsula consortium of 105 libraries.

Library facilities include stacks open to all faculty, students and community members; study areas and group study rooms; microform readers and printers; audio-visual equipment; black and white photocopy machines; equipment for making transparencies; and other materials. Networked computers provide Internet and computerized catalog access, while others provide access to the library's CD-ROM collection and word processors. The Audio-Visual Center, on the main floor of the library, maintains a diverse collection of cassettes, filmstrips, games, kits, slides and video tapes. Reference librarians offer personal guidance in the use of the computerized catalog and databases, paper indexes, abstracts and bibliographies. Library instruction is in the state-of-the-art library instruction room.



International Studies

Go Global!



The International Studies Office, located in the Fletcher Center upstairs loft, offers the following services:

Foreign Study Programs

LSSU students may participate in study-abroad programs to meet their individual study objectives. The International Studies Office assists students by providing information regarding foreign study programs and coordinating the academic credit through the student's major academic department and advisor. Students' financial aid and scholarships normally apply for programs officially arranged through LSSU.

What do you think of ...

- studying French in France?
- studying English in England?
- studying Spanish in Spain or Mexico?

And how about studying ...

- recreation management in Australia?
- business administration in London?
- engineering in Australia?
- environmental science courses and internships in Japan?

These are only a few of the options. Please visit the International Studies Office for more information.

International Studies Certificate or Minor

The international studies certificate or minor can be earned concurrently with a B.S. or B.A. degree

program or as a post-baccalaureate program. Refer to the *Certificate or Minors* section of this catalog — or ask for the International Studies brochure at the International Studies Office.

English as a Second Language Programs

The International Studies Office offers ESL courses to foreign students. Many of the ESL programs and opportunities are designed for special-interest groups.

Foreign Student Services and Recruitment

The International Studies Office researches and maintains up-to-date information regarding INS (U.S. Immigration and Naturalization Service) regulations and procedures. Information bulletins are available for international students (including Canadian students) regarding study and authorized employment (full-time students). Educating the campus community of international issues is of prime importance. **Visit the International Studies Office for reference materials.**

The International University College Division

of Lake Superior State University and Sault College

Lake Superior State University, in Sault Ste. Marie, Michigan, and Sault College, in Sault Ste. Marie, Ontario, are just a 15-minute car ride apart. In spite of being located in different countries, our cities are closer to each other than they are to municipalities in their home state or province. So, community leaders encourage initiatives that strengthen the ties between us and take advantage of shared resources. The belief is we have more to offer by working together.

Lake Superior State University and Sault College have enjoyed a good working relationship for many years. In 2001, some articulations were revitalized, new ones were struck and it was decided to establish the International University College Division. The division allows full-time students in some program areas to be dual-enrolled. In computer science/studies, criminal justice or liberal studies/teacher education, agreements have been signed which encourage students to take advantage of the diverse faculty and resources available at both schools as they pursue their degrees and/or diplomas.

Getting involved in the International Division is straightforward — consult with the academic department, fill in a Dual Enrollment Form and submit it to the Registrar's Office. As a dual-enrolled student, you are permitted to take one course per semester at the other school. Through the extra advising available to you, you can fit these courses into your overall academic plan and semester timetables. You register for all courses through your home school registrar and your academic information is transferred auto-

matically at the conclusion of each semester. As long as you meet the required academic standards, you will continue to enjoy these advantages of attending both schools:

- the combination of applied, "hands-on" training and theoretical understanding
- more course choices
- access to many of the student services and academic resources (e.g. wider selection of equipment, libraries, student centers, peer tutoring, etc.) available at both institutions
- accessible professors through small classes, labs and office hours
- interaction with fellow students from another country — a good basis for a network of contacts that can assist you in your life's work ahead
- greater employment options and advancement opportunities

Dual-enrolled students pursuing the bachelor of science in computer science or computer networking gain these particular benefits:

- professors with a wide variety of computer-based qualifications and areas of expertise
- exposure to, and opportunity to work with, more types of hardware and software than would be available at either institution on its own
- plenty of equipment available for hands-on experience
- more than 70% of the major courses with a lab component
- opportunity to earn world-recognized CISCO CCNA and Microsoft MCSE certifications

- Innovative, relevant programs which adjust quickly to both changing technology and employers' needs

For more specific information regarding computer-based degrees and participation in the International University College Division, please refer to page 108 of this catalog.

Dual-enrolled students in the criminal justice degree programs benefit from the continuing education opportunities developed by both schools for people currently working in public safety. LSSU does this through its academy,

providing MCOLES (Michigan Commission on Law Enforcement Standards) and Michigan Firefighter Training Council certification. Sault College offers advanced training and certification for Ontario Provincial Police and municipal police officers at its Law Enforcement Training Centre.

Refer to www.saultc.on.ca for more information about Sault College's participation in the International University College Division. You can also visit LSSU's website at www.lssu.edu/advantage.



Degree Requirements

Lake Superior State University offers bachelor's (also called baccalaureate) degrees, associate's degrees and certificates, as well as a master's degree in business administration. 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 elsewhere in this Catalog — either by curriculum or in one of the college sections. However, some requirements 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. Requirement categories are: general education, bachelor of arts or bachelor of science and departmental. Some programs require support courses and/or a minor, and free electives.

Associate's degrees and certificates: A minimum of 62 credits is required for an associate's degree. EN110, EN111, SD101, MA110 (or higher) or PL205, plus six other general education credits, are required. 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. A minimum of six credits from LSSU is required. There is a minors section in this Catalog.

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.

BA and BS Requirements (8 credits)

Bachelor of arts degree: One year of a modern language other than English (if taken at LSSU, this would be FR151-2 or 251-2; GN141-2; NA141-2; NA201-2; SP161-2 or 261-2). One-half year of two different 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.

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 credits and at least 50 percent of their departmental required 300/400 level credits in courses offered by Lake Superior State University. Associate's 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.

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 college dean and/or school chair for each major. The double major must be granted as one combined degree such as:

bachelor of science in accounting and business administration.

Multiple Degrees: If you desire to earn more than one baccalaureate degree, you must complete all program requirements for the additional degree(s) as certified by the appropriate dean, 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's degree, must complete all requirements for the associate's degree program at the time they are completing the bachelor's degree requirements.

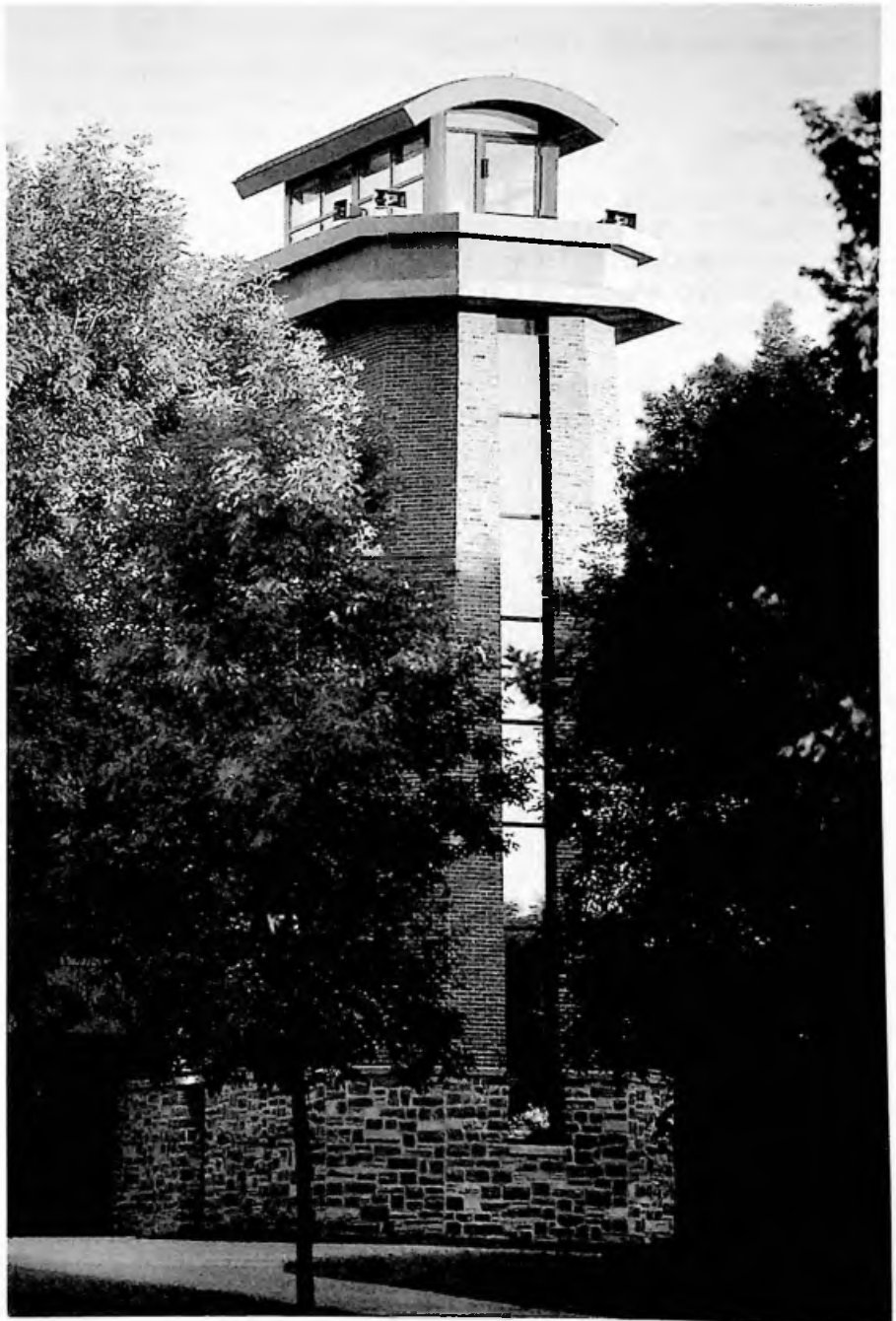
Students earning an associate's from LSSU who desire an additional associate's degree must complete all requirements for the additional degree, including 16 additional credits of which 12 must be from courses offered by Lake Superior State University.

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 LSSU, 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 school chair, college dean and assistant to the provost for academic records. You should initiate the approval process with the school 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 school chair and/or college 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.

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 school and college, be required even though the total may exceed 16 credits.



General Education Mission Statement:

Lake Superior State University's curricular offerings integrate preparation for professional, technical and disciplinary fields with study in general education to prepare students to lead lives as self-motivated individuals and full participants in society. The general education program is designed to enhance students' skills and interests in order to foster life-long learning and thoughtful living. General education courses integrate knowledge to assist students to make connections between the content of their courses and the challenges they face as free and responsible citizens.

The outcomes of general education in which students are required to acquire proficiency are communication skills, humanities, mathematics, and social and natural science.

Students Entering LSSU Before Fall 2002

Communication Skills

EN110
One class from EN205, EN210, EN215
SD101

Aesthetics

HU251
Three or four credits from:
AT250, AT251, FR360, FR370, HU240, HU252, HU255,
HU256, HU261, HU262, HU490, MU110, MU111,
MU112, MU113, MU140, MU141, MU160, MU161,
MU220, MU221, MU250, MU251, NA240, PL302

Mathematics or Statistics

Mathematics or statistics course at 100-level or higher with a grade of C- or higher
Statistics class from BA211, BL280, CJ345, MA110, MA207, MA308, MA309, PS211, PY210, SO302

Natural Science

Complete two natural science courses with labs
Eight credits from:
BL105, BL109, BL122, BL204, CH105, CH108 and 109,
CH115, CH116, GE111, GE112, GG106, GG108,
NS102, NS103 and NS104, NS110, NS116, NS119,
PH221, PH231

Social Science

Two courses (6-8 credits) from:
EC201, EC202, EC208, EC209, EC302
GG201, GG302, GG321, GG360
HS101, HS102, HS131, HS132, HS235, HS301, HS302,
HS310, HS315, HS316, HS331, HS332
NA320
PS110, PS160,
PY101,
SO101, SO102, SO113

Students Entering LSSU Fall 2002 or Later

Communication Skills

EN110
EN111
SD101

Humanities

HU251
One class from:
AT250, AT251, HU240, HU252, HU255, MU220,
MU221, NA240, PL302 or eight credits from second year of foreign language

Mathematics

Three to five credits
MA110 or higher or PL205

Natural Science

Complete two natural science courses (8 credits) from:
BL105, BL109, BL122, BL204, CH105, CH108 and
CH109, CH115, CH116, GE115, GE121, GE122, GG106,
GG108, NS101, NS102, NS103 and NS104, NS110
NS116, NS119, PH221, PH231

Social Science

Two courses (6-8 credits). Must choose courses from different disciplines.
EC201, EC202, EC208, EC209, EC302
GG201, GG302
HS101, HS102, HS131, HS132
PS110, PS160, PS241
PY101, PY155
SO101, SO102, SO113

One class (3-4 credits) from:
BA308, GG306, HE328, NA225, PS333, SO103, SO213,
SO225, SO226, SO321, TE250

Failed Classes

If you fail a class required for your degree program, you must repeat the class and receive a passing grade. If the failed class is no longer offered because of program changes and/or course deletions, the academic dean can substitute another similar class.

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 assistant to the provost for academic records.

Course substitutions and waivers of departmental degree program requirements may be granted only by the dean of the college 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.



Graduation Procedures

Degree candidacy procedure: Two semesters before students plan to complete degree requirements and graduate, they must submit an appropriate departmental degree audit for each major and minor, and a Declaration of Candidacy for Degree to the assistant to the provost for Academic Records. 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 school chair and/or dean of the college offering the major or minor program. Course substitutions and waivers of departmental degree program requirements may be granted only by the dean of the college 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 assistant to the provost for academic records.

The assistant to the provost checks students' Degree Audits, after which a preliminary verification of the Degree Audit is sent to each student and respective school 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, a potential graduate list is created for each semester. Names for the commencement program and diploma will be the official, legal name as listed in the records of the University. The names of students who are listed in the annual commencement pro-

gram are also compiled from Declaration of Candidacy for Degree forms. Students may not be listed in the commencement program unless their Degree Candidacy Form is filed with the assistant to the provost six weeks prior to commencement. Students are expected to attend commencement exercises unless excused by the assistant to the provost. 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 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 college dean and/or school chair and assistant to the provost give a final approval. Names of these graduates are then sent 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 the 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, may request a letter 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.

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.

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

Delinquent Accounts

Students with delinquent accounts may be removed from class, have their diploma withheld, and/or have transcript requests denied.

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 State 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).



Master of Business Administration

See College of Business and Economics, page 266.

The Board of Trustees of Lake Superior State University has phased out the MBA program by August 2003.

Master

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.

Admission Requirements

Applicants were no longer accepted after August 1, 1999.

The College of Business and Economics is working closely with all students who have been accepted to ensure that they have the opportunity to graduate by August 2003.

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's degree in business administration. 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 Professional 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 six credits.

EC304	Money & Banking	3
EC408	International Economics	3
EC407	Introduction to Econometrics	3
MK381	Consumer Behavior	3
MN375	Supply Chain Management	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 dean of the College of Business and Economics. You should retain copies of waiver/substitution documentation for your 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 your admission. The chair 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 by August 2003.

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.

Master of Business Administration

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 Continuing Education 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 Student Service Center. Courses dropped by the end of the eighth week of the semester will be assigned an *N* grade on the academic transcript.

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			

A minimum overall grade point of 3.00 (4.00 basis) is required with no more than six credits of "C" grades.

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.

Legal Assistant Studies

See College of Arts, Letters
and Social Sciences, page 246.

Post-Baccalaureate Certificate

(students must already possess
a bachelor's degree; see
admission requirements on the
following page.)

Post-Baccalaureate Certificate

Career Choices*:

Litigation Legal Assistant
Corporate Legal Assistant
Criminal Law Legal Assistant
Governmental Legal Assistant
Real Estate Legal Assistant

Student Profile:

Do you have ...

- an interest in the law?
- a desire and commitment to help others?
- a good work ethic?
- good verbal and written communication skills?
- detail orientation and good organizational skills?
- a well-established set of ethics?
- self-motivation, initiative and a positive outlook?
- good human relation skills?
- an ability to think logically?
- a willingness to learn new skills and to be challenged?

Program Description:

The legal assistant profession is one of the occupations projected to grow the fastest through the year 2010 according to the U.S. Department of Labor. A legal assistant (or paralegal) is a valued member of the legal team and works under the supervision of attorneys.

This program is designed to train qualified legal assistants capable of working in a variety of areas of the law and in a variety of work environments. Consequently, the role and job duties of a legal assistant vary depending on the areas of law and work environment in which a legal assistant is employed. Such diversity, varied challenges, and employment possibilities are what makes the legal assistant profession so interesting and rewarding.

There are four different degrees or offerings in legal assistant studies. They are as follows: (1) a four-year baccalaureate degree in legal assistant studies with an 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; (2) a two-year associate's degree in legal assistant studies; (3) a post-baccalaureate (one-year) certificate in legal assistant studies (which is available to students who already have a bachelor's degree in some other discipline and wish to make a career change or advancement); or (4) a minor in legal assistant studies which can complement various majors (and may also be helpful to students who are planning on attending law school). The requirements for these programs are based upon the guidelines of the National Association of Legal Assistants.

Career Description*:

Litigation Legal Assistant — conducts research; drafts legal pleadings and documents; interviews clients and witnesses; investigates, gathers and organizes case information; assists at trial.

Corporate Legal Assistant — drafts and/or analyzes various legal documents; attends meetings, negotiations or closings; performs legal and factual research; monitors compliance with applicable industry regulations; assists attorneys with preparation for collective bargaining, contract negotiations, administrative hearings or trials.

Criminal Law Legal Assistant — conducts comprehensive interviews of defendants, law enforcement, victims, and/or witnesses; performs case and field investigations; locates and coordinates usage of applicable experts; prepares motions, briefs or other legal documents; acts as a litigation assistant during trial and any appeal.

Governmental Legal Assistant — works as an immigration specialist; civil rights analyst; environmental protection specialist; mediation specialist; legislative analyst; workers compensation claims examiner, etc. (even the White House has employed legal assistants).

Real Estate Legal Assistant — conducts title searches; drafts real estate closing documents; monitors compliance with title, survey, disclosure and/or regulatory requirements; schedules and participates in real estate closings.

**Note: The above career descriptions are only a sampling of the numerous avenues available to legal assistants. See next page for additional employment listings.*

Legal Assistant Studies

Legal Assistant Studies Post-Baccalaureate Certificate

Required courses *(39-41 credits)

LA102	Legal Research and Case Analysis	3
LA125	Civil Litigation and Procedure	4
LA140	Personal Injury Litigation and Investigative Techniques	3
LA150	Legal Assistant Profession and Ethical Considerations	3
LA202	Legal Writing and Analysis	3
LA450	Advanced Legal Writing and Interviewing Seminar	3
LA250	Law Office Management, Systems and Technology	3
LA320	Real Estate Law	3
LA321	Family Law	2
LA322	Probate Law and Procedure	3
LA299	Legal Assistant Internship and Professional Seminar	6-8
BA254	Business Law I	3
CJ319	Substantive Criminal Law	3
LA300	Seminar in Legal Assistant Studies	1-4
LA301	Alternative Dispute Resolution and Conflict Management	3
LA305	Tribal Law and Government	3
LA401	Evidence and Trial Practice	3
LA405	No-Fault Automobile Law	3
LA406	Worker's Disability Compensation Law	2
BA255	Business Law II	3
MN451	Labor Law	4
MN469	Collective Bargaining	3
CJ409	Procedural Criminal Law	3
PS467	Constitutional Law and Civil Liberties	4
EV311	Environmental Law	2

**Note: Other courses may be substituted for one or more of the required courses listed above depending upon the student's undergraduate courses/curriculum, work experience and/or career goals. However, any such course substitution must be done in consultation with the legal assistant studies advisor and must be in writing; also, any such course substitution shall be limited to a maximum of two courses. Such other law courses include but are not limited to the following:*

FALL		SPRING		
LA102	Legal Research and Case Analysis	3	LA125 Civil Litigation and Procedure	4
LA150	Legal Assistant Profession and Ethical Considerations	3	LA140 Personal Injury Litigation and Investigative Techniques	3
LA320	Real Estate Law	3	LA202 Legal Writing and Analysis	3
LA321	Family Law	2	or	3
BA254	Business Law I	3	LA450 Advanced Legal Writing and Interviewing Seminar	3
CJ319	Substantive Criminal Law	3	LA250 Law Office Management, Systems and Technology	3
		<u>17</u>	LA322 Probate Law and Procedure	<u>3</u>
SUMMER				<u>16</u>
LA299	Legal Assistant Internship and Professional Development Seminar	6-8		
		<u>6-8</u>		

Admission Requirements:

Admission to the legal assistant studies post-baccalaureate certificate is based on the following:

- Completion of the legal assistant studies post-baccalaureate certificate program application form (along with submission of appropriate admission fee);
- Completion of a baccalaureate degree, comprising a minimum of 120 semester credits from an accredited college or university;
- Submission of official transcripts of all previous post-secondary work (to be considered official, the transcript(s) must be sent directly from the undergraduate's institution(s) to the LSSU Admissions Office);
- Submission of two letters of recommendation from people familiar with the applicant's academic and/or professional abilities and background; and
- Submission of a writing sample setting forth career goals and reasons seeking the post-baccalaureate certificate in legal assistant studies. The writing sample questionnaire is available from the LSSU Admissions Office. (The writing sample shall be reviewed by the dean of the College of Arts, Letters and Social Sciences or the coordinator for the Legal Assistant Studies Program).

Employment:

Legal assistants are employed with ...

- private law firms
- corporations
- financial institutions
- government (federal, tribal, state or local)
- courts and mediation systems
- real estate offices and title companies
- insurance companies
- special interest groups
- prosecutor and public defender offices
- educational institutions
- financial service organizations
- credit and collection agencies
- service, consulting or publishing companies

Post-Baccalaureate Certificate

Accounting

See College of Business
and Economics, page 266.

Bachelor of Science

Tracks

Public Accounting

Industrial/Managerial

Data Processing and Accounting

150-Hour Program

Bachelor's Degrees

Career Choices:

Public Accountant (CPA)

Auditor

Management Accountant (CMA)

Tax Accountant

Government Accountant

Budget Analysis

Student Profile:

Do you ...

feel comfortable with numbers
and enjoy data analysis?

like working with people
and solving problems?

have good communication skills?

Program Description:

The discipline of accounting provides financial and other information essential to the efficient conduct and evaluation of the activities of any organization. Accounting includes the development and analysis of data, the testing of its validity and relevance, and the interpretation and communication of the resulting information to intended users. This program is accredited by the International Assembly for Collegiate Business Education. Students completing the degree will be eligible to sit for various professional certification examinations. The program complies with current educational requirements for the CPA certification.

Common Professional Components —		
ALL Accounting Tracks (67 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
DP121	Computer Applications in Business	3

One course from:

DP225	Word Processing	3
DP231	Database	3
DP235	Spreadsheets	3
DP250	Desktop Publishing	3

EC201	Prin. of Macroeconomics*	3
EC202	Prin. of Microeconomics*	3
FN341	Managerial Finance*	4
MA111	College Algebra*	3
MK281	Marketing Principles and Strategy*	3
MN365	Human Resource Management*	3

*May count toward general education requirement.

*Part of the business core which must be taken prior to taking BA466.

^Capstone course — take after completion of the business core.

Students must complete an occupational focus in one of the following tracks:
Public Accounting
Industrial/Managerial
Data Processing and Accounting
150-Hour Program

Career Descriptions:

Public Accountant — works for a variety of clients providing services in the areas of financial statement preparation, auditing services, income tax planning and preparation, estate planning and financial forecasting, along with a variety of other management advisory services.

Auditor — checks accounting documents and financial statements within corporations and government. This area of accounting, like all others, is becoming increasingly computerized.

Management Accountant — works for one company and participates in a variety of accounting activities such as financial statement preparation, product cost accumulation and analysis, budgeting and forecasting, asset acquisition analysis, payroll accounting and general ledger maintenance, and financial planning for the company.

Tax Accountant — focus is on tax planning and tax return preparation on the federal, state and local levels. A tax specialist may work for either a public accounting firm or an individual company and will aim to minimize the tax on the employer while being in compliance with all applicable tax laws. A thorough knowledge of the tax laws is required.

Government Accountant — works for one of many government agencies at the federal, state or local level, or may work for government enforcement agencies such as the FBI or the IRS.

Budget Analysis — responsible for developing and managing an organization's financial plans. You'll need real people skills here because of the constant negotiating work involved.

Accounting

Accounting Public Accounting Track Bachelor of Science

Public/CPA	(16 credits)
AC421 Federal Taxation I	3
AC422 Federal Taxation II	3
AC427 Auditing	4
AC432 Advanced Accounting I	3
AC433 Advanced Accounting II	3

FALL		SPRING		
First Year				
AC132	Principles of Accounting I	4	AC133 Principles of Accounting II	4
MA111	College Algebra	3	SD101 Fund. of Speech Communication	3
EN110	First-Year Composition I	3	NS Life/Physical Science Elective	4
DP121	Computer Applications for Business	3	EN111 First-Year Composition II	3
NS	Life/Physical Science Elective	4	Social Science Elective	3-4
		<u>17</u>		<u>17-18</u>
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
<i>One course from:</i>		3	BA231 Business Communications	3
DP225	Word Processing		BA211 Business Statistics	3
DP231	Database			<u>16</u>
DP235	Spreadsheets			
DP250	Desktop Publishing			
HU251	Humanities I	4		
		<u>17</u>		
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 Strategies	3	AC334 Accounting Information Systems	3
NS	Life/Physical Science Elective	4	Electives	3
		<u>15</u>	Aesthetics Elective	3-4
				<u>16-17</u>
Fourth Year				
AC421	Federal 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	4
		<u>16</u>	BA308 Cultural Diversity	3
				<u>16</u>

Accounting Industrial Accounting Track Bachelor of Science

Industrial/CMA	(13 credits)
AC421 Federal Taxation I	3
AC427 Auditing	4
BA403 Business, Government and Society	3
MN464 Organizational Behavior	3

FALL		SPRING		
First Year				
AC132	Principles of Accounting I	4	AC133 Principles of Accounting II	4
MA111	College Algebra	3	SD101 Fund. of Speech Communication	3
EN110	First-Year Composition I	3	HU251 Humanities I	4
DP121	Computer Applications for Business	3	EN111 First-Year Composition II	3
NS	Life/Physical Science Elective	4		<u>14</u>
		<u>17</u>		
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
<i>Choose one from:</i>		3	BA231 Business Communications	3
DP225	Word Processing		BA211 Business Statistics	3
DP231	Database			<u>16</u>
DP235	Spreadsheets			
DP250	Desktop Publishing			
	Aesthetics Elective	3-4		
		<u>16-17</u>		
Third Year				
AC332	Cost Accounting I	4	AC333 Cost Accounting II	4
FN341	Managerial Finance	4	MN365 Human Resource Management	3
MK281	Marketing Principles & Strategies	3	AC334 Accounting Information Systems	3
NS	Life/Physical Science Elective	4	Electives	8
		<u>15</u>		<u>18</u>
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	3		<u>16</u>
BA308	Cultural Diversity	3		
		<u>16</u>		

Bachelor's Degrees

Accounting

Accounting Data Processing and Accounting Track Bachelor of Science

DP/Accounting		(24-25 credits)
DP160	Personal Computer Workstation Operating System	3
DP163	Troubleshooting and Repair of Personal Computers	3
DP250	Desktop Publishing and Presentation Design	3
DP260	Personal Computers Network Operating Systems	3
DP263	Storage, Protection & Recovery of Personal Computer	3
MN464	Organizational Behavior	3

FALL			SPRING		
First Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
MA111	College Algebra	3	SD101	Fund. of Speech Communication	3
EN110	First-Year Composition I	3		Life/Physical Science Elective	3-4
DP121	Computer Applications for Business	3	EN111	First-Year Composition II	3
DP160	Personal Computers Workstation Operating Systems	3	DP163	Troubleshooting and Repair of Personal Computers	3
		<u>16</u>			<u>16-17</u>
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 Macroeconomics	3
<i>Choose one from:</i>			DP263	Storage, Protection & Recovery of Personal Computers	3
DP225	Word Processing	3	BA211	Business Statistics	3
DP231	Database				<u>3</u>
DP235	Spreadsheets				<u>16</u>
DP250	Desktop Publishing				
DP260	Personal Computers Network Operating Systems	3			
		<u>16</u>			
Third Year					
AC332	Cost Accounting I	4	AC333	Cost Accounting II	4
FN341	Managerial Finance	4		Life/Physical Science Elective	4
MK281	Marketing Principles & Strategy	3	AC334	Accounting Information Systems Elective	3
DP250	Desktop Publishing and Presentation Design	3	BA231	Business Communications	3
		<u>14</u>			<u>17</u>
Fourth Year					
HU251	Humanities I	4		Aesthetics Elective	3-4
MN365	Human Resource Management	3	MN464	Organizational Behavior	3
	General Education Electives	7	BA466	Business Policy	3
BA308	Cultural Diversity	3		Electives	6
		<u>17</u>			<u>15-16</u>

Bachelor's Degrees

Accounting

Accounting 150-Hour Program Track Bachelor of Science

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
DP250	Desktop Publishing and Presentation Design	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.

FALL		SPRING		
First Year				
AC132	Principles of Accounting I	4	AC133 Principles of Accounting II	4
MA111	College Algebra	3	SD101 Fund. of Speech Communication	3
EN110	First-Year Composition I	3	Life/Physical Science Elective	4
DP121	Computer Applications for Business	3	EN111 First-Year Composition II	3
NS	Life/Physical Science Elective	4	Elective	3
		<u>17</u>		<u>17</u>
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
<i>Choose one from:</i>		3	BA231 Business Communications	3
DP225	Word Processing		BA211 Business Statistics	3
DP231	Database			<u>16</u>
DP235	Spreadsheets			
MK281	Marketing Principles & Strategy	3		
		<u>16</u>		
Third Year				
AC332	Cost Accounting I	4	AC333 Cost Accounting II	4
FN341	Managerial Finance	4	MN365 Human Resource Management	3
HU251	Humanities I	4	AC334 Accounting Information Systems	3
MN360	Principles of Management	3	Soc Sci Elective	3
		<u>15</u>	Elective	3
				<u>16</u>
Fourth Year				
BA403	Government, Business & Society	3		
AC432	Advanced Accounting I	3	Aesthetics Elective	3-4
MN464	Organizational Behavior	3	AC433 Advanced Accounting II	3
BA308	Cultural Diversity	3	NS/MA/SS Elective	4
DP250	Desktop and Presentation Design	3	Electives	6
		<u>15</u>		<u>16-17</u>
Fifth Year				
AC421	Federal Taxation Accounting I	3	AC422 Federal Taxation Accounting II	3
AC427	Auditing	4	BA466 Business Policy	3
	Electives*	6	Electives**	10
		<u>13</u>		<u>16</u>

*See your advisor for suggested electives.

Bachelor's Degrees

Athletic Training

See College of Natural
and Health Sciences, page 281.

Bachelor of Science

Career Choices:

Secondary School Athletics
University/College Athletics
Professional Teams
Amateur Athletic Associations
Sports Medicine Clinics
Health/Fitness Facilities

Student Profile:

Do you...

- Like the sciences and medicine?
- Value a physically active life style?
- Have good communication skills?
- Like helping people?
- Possess critical thinking skills?

For a copy of the Athletic Training Education Program Student Manual or if you have any further questions please contact:

Christopher Kirk MS, ATC
Athletic Training Education
Program Director
(906) 635-2604
ckirk@lssu.edu

Program Description:

LSSU's athletic training major is currently in the second year of candidacy for CAAHEP* accreditation. Once accreditation is obtained, graduates will be eligible to sit for the NATABOC** examination.

During their first two years, students complete much of the University's required core curriculum. They also complete prerequisite athletic training course work and engage in clinical observation hours, in order to become eligible to apply for admission to the professional phase of the program. Accepted students take advanced coursework and engage in supervised clinical experiences that include upper- and lower-body intensive sports and equipment-intensive sports, as well as a general medical experience. The clinical experiences take place at private and university medical practice sites and with university athletic teams. Senior students are assigned to a staff ATC to work with one of the teams and conclude their training with a 15-week internship selected in consultation with their academic advisors.

Detailed program description, competitive admission requirements and Technical Standards for Admission are provided in the Athletic Training Education Program Student Manual.

*Commission on Accreditation of Allied Health Education Programs

**National Athletic Trainers Association Board of Certification

Career Descriptions:

Secondary Schools - Private and public secondary schools offer special job opportunities for ATCs. Many ATCs teach classes as well as providing health care services to the student-athletes.

Colleges and Universities - ATCs in this setting may provide health care services to student-athletes, teach in an athletic training education programs or a combination of these duties.

Professional Sports - In this setting, ATCs provide athletic health care services for professional athletes involved with one sports organization.

Sports Medicine Clinics - This growing setting provides ATCs the opportunity to work with a number of different health care professionals and a diverse patient population. In addition to athletic injury rehabilitation, many clinics provide athletic training services for secondary schools.

Other possible athletic training employment opportunities include corporate health programs, health clubs, clinical and industrial health care programs and athletic training education programs

Other Information

Students interested in athletic training should investigate the following websites.

www.nata.org

www.caahep.org

www.cewl.com

Athletic Training

Athletic Training Bachelor of Science

Departmental Requirements: (52 credits)

ES141	Intro. to Movement	3
ES230	Athletic Injury/Illness Prevention	3
ES232	Athletic Injury/Illness Recognition	3
ES234	Preventative Taping Techniques	1
ES262	Exercise Physiology I	3
ES268	Fitness Evaluation I	2
ES275	Nutrition for Sport	2
ES301	A.T. Clinical Experience I	2
ES302	A.T. Clinical Experience II	2
ES340	Therapeutic Modalities	3
ES344	Kinesiology	3
ES346	Therapeutic Exercise	3
ES349	Orthopedic Assessment	3
ES358	Research Methods	3
ES401	A.T. Clinical Experience III	2
ES402	A.T. Clinical Experience IV	2
ES428	Psychological Aspects of Exercise and Athletic Rehabilitation	3
ES452	A.T. Administration	3
ES492	Exercise Science Internship	6

Cognate Requirements: (31 credits)

HE189	Medical First Responder	3
MA207	Statistics	3
BL121	Anatomy & Physiology I	4
BL122	Anatomy & Physiology II	4
CH104	Life Chemistry I	4
CH105	Life Chemistry II	4
HE209	Pharmacology	3
HE232	Pathophysiology	3
NU212	Health Appraisal	4

Support Electives: (9 credits)

ES140	Health & Fitness	3
ES248	Psychology of Sport and Performance and Coaching	3
ES348	Fitness Evaluation II	3
ES362	Exercise Physiology II	3
ES442	Electrocardiology	2
ES444	Exercise Prescription	2
PH221	Elements of Physics I	4
HE328	Multicultural Approaches to Health Care	3

General Electives (7 credits)

General Education (25 credits)

Total Credits: 124

FALL		SPRING		
First Year				
BL121	Human Anatomy & Physiology I	4	BL122 Human Anatomy & Physiology II	4
EN110	First-Year Composition I	3	EN111 First-Year Composition I	3
ES141	Introduction to Movement	3	ES230 Athletic Injury/Illness Prevention	3
	Social Science Elective	<u>4</u>	HU251 Humanities I	<u>4</u>
		14		14
Second Year				
CH104	Life Chemistry I	4	CH105 Life Chemistry II	3
NU212	Health Appraisal	4	ES234 Preventative Taping Techniques	1
ES232	Athletic Injury/Illness Recognition	3	ES444 Kinesiology	3
HE189	Medical First Responder	3	ES340 Therapeutic Modalities in A.T.	3
SD101	Fund. of Speech Communication	<u>3</u>	Humanities Elective	<u>4</u>
		17		14
Third Year				
ES262	Exercise Physiology I	3	ES302 Athletic Training Clinical Experience II	3
ES268	Fitness Evaluation I	2	ES349 Orthopedic Assessment	3
ES301	Athletic Training Clinical Experience I	2	ES358 Research Methods	3
ES346	Therapeutic Exercise in A.T.	3	MA207 Statistics	3
HE232	Pathophysiology	3	HE209 Pharmacology	3
	Social Science Diversity	<u>3</u>	ES275 Nutrition for Sport & Exercise	<u>2</u>
		16		17
Summer Semester				
ES492	Exercise Science Internship	6		
Fourth Year				
ES401	Athletic Training Clinical Experience III	2	ES402 Athletic Training Clinical Experience IV	2
ES452	Athletic Training Administration	3	ES362 Exercise Physiology II	3
ES444	Exercise Prescription	2	ES428 Psychological Aspects of Exercise and Rehabilitation	3
	Social Science Elective	3	General Electives	<u>6</u>
	General Elective	<u>4</u>		14
		14		

Bachelor's Degrees

Biology

See College of Natural and Health Sciences, page 281.

**Bachelor of Arts
Elementary Education**

**Bachelor of Science
Concentrations in:**

Botany

Ecology

General Biology

Pre-Professional

Zoology

Secondary Education

Career Choices:

Biological Illustrator

Consultant

Research Biologist

Sales Representative

Teacher - Elementary
Education

Teacher - Secondary
Education

Student Profile:

Do you have ...

good math and science skills?

a curious mind?

attention to detail?

self-motivation?

an interest in the social
application of life sciences?

an enjoyment of the
learning process?

Program Description:

The bachelor of science degree in biology emphasizes the basic science disciplines throughout the core curriculum. At the beginning of your sophomore year, you have a choice of five areas of concentration: botany, ecology, zoology, pre-professional studies, or secondary education. In addition, the general biology track allows you to tailor the program to suit your career objectives. You will find that these programs all offer a firm foundation in basic biological concepts and the opportunity to acquire necessary technical skills. All BS students earn a minor in chemistry, except those in secondary education who earn a group science minor.

The bachelor of arts degree in biology includes a strong core program of science courses, allowing students to obtain a general background in both the concepts and the technical skills of modern biology. In addition, this program allows students the flexibility of completing minor fields of study in other disciplines such as art, political science, marketing, social science, psychology, or elementary education.

These programs require completion of general education requirements and electives so that at least 125 credits are earned.

Graduate and Professional School — these curriculums prepare you for continued study in graduate and professional schools.

Career Descriptions:

Research Biologist — conducts research for government agencies; local, state and national parks; resource management agencies; or private companies.

Teacher - Secondary Education — teaches a wide range of science courses in Michigan high schools.

Biological Illustrator — artists in various areas of scientific or naturalist illustration require an understanding of life sciences to augment their skills in illustration.

Consultant — numerous industries have requirements for individuals with a broad understanding of the social implications of biological factors.

Sales Representative — biologists that also have marketing skills are in demand as sales representatives in several types of companies ranging from text book publishers to pharmaceutical firms.

Teacher - Elementary Education — contact Teacher Education Department for current course requirements and career options.

BA/BS Biology Core Requirements		(46-48 credits)
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL199	Freshman Seminar	1
BL299	Sophomore Seminar	1
BL204	General Microbiology	4
BL220	Genetics	4
BL280	Biometrics	3
BL399	Junior Seminar	1
BL495	Senior Project	1-3
BL499	Senior Seminar	1
CH115	General Chemistry I	5
CH116	General Chemistry II	4
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
MA112	Calculus for Business and Life Sciences	4
MA207	Principles of Statistical Methods	3

Biology Bachelor of Arts

Students wishing to combine a strong biology curriculum with a minor in another discipline should consider this career track.

For a bachelor of arts in elementary education, complete this curriculum and the planned program for elementary teachers. See pages 125, 251 and 252.

In addition to the biology core requirements, the following courses must be successfully completed to obtain this degree:

BA Biology	(26 credits)
BL330 Animal Physiology	4
or	
BL315 Plant Physiology	3
BL337 General Ecology	3
BL420 Population Genetics & Evolution	3
CH225 Organic Chemistry I	4
CH226 Organic Chemistry II	4
Foreign Language*	8

*All eight credits must be in one language.

FALL		SPRING	
First Year			
BL109 General Biology	4	EN111 First-Year Composition II	3
BL199 Freshman Seminar	1	BL110 General Zoology	2
CH115 General Chemistry I	5	BL111 General Botany	2
MA111 College Algebra	3	CH116 General Chemistry II	4
EN110 First-Year Composition I	3	MA112 Calculus for Business & Life Sciences	4
	<u>16</u>		<u>15</u>
Second Year			
BL204 General Microbiology	4	BL Elective	3-4
MA207 Principles of Statistical Methods	3	Social Science Elective (Gen. Ed.)	3-4
CH225 Organic Chemistry I	4	CH226 Organic Chemistry II	4
SD101 Fund. of Speech Communication	3	HU251 Humanities I	4
BL Elective	3	BL299 Sophomore Seminar	1
	<u>17</u>		<u>15-17</u>
Third Year			
BL337 General Ecology	3	BL330 Animal Physiology	4
BL220 Genetics	4	or	
Foreign Language I	4	BL315 Plant Physiology	4
Humanities Elective (Gen. Ed.)	3-4	Foreign language II	4
	<u>14-15</u>	Social Science Elective (Gen. Ed.)	3
		BL399 Junior Seminar	1
		Free Electives	4
			<u>16</u>
Fourth Year			
BL Elective	3-4	BL499 Senior Seminar	1
BL495 Senior Project	1	BL420 Population Genetics & Evolution	3
Soc. Sci. Diversity Elective (Gen. Ed.)	3	Free Electives	11
Free Elective	7		<u>15</u>
	<u>14-15</u>		

Biology Botany Concentration Bachelor of Science

Students interested in studying plants in their natural setting and in the laboratory should consider this career track.

In addition to the biology core requirements, the following courses must be successfully completed to obtain this degree:

Botany	(52 credits)
BL201 Plant Morphology	3
BL202 Field Botany	3
BL230 Introduction to Soils	4
BL240 Natural History of the Vertebrates	3
BL315 Plant Physiology	4
BL337 General Ecology	3
BL408 Plant Systematics	3
BL420 Population Genetics & Evolution	3
BL437 Plant Ecology	3
CH225 Organic Chemistry I	4
CH226 Organic Chemistry II	4
CH451 Introductory Biochemistry	4
Physical Science Electives*	8

*Selected from CH, EV, GE or PH course not required above.

FALL		SPRING	
First Year			
BL109 General Biology	4	BL110 General Zoology	2
CH115 General Chemistry I	5	BL111 General Botany	2
EN110 First-Year Composition I	3	BL199 Freshman Seminar	1
MA111 College Algebra	3	CH116 General Chemistry II	4
	<u>15</u>	EN111 First-Year Composition II	3
		MA112 Calculus for Business and Life Sciences	4
			<u>16</u>
Second Year			
BL202 Field Botany	3	BL280 Biometrics	3
BL204 General Microbiology	4	BL299 Sophomore Seminar	1
BL240 Natural History of Vertebrates	3	CH226 Organic Chemistry II	4
CH225 Organic Chemistry I	4	Social Science Elective	3-4
MA207 Principles of Statistical Methods	3	SD101 Fund. of Speech Communication	3
	<u>17</u>		<u>14-15</u>
Third Year			
BL220 Genetics	4	BL201 Plant Morphology	3
BL230 Introduction to Soil Science	4	Humanities Elective	3-4
BL337 General Ecology	3	Social Science Elective	3
BL399 Junior Seminar	1	Elective	3
CH451 Introductory Biochemistry	4	Social Science Diversity	3
	<u>16</u>		<u>15-16</u>
Fourth Year			
BL437 Plant Ecology	3	BL315 Plant Physiology	4
BL495 Senior Project	1	BL420 Population Genetics & Evolution	3
Physical Science Elective	4	BL408 Plant Systematics	3
HU251 Humanities I	4	BL499 Senior Seminar	1
Elective	3	Physical Science Elective	4
	<u>15</u>		<u>15</u>

Biology

Biology Ecology Concentration Bachelor of Science

For students interested in the interaction of organisms with their natural environment, and the effects of human populations on those ecosystems.

In addition to the biology core requirements, the following courses must be successfully completed to obtain this degree:

Ecology		(53 credits)
BL202	Field Botany	3
BL230	Introduction to Soils	4
BL240	Natural History of the Vertebrates	3
BL337	General Ecology	3
BL345	Limnology	3
BL420	Population Genetics & Evolution	3
BL437	Plant Ecology	3
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH451	Introductory Biochemistry	4
	Physical Science Electives	8
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
	Physical Science Electives*	8

*Selected from CH, EV, GE, or PH course not listed above.

Bachelor's Degrees

Biology General Biology Concentration Bachelor of Science

For students interested in a broad study of living systems, allowing for flexibility in curricular and career pursuits.

In addition to the biology core requirements, the following courses must be successfully completed to obtain this degree:

General Biology		(48 credits)
	Biology Electives*	25
BL420	Population Genetics & Evolution	3
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH451	Introductory Biochemistry	4
	††Physical Science Electives	8

*At least 12 credits must be from 300- or 400-level courses.

††Selected from CH, EV, GE, or PH course not listed above.

FALL			SPRING		
First Year					
BL109	General Biology	4	EN111	First-year Composition II	3
CH115	General Chemistry I	5	BL110	General Zoology	2
EN110	First-year Composition I	3	BL111	General Botany	2
MA111	College Algebra	3	BL199	Freshman Seminar	1
		<u>15</u>	CH116	General Chemistry II	4
			MA112	Calculus for Business and Life Sciences	4
					<u>16</u>
Second Year					
BL202	Field Botany	3	BL280	Biometrics	3
BL204	General Microbiology	4	EV127	Global Positioning Systems	1
CH225	Organic Chemistry I	4	BL299	Sophomore Seminar	1
EV125	Geospatial Basics	1	CH226	Organic Chemistry II	4
EV126	Air Photo Interpretation	1	SD101	Fund. of Speech Communication	3
MA207	Principles of Statistical Methods	3		Elective	3
		<u>16</u>			<u>15</u>
Third Year					
BL220	Genetics	4	BL399	Junior Seminar	1
BL230	Introduction to Soils	4		Humanities Elective	3-4
BL240	Natural History of the Vertebrates	3		Soc. Sci. Diversity Elective	3
BL337	General Ecology	3		Social Science Elective	3-4
		<u>14</u>		Elective	3
					<u>13-15</u>
Fourth Year					
BL345	Limnology	3	BL420	Population Genetics & Evolution	3
BL437	Plant Ecology	3		Physical Science Elective	4
BL495	Senior Project	1		Social Science Elective	3
	Physical Science Elective	4	HU251	Humanities I	4
CH451	Introductory Biochemistry	4	BL499	Senior Seminar	1
		<u>15</u>			<u>15</u>

FALL			SPRING		
First Year					
BL109	General Biology	4	EN111	First-Year Composition II	3
CH115	General Chemistry I	5	BL110	General Zoology	2
EN110	First-year composition I	3	BL111	General Botany	2
MA111	College Algebra	3	BL199	Freshman Seminar	1
		<u>15</u>	CH116	General Chemistry II	4
			MA112	Calculus for Business and Life Science	4
					<u>16</u>
Second Year					
BL220	Genetics	4	BL	Biology Elective	3-4
CH225	Organic Chemistry I	4	BL280	Biometrics	3
MA207	Prin. of Statistical Methods	3	CH226	Organic Chemistry II	4
SD101	Fund. of Speech Communication	3	BL299	Sophomore Seminar	1
	Social Science Elective	3		Elective	3-4
		<u>17</u>			<u>14-16</u>
Third Year					
BL	Biology Elective	3-4	BL	Biology Elective	3-4
BL204	General Microbiology	4	BL	Biology Elective	3-4
BL399	Junior Seminar	1	HU251	Humanities I	4
CH451	Introductory Biochemistry	4		Physical Science Elective	4
	Physical Science Elective	4			<u>14-16</u>
		<u>16-17</u>			
Fourth Year					
BL	Biology Elective	3-4	BL420	Population Genetics & Evolution	3
BL	Biology Elective	3-4	BL499	Senior Seminar	1
BL495	Senior Project	1		Biology Elective	3-4
	Soc. Sci. Diversity Elective	3-4		Social Science Elective	3-4
	Humanities Elective	3-4		Elective	3-4
		<u>13-17</u>			<u>13-16</u>

Biology Pre-Professional Studies Concentration Bachelor of Science

Students wishing to pursue medical, dental, optometry or veterinary careers should follow this career track.

In addition to the biology core requirements, the following courses must be successfully completed to obtain this degree:

Pre-professional Studies (48 credits)	
BL243	Vertebrate Anatomy 4
BL320	Cell Biology 4
BL330	Animal Physiology 4
BL332	Embryology 3
BL420	Population Genetics & Evolution 3
BL423	Immunology 4
BL433	Histology 3
BL480	Advanced Clinical Microbiology 3
CH225	Organic Chemistry I 4
CH226	Organic Chemistry II 4
CH451	Introductory Biochemistry 4
PH221	Elements of Physics I 4
PH222	Elements of Physics II 4

Biology Zoology Concentration Bachelor of Science

Students interested in pursuing an organismal approach to the study of animals should follow this career track.

In addition to the biology core requirements, the following courses must be successfully completed to obtain this degree:

Zoology (52 credits)	
BL240	Natural History of the Vertebrates 3
BL243	Vertebrate Anatomy 4
BL303	Entomology 3
Any two of the following three courses:	
BL310	Ichthyology 3
BL311	Mammalogy 3
BL312	Ornithology 3
BL330	Animal Physiology 4
BL337	General Ecology 3
BL405	Animal Behavior 3
BL420	Population Genetics & Evolution 3
CH225	Organic Chemistry I 4
CH226	Organic Chemistry II 4
CH451	Introductory Biochemistry 4
CS101	Intro. to Microcomputer Applications 3
	Physical Science Electives* 8

*Selected from CH, EV, GE, or PH course not listed above.

FALL		SPRING	
First Year			
BL109	General Biology 4	EN111	First-Year Composition II 3
CH115	General Chemistry I 5	BL110	General Zoology 2
EN110	First-Year Composition I 3	BL111	General Botany 2
MA111	College Algebra 3	BL199	Freshman Seminar 1
	15	CH116	General Chemistry II 4
		MA112	Calculus for Business and Life Sciences 4
			16
Second Year			
BL204	General Microbiology 4	BL243	Vertebrate Anatomy 4
BL220	Genetics 4	BL280	Biometrics 3
BL299	Sophomore Seminar 1	CH226	Organic Chemistry II 4
CH225	Organic Chemistry I 4	SD101	Fund. of Speech Communication 3
MA207	Principles of Statistical Methods 3		14
	16		
Third Year			
BL399	Junior Seminar 1	BL332	Embryology 3
CH451	Introductory Biochemistry 4	BL320	Cell Biology 4
PH221	Elements of Physics I 4	BL330	Animal Physiology 4
HU251	Humanities I 4	PH222	Elements of Physics II 4
	Social Science Elective 3-4		15
	16-17		
Fourth Year			
BL423	Immunology 4	BL420	Population Genetics & Evolution 3
BL495	Senior Project 1	BL433	Histology (alternate years) 3
	Social Science Diversity Elective 3	BL480	Advanced Clinical Microbiology 3
	Humanities Elective 3	BL499	Senior Seminar 1
	Social Science Elective 3-4		Elective 6
	14-15		16

FALL		SPRING	
First Year			
BL109	General Biology 4	BL110	General Zoology 2
CH115	General Chemistry I 5	BL111	General Botany 2
EN110	First-Year Composition I 3	BL199	Freshman Seminar 1
MA111	College Algebra 3	CH116	General Chemistry II 4
	15	EN111	First-Year Composition II 3
		MA112	Calculus for Business and Life Sciences 4
			16
Second Year			
	Social Science Elective 3	BL280	Biometrics 3
BL220	Genetics 4	BL312	Ornithology 3
BL240	Natural History of the Vertebrates 3	BL299	Sophomore Seminar 1
CH225	Organic Chemistry I 4	CH226	Organic Chemistry II 4
MA207	Principles of Statistical Methods 3	SD101	Fund. of Speech Communication 3
	17		Soc. Sci. Diversity Elective 3
			17
Third Year			
BL204	General Microbiology 4	BL243	Vertebrate Anatomy 4
BL310	Ichthyology 3	BL330	Animal Physiology 4
BL337	General Ecology 3	BL399	Junior Seminar 1
	Physical Science Elective 4		Physical Science Elective 4
	Social Science Elective 3-4		Humanities Elective 3-4
	17-18		16-17
Fourth Year			
BL303	Entomology 3	BL420	Population Genetics & Evolution 3
BL405	Animal Behavior 3	BL499	Senior Seminar 1
BL495	Senior Project 1		Elective 10
CH451	Introductory Biochemistry 4		14
HU251	Humanities I 4		
	15		

Biology

Biology Secondary Education Bachelor of Science

This program includes a strong biology core curriculum, a broad-field science minor and a teaching minor. You will obtain a grounding in the concepts and technical skills of modern biology as well as develop an understanding of the teaching/learning process and the role of science in education. The program takes five years, with the fifth year encompassing graduate courses and an internship.

Application to the teaching program requires:

- 45 earned credits
- GPA of 2.70
- MTTC basic skills test
- CS101 or equivalent

Graduate school/research — The strong biology curriculum allows you the flexibility to pursue most of the opportunities that are available to graduates with either a B.S. or a B.A. in biology.

Secondary Education — The secondary education program leads to a DX science endorsement which certifies the graduate to teach a wide range of science courses in Michigan high schools.

You earn a bachelor's degree, and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

In addition to the biology core requirements, the following courses must be successfully completed to obtain this degree:

BS Biology Secondary Education (16 credits)

BL105	Function of Human Body	4
BL240	Natural History of Vertebrates	3
BL330	Animal Physiology	4
BL337	General Ecology	3
BL405	Animal Behavior	3

BL Electives (13 credits)

Chemistry Minor

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH451	Introductory Biochemistry	4

Professional Component

TE150	Reflections on Teaching & Learning	3
TE250	Student Diversity & Schools	3
TE301	Learning Theory and Teaching Practice	4
TE430	General Methods for Secondary Teachers	3
TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
BL199	Freshman Seminar	1	BL111	General Botany	2
CH115	General Chemistry I	5	CH116	General Chemistry II	4
MA111	College Algebra	3	MA112	Calculus for Business & Life Sciences	4
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
		<u>16</u>			<u>15</u>
Second Year					
HU251	Humanities I	4	TE250	Student Diversity and Schools	3
TE150	Reflections on Learning and Teaching	3	BL280	Biometrics	3
BL105	Functions of the Human Body	4		Social Science Elective (Gen. Ed.)	3
BL240	Natural History of the Vertebrates	3	BL299	Sophomore Seminar	1
MA207	Principles of Statistical Methods	3	SD101	Fund. of Speech Communication	3
		<u>17</u>			<u>13</u>
Third Year					
BL204	General Microbiology	4	BL330	Animal Physiology	4
BL220	Genetics	4	CH226	Organic Chemistry II	4
BL337	General Ecology	3	BL399	Junior Seminar	1
CH225	Organic Chemistry I	4	BL	Electives	3
		<u>15</u>	TE301	Learning Theory and Teaching Practice	4
					<u>16</u>
Fourth Year					
BL405	Animal Behavior	3	BL499	Senior Seminar	1
BL495	Senior Project	1		Humanities Elective	3
CH451	Introductory Biochemistry	4	BL	Elective	2
TE430	General Methods for Secondary Teachers	3	TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3	TE443	Science Methods for Secondary Teachers	3
	Social Science Elective	3			<u>3</u>
		<u>17</u>			<u>12</u>
Fifth Year					
TE491	Internship in Teaching Diverse Learners I	6	TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3	TE603	Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>			<u>12</u>

TE443	Science Methods for Secondary Teachers	3
TE491	Internship in Teaching Diverse Learners I	6
TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3
TE602	Reflection and Inquiry in Teaching Practice I	3
TE603	Professional Roles and Teaching Practice II	3
TE604	Reflection and Inquiry in Teaching Practice II	3

Total Credits: 157

Bachelor's Degrees

Business Administration — Business Education

See College of Business
and Economics, page 266.

Program Description:

The bachelor of science in business administration - business education prepares students for Michigan certification to teach business and office education courses at the secondary level. The degree makes students eligible for a secondary provisional certificate. Certification is available in accounting, marketing and office education. Refer to the Minors section of this catalog for a listing of the course requirements for these minor endorsements.

Career Descriptions:

Business Teacher — helps students develop business and technology skills that will make them more marketable.

Teaching is the profession that shapes America's future. As a teacher, you:

- make a positive difference in the lives of young people.
- make an impact on the future of America's business leaders and workers.

Preparing students for tomorrow's work force is important to improve and maintain America as an economic leader. The business teaching profession needs committed, enthusiastic, well-prepared teachers to:

- help students develop the qualities and skills required for the workplace.
- prepare students for post-secondary business programs.

Bachelor of Science

Teachable minors in

Accounting

Marketing

Office Education

Career Choices:

Secondary Teacher

Business careers in:
Management
Accounting
Marketing

Student Profile:

Do you ...

like working with people?

want to make a difference?

seek a satisfying lifelong career?

desire responsibility
and leadership?

seek flexibility, variety
and creativity in your job?

**Business
Administration -
Business Education
Bachelor of Science**

Department Requirements

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
BA211	Business Statistics	3
BA231	Business Communication	3
BA254	Business Law I	3
BA255	Business Law II	3
BA403	Business, Government & Society	3
BA466	Business Policy	3
DP121	Computer Applications for Business	3

Choose one from:

DP225	Word Processing	3
DP231	Database	3
DP235	Spreadsheets	3
DP250	Desktop Publishing	3

EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
FN341	Managerial Finance	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN464	Organizational Behavior	3

Choose one of the following or any teachable minor to meet the state certification requirements.

Accounting Teaching (23 credits)

AC232	Intermediate Accounting I	4
AC233	Intermediate Accounting II	4
AC334	Accounting Information Systems	3
AC431	Federal Taxation I	3
DP231	Database	3
DP235	Spreadsheets	3
FN242	Personal Finance	3

Distributive Teaching (21 credits)

BA105	Business Math	3
MK283	Principles of Selling	3
MK285	Retail Management	3
MK381	Consumer Behavior	3
MK387	Advertising Theory and Practice	3
MK483	Sales Force Management	3
MK486	International Marketing	3

Secretarial Science (24 credits)

BA226	Records Management	3
DP225	Word Processing Techniques	3
DP231	Database	3
DP235	Spreadsheets	3
DP250	Desktop Publishing and Presentation Graphics	3
FN242	Personal Finance	3
OA113	Document Formatting II	3
OA235	Automated Office Systems	3

Teacher Education Secondary Program (22 credits)

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Learning Theory and Teaching Practice	4
TE430	General Methods for Secondary Teachers	3
TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3
TE446	Business Education Methods for Secondary Teachers	3

FALL		SPRING		
First Year				
AC132	Principles of Accounting I	4	AC133 Principles of Accounting II	4
MA111	College Algebra	3	SD101 Fund. of Speech Communication	3
EN111	First-Year Composition I	3	EN111 First-Year Composition II	3
TE150	Reflections on Learning and Teaching	3	DP121 Business Computer Applications	3
NS	Life/Physical Science Elective	4	NS Life/Physical Science Elective	4
		<u>17</u>		<u>17</u>
Second Year				
MK281	Marketing Principles & Strategy	3	HU Humanities Elective	3-4
BA211	Business Statistics	3	BA255 Business Law II	3
BA254	Business Law I	3	EC202 Principles of Microeconomics	3
EC201	Principles of Macroeconomics	3	BA231 Business Communications	3
HU251	Humanities I	4	TE250 Student Diversity and Schools	3
		<u>16</u>		<u>16-17</u>
Third Year				
BS	Elective	3	MN365 Human Resources Management	3
FN341	Managerial Finance	4	Teachable Minor	13-14
MN360	Principles of Management	3		<u>15-16</u>
TE301	Learning Theory & Teaching Practice	4		
	Teachable Minor	3		
		<u>17</u>		
Fourth Year				
BA403	Business, Government & Society	3	BA466 Business Policy	3
MN464	Organizational Behavior	3	TE431 The Secondary Learner	3
TE430	General Methods for Secondary Teachers	3	TE446 Business Education Methods	3
			Teachable Minor	6-7
TE440	Reading in the Content Area	3		<u>15-16</u>
BS	Elective	3		
	Minor Elective	3		
		<u>18</u>		
Fifth Year				
TE491	Internship: Teaching Diverse Learners I	6	TE492 Internship: Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3	TE603 Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practices	3	TE604 Reflection and Inquiry in Teaching Practices	3
		<u>12</u>		<u>12</u>

General Education

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
HU251	Humanities I	4
HU	Elective	3-4

Social Science

EC201	Principles of Macroeconomics	3
	Elective	3-4
	Diversity Elective	3-4

Natural Science with Lab

	Elective	4
	Elective	4

Mathematics

MA111	College Algebra	3
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BS Degree Requirement

Credits from mathematics, natural science or social science not used in general education 8

Bachelor's Degrees

Business Administration — International Business

See College of Business
and Economics, page 266.

Program Description:

This degree requires successful completion of a curriculum with a minimum of 128 semester hours as prescribed on the following page.

A major in international business is intended to develop a student's ability to meet the challenges of the global business environment. In addition to providing the fundamental foundations of all business functional areas, the major teaches the student to identify and develop appropriate solutions to situations that are unique to conducting business in the global environment. The international business major provides the student with an understanding of international business by providing upper-level courses in international economics, international marketing, cultural differences, politics and foreign languages. Students will also participate in an approved international experience which will involve either study abroad, work experiences, or internships.

Career Description:

Large and small companies in the United States and around the world are seeking employees who understand global business and can successfully operate in the international marketplace. International careers are available in the business areas of management, marketing, economics, accounting and finance.

Bachelor of Science

Career Choices:

Manager of International
Division(s)

CEO/CFO of International
Subsidiary Companies

Marketing Manager -
International Sales

Public Relations Manager for
International Operations

Distribution Manager -
International Product Divisions

Student Profile:

Are you ...

a people person?

enthusiastic, flexible and decisive?

self-motivated, analytical and like
to see things get done?

a person who likes to travel, see
new places and diversified cultural
experiences?

Business Administration - International Business

Bachelor's Degrees

Business Administration - International Business Bachelor of Science

General Education (28 Credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
	Humanities Elective	4
SD101	Fund. of Speech Communication	3
BA308	Managing Cultural Differences	3
	Natural science laboratory courses	8

BS Degree Requirements (8 credits)

Natural science, social science or mathematics electives

Common Professional Component (60 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
DP121	Computer Applications for Business	3
	<i>Choose one from:</i>	3
DP225	Word Processing	
DP231	Database	
DP235	Spreadsheets	
DP250	Desktop Publishing	
EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
FN341	Managerial Finance	4
MA111	College Algebra	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN375	Intro. to Supply Chain Management	3
MN464	Organizational Behavior	3

Major Requirement -

International Business (26 credits)

EC408	International Economics#	3
MK486	International Marketing*	3
	Modern foreign language	8
	Approved international experience†	3
	Three courses from List A	9

Free Electives (6 credits)

*Meets a specific general education requirement.

†May be used toward BS degree requirement.

‡Examples of approved international experiences include study abroad, work experiences or internships.

FALL		SPRING			
First Year					
	Modern Foreign Language	4	Modern Foreign Language	4	
EN110	First-Year Composition I	3	SD101	Fund. of Speech Communication	3
MA111	College Algebra	3		Natural Science	4
	Natural Science	4	BA211	Business Statistics	3
DP121	Computer Applications for Business	3	EN111	First-Year Composition II	3
		17			17
Second Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
BA254	Business Law I	3	BA255	Business Law II	3
	<i>Choose one from:</i>	3	BA231	Business Communications	3
DP225	Word Processing			Marketing Elective	3
DP231	Database				16
DP235	Spreadsheets				
DP250	Desktop Publishing				
MK281	Marketing Principles & Strategies	3			
		16			
Third Year					
HU251	Humanities I	4		Humanities Elective	4
MN360	Principles of Management	3	BA308	Managing Cultural Differences	3
FN341	Managerial Finance	4	MN365	Human Resource Management	3
EC408	International Economics*	3	MK486	International Marketing	3
	Elective	3		List A Elective*	3
		17			16
Fourth Year					
BA403	Business, Government & Society	3	BA466	Business Policy	3
MN464	Organizational Behavior	3		International Experience*	3
	List A Electives*	6		Electives	8
	Elective	3			14
		15			

*BS degree requirements may be met by electives from natural science, social science or mathematics.

List A Electives

FR353	Business French I
FR354	Business French II
FR360	French Cultural Perspectives
GG302	Economic Geography
GG306	Cultural Geography
HS310	Russia
HS316	Europe in the 20th Century
HS361	Latin America
HS371	Far East Civilization
HS442	Diplomatic History of the U.S.
HU261	World Literature I
HU262	World Literature II
JS201	Culture and Society of Japan I
JS202	Culture and Society of Japan II
JS301	Japanese Art and Culture I
JS302	Japanese Art and Culture II
PS331	Comparative Politics of Western Europe and Russia
PS334	Middle East Politics
PS411	U.S. Foreign Policy
PS420	Politics of the World Economy
SP305	Spanish Literature in Translation I
SP306	Spanish Literature in Translation II

Business Administration — Management

See College of Business
and Economics, page 266.

Program Description:

This degree requires successful completion of a curriculum with a minimum of 128 semester hours as prescribed on the following page.

The management major is designed to provide students with a broad background in business by presenting courses covering the functional areas of business. This management degree program prepares students for leadership positions in business and non-profit organizations.

Career Description:

Managers guide and direct the organization. Managers set goals and determine methods to achieve those goals. Since managers must achieve the organization's goals through the efforts of other individuals, the practice of management is concerned with human behavior. Managers are involved with designing effective organization structures, controlling operations, making effective decisions, and communicating, motivating and leading personnel. Additionally, an effective manager must design programs to develop people's abilities and talents, understand the role and impact of technology on the organization and be aware of and respond to social challenges both domestically and internationally. A career in management is both challenging and rewarding.

Bachelor of Science

Career Choices:

Manager
Chief Executive Officer
President
Human Resources Manager
Small Business Creation
and Management
Operations Management
Customer Service Directors
Departmental Managers
Account Managers

Student Profile:

Are you ...
a people person?
enthusiastic, flexible and decisive?
self-motivated, analytical and like
to see things get done?

Bachelor's Degrees

Business Administration - Management

Business Administration - Management Bachelor of Science

General Education (28 Credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
	Humanities Elective	4
SD101	Fund. of Speech Communication	3
BA308	Managing Cultural Differences	3
	Natural science laboratory courses	8

BS Degree Requirements (8 credits)

Natural science, social science or mathematics electives

Common Professional Component (60 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
DP121	Computer Applications for Business	3
	Choose one from:	3
DP225	Word Processing	
DP231	Database	
DP235	Spreadsheets	
DP250	Desktop Publishing	
EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
FN341	Managerial Finance	4
MA111	College Algebra	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN375	Intro. to Supply Chain Management	3
MN464	Organizational Behavior	3

Major Requirement -

Management (18-19 credits)

MN451	Labor Law	4
	or	
MN469	Collective Bargaining	3
	Six business electives at the 300/400 level	15

Free Electives (13-14 credits)

FALL		SPRING			
First Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
EN110	First-Year Composition I	3	SD101	Fund. of Speech Communication	3
MA111	College Algebra	3		Natural Science	4
	Natural Science	4	BA211	Business Statistics	3
DP121	Computer Applications for Business	3	EN111	First-Year Composition II	3
		17			17
Second Year					
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
BA254	Business Law I	3	BA255	Business Law II	3
	Choose one from:	3	BA231	Business Communications	3
DP225	Word Processing			Humanities Elective	4
DP231	Database			Elective	3
DP235	Spreadsheets				16
DP250	Desktop Publishing				
HU251	Humanities I	4			
MK281	Marketing Principles & Strategies	3			
		16			
Third Year					
MN360	Principles of Management	3	BA308	Managing Cultural Differences	3
FN341	Managerial Finance	4	MN365	Human Resource Management	3
	Business Elective	3	MN469	Collective Bargaining or Bus. Elective	3
	Electives	5		Business Elective	4
		15		Electives	4
					16
Fourth Year					
MN375	Intro. to Supply Chain Management	3			
BA403	Business, Government & Society	3	BA466	Business Policy	3
MN464	Organizational Behavior	3		Business Electives	6
MN451	Labor Law or Business Elective	4		Electives	7
	Elective	2			16
		15			

*BS degree requirements must be met with natural science, social science or mathematics courses not taken to meet general education requirements.

Bachelor's Degrees

Business Administration — Marketing

See College of Business
and Economics, page 266.

Program Description:

This degree requires successful completion of a curriculum with a minimum of 128 semester hours as prescribed on the following page.

The marketing major is designed to prepare students for the many opportunities in the field of marketing. The study of marketing includes marketing principles, principles of selling, retail management, consumer behavior, advertising theory and practice, marketing management, sales force management, marketing research and international marketing. These courses, along with the common professional business core courses, are designed to provide our students with the appropriate knowledge and skills to understand the function of marketing in the firm and in society and to be effective decision makers.

Career Description:

Today, more than 20 million people have careers in marketing. Few other professional careers offer as many career possibilities as the field of marketing. Marketing, with its varied career options and considerable responsibilities within the organization, is an excellent preparation for management positions in all types of organizations. Salaries for entry-level positions are rising in excess of the rate of inflation.

Nearly one-third of the civilian work force in the United States is employed in marketing-related jobs. Marketing career opportunities include product development, product management, distribution management, advertising, public relations, industrial buying, retail management, sales, marketing research and direct marketing. Each area encompasses hundreds of marketing jobs.

Bachelor of Science

Career Choices:

Account Executive/Manager
Professional Selling-Business to
Business
Sales Management
Marketing Research
Product Analyst
Retailing
Buyer
Logistics Analyst
E-Commerce
Telemarketing

Bachelor's Degrees

Student Profile:

Are you ...
intrigued by human behavior?
a people person?
enthusiastic, flexible and decisive?
self-motivated, analytical and like
to see things get done?

Business Administration - Marketing

Business Administration - Marketing Bachelor of Science

Bachelor's Degrees

General Education (28 Credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
	Humanities Elective	4
SD101	Fund. of Speech Communication	3
BA308	Managing Cultural Differences	3
	Natural science laboratory courses	8

BS Degree Requirements (8 credits)

Natural science, social science or mathematics electives

Common Professional Component (60 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
DP121	Computer Applications for Business	3
	<i>Choose one from:</i>	3
DP225	Word Processing	
DP231	Database	
DP235	Spreadsheets	
DP250	Desktop Publishing	
EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
FN341	Managerial Finance	4
MA111	College Algebra	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN375	Intro. to Supply Chain Management	3
MN464	Organizational Behavior	3

Major Requirement -

Marketing (21 credits)

MK381	Consumer Behavior	3
MK480	Marketing Research	3
MK481	Marketing Management	3
	Four Marketing Electives	12

Free Electives (11 credits)

FALL		SPRING			
First Year					
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
EN110	First-Year Composition I	3	SD101	Fund. of Speech Communication	3
MA111	College Algebra	3		Natural Science	4
	Natural Science	4	BA211	Business Statistics	3
DP121	Computer Applications for Business	3	EN111	First-Year Composition II	3
		<u>17</u>			<u>17</u>
Second Year					
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
BA254	Business Law I	3	BA255	Business Law II	3
	<i>Choose one from:</i>	3	BA231	Business Communications	3
DP225	Word Processing			Humanities Elective	4
DP231	Database			Marketing Elective	3
DP235	Spreadsheets				<u>16</u>
DP250	Desktop Publishing				
HU251	Humanities I	4			
MK281	Marketing Principles & Strategies	3			
		<u>16</u>			
Third Year					
MN360	Principles of Management	3	BA308	Managing Cultural Differences	3
FN341	Managerial Finance	4	MN365	Human Resource Management	3
MK381	Consumer Behavior	3	MK480	Marketing Research	3
	Marketing Elective	3		Marketing Elective	3
	Electives	2		Electives	4
		<u>15</u>			<u>16</u>
Fourth Year					
MN375	Intro. to Supply Chain Management	3	BA466	Business Policy	3
BA403	Business, Government & Society	3		Marketing Elective	3
MN464	Organizational Behavior	3		Electives	10
MK481	Marketing Management	3			<u>16</u>
	Elective	3			
		<u>15</u>			

*BS degree requirements must be met with free electives from natural sciences, social sciences, or mathematics.

Chemistry

See College of Natural
and Health Sciences, page 281.

Program Description:

According to the *2000 Occupational Employment and Wage Estimator*, more people are employed as chemists and chemical technicians than in any other job classification in the life, physical and social science occupations (<http://stats.bls.gov>). Chemistry-related jobs also lead this category in Michigan. With many free electives and a common general education core, a chemistry degree can also be used in combination with other majors or minors such as pre-law, engineering, literature, business, biology, etc. to match student interest and career plans.

Graduates with a bachelor of arts in chemistry work in many disciplines and industries, and many proceed on to graduate school in natural sciences, law, engineering and medicine. Internships in chemistry are encouraged where students can gain valuable real-world work experience while gaining college credit. In addition, each student participates in an applied research project in close collaboration with faculty members to address meaningful chemical-based problems. These projects, through the excellent preparation they provide our students, are often cited as important factors in successful job searches and entry into graduate programs.

Career Descriptions:

Chemist — works in business and industry, and environmental and commercial laboratories conducting basic and applied chemical analysis, research and product development.

Lawyer — applies basic chemical knowledge to the practice of law related to scientific and natural resource issues.

Patent Specialist — works with patent applications related to the chemical industry, and the application of chemistry to new and novel problems.

Biologist — combines knowledge of chemistry and biology to address significant issues from the perspective of each discipline, particularly the chemical foundations of biological processes.

Physician — uses chemistry as a foundation for the practice of medicine. A degree in chemistry is a useful precursor to medical school, the study of pharmacology, and the development of drugs to promote health and quality of life.

Science Teacher — responsible for developing and implementing science curriculum in grades 7-12; daily classroom operations; and developing professional relationships with students, parents, district faculty and staff.

Bachelor of Arts

Pre-Professional

Secondary Teaching

Bachelor of Science

Career Choices:

Chemist

Lawyer

Patent Specialist

Biologist

Physician

Junior/Senior High School
Science Teacher

Student Profile:

Do you ...

enjoy chemistry?

have an aptitude for problem
solving and team work?

enjoy courses in math and science?

possess strong writing, listening
and speaking skills?

enjoy helping others learn and
apply what they learn?

Bachelor's Degrees

Chemistry

Chemistry Bachelor of Arts

Chemistry (39 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
CH451	Introduction to Biochemistry	4
CH453	Introduction to Toxicology	3
CH361	Physical Chemistry	4
EV395	Junior Seminar	1
EV499	Senior Thesis	2

Directed Electives (8 credits)

ID399	Internship in Chemistry	
CH electives	(300-level or higher beyond courses listed above)	

Other Departments (27 credits)

BA211	Business Statistics	3
MA143	Calculus for Engineering I	
	or	4
MA151	Calculus I	
MA144	Calculus for Engineering II	
	or	4
MA152	Calculus II	
PH231	Applied Physics I	4
PH232	Applied Physics II	4
	Foreign Language I	4
	Foreign Language II	4

Other General Education (25-28 credits)

EN110	Freshman Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
SD101	Fund. of Speech Communication	3
	Approved Humanities*	3
	Approved Social Science*	6-8
	Approved Soc. Sci. Diversity*	3-4

*consult list for approved courses

Free elective credits must be completed so that at least 124 credits have been earned.

Secondary Teaching Certification

To be recommended for secondary teacher certification, students must complete an approved minor in a second teachable subject and the approved teacher education courses. You earn a bachelor of arts degree, then participate in a fifth-year teaching internship with accompanying graduate-level course work.

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
MA143	Calculus for Engineering I		MA144	Calculus for Engineering II	4
	or	4		or	4
MA151	Calculus I		MA152	Calculus II	4
	Foreign Language I	4		Foreign Language II	4
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
		<u>16</u>			<u>15</u>
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
BA211	Business Statistics	3	HU251	Humanities I	4
SD101	Fund. of Speech Communication	3		Approved Social Science	3
CH231	Quantitative Analysis	4	CH332	Instrumental Analysis	4
		<u>14</u>			<u>15</u>
Third Year					
CH451	Introduction to Biochemistry	4			
	Approved Social Science Diversity	3	EV395	Junior Seminar	1
PH231	Applied Physics I	4	PH232	Applied Physics II	4
CH	Elective	4	CH	Electives	4
		<u>15</u>		Electives	<u>7</u>
					<u>16</u>
Fourth Year					
CH361	Physical Chemistry	4	CH453	Introduction to Toxicology	3
	Approved Humanities	3	EV499	Senior Thesis	2
	Electives	9		Approved Social Science	3
		<u>16</u>		Electives	<u>8</u>
					<u>16</u>

Bachelor's Degrees

Chemistry Pre-Professional

Chemistry Degree Requirements (39 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
CH451	Introduction to Biochemistry	4
CH453	Introduction to Toxicology	3
CH361	Physical Chemistry	4
EV395	Junior Seminar	1
EV499	Senior Thesis	2

Directed Electives (8 credits)

Choose eight credits from the following:

ID399	Internship in Chemistry	2-4
CH	electives (300-level or higher beyond courses listed above)	

Pre-Professional Courses (16 credits)

BL109	General Biology	4
BL110/111	General Zoology/Botany	4
BL220	Genetics	4
BL421	Cell Biology	4

Support Courses (27 credits)

PH231	Applied Physics I	4
PH232	Applied Physics II	4
	Foreign Language I	4
	Foreign Language II	4
BA211	Business Statistics	3
MA143	Calculus for Engineering	4
	or	
MA151	Calculus I	
MA144	Calculus for Engineering	4
	or	
MA152	Calculus II	

Other General Education (25-28 credits)

EN110	Freshman Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
SD101	Fund. of Speech Communication	3
	Approved Humanities*	3
	Approved Social Science*	6-8
	Approved Soc. Sci. Diversity*	3-4

*consult list for approved courses

Free elective credits must be completed for a minimum of 124 total credits.

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
MA143	Calculus for Engineering I		MA144	Calculus for Engineering II	
	or			or	
MA151	Calculus I	4	MA152	Calculus II	3
EN110	First-Year Composition I	3	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
		<u>16</u>	EN111	First-Year Composition II	<u>3</u>
					15
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
BA211	Business Statistics	3	HU251	Humanities I	4
SD101	Fund. of Speech Communication	3		Free Electives	3
PH231	Applied Physics I	4	PH232	Applied Physics II	4
	Soc. Sci. Diversity	3			<u>15</u>
		<u>17</u>			
Third Year					
CH231	Quantitative Analysis	4	CH332	Instrumental Analysis	4
BA211	Business Statistics	4	EV395	Junior Seminar	1
CH	Elective	4		Approved Social Science	3
BL220	Genetics	4	BL421	Cell Biology	4
		<u>16</u>		Electives	4
					<u>16</u>
Fourth Year					
CH361	Physical Chemistry	4	CH453	Introductory Toxicology	3
	Approved Humanities	3	EV499	Senior Thesis	2
	Electives	2		Foreign Language II	4
	Foreign Language I	4	CH	Electives	4
	Approved Social Science	3			<u>13</u>
		<u>16</u>			

Chemistry

Chemistry Bachelor of Science

Chemistry Degree Requirements (54 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
CH361	Physical Chemistry I	4
CH362	Physical Chemistry II	4
CH451	Introduction to Biochemistry	4
CH452	Biochemistry II	4
CH453	Introduction to Toxicology	3
EV395	Junior Seminar	1
EV499	Senior Thesis	2
CH	Electives 300 level or higher	8

Support Courses (19 credits)

PH231	Applied Physics I	4
PH232	Applied Physics II	4
BA211	Business Statistics	3
MA143	Calculus for Engineering	4
or		
MA151	Calculus I	4
MA144	Calculus for Engineering	4
or		
MA152	Calculus II	4

Other General Education (25-28 credits)

EN110	Freshman Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
SD101	Fund. of Speech Communication	3
	Approved Humanities*	3
	Approved Social Science*	6-8
	Approved Soc. Sci. Diversity*	3-4

*consult list for approved courses

Free elective credits must be completed for a minimum of 124 total credits.

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
MA143	Calculus for Engineering I	4	MA144	Calculus for Engineering II	4
	or		or		
MA151	Calculus I	4	MA152	Calculus II	4
EN110	First-Year Composition I	3		Free Electives	3
	Electives	4	EN111	First-Year Composition II	3
		<u>16</u>			<u>14</u>
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4	CH332	Instrumental Analysis	4
BA211	Business Statistics	3		Free Electives	4
PH231	Applied Physics I	4	PH232	Applied Physics II	4
		<u>15</u>			<u>16</u>
Third Year					
CH361	Physical Chemistry I	4			
CH451	Introductory Biochemistry	4	CH362	Physical Chemistry II	4
CH	Electives	4	SD101	Fund. of Speech Communication	3
	Electives	4	HU251	Humanities I	4
EV395	Junior Seminar	1	CH452	Biochemistry II	3
		<u>17</u>			<u>14</u>
Fourth Year					
CH	Electives	4	CH453	Introductory Toxicology	3
	Approved Cultural Diversity	3	EV499	Senior Thesis	2
	Approved Aesthetics	3		Social Science Elective	3
	Social Science Electives	3		Free Electives	8
	Free Electives	3			<u>16</u>
		<u>16</u>			

Bachelor's Degrees

Clinical Laboratory Science

See College of Natural and Health Sciences, page 281.

Program Description:

Clinical laboratory scientists perform most of the clinical tests conducted in hospital, veterinary, state, and health laboratories. You may obtain the bachelor of science degree in this area by completing the specified three-year sequence at the University followed by 12 months training at an NAACLS-accredited hospital. The University is affiliated with five such hospitals, but you may elect any accredited hospital whose program is approved as satisfactory by the University. Additionally, you may choose to obtain a bachelor of science in biology and then participate in the 12-month hospital training. Lake Superior State University does not assume responsibility for obtaining an affiliation at an approved hospital. Graduates of this program are eligible to take national examinations for certification as registered clinical laboratory scientists and/or medical technologists.

Career Descriptions:

Clinical Laboratory Scientist — performs analytical tests on human body substances to detect evidence of, or prevent disease or impairment, and to promote and monitor good health.

Laboratory Supervisor — manages and supervises clinical laboratory procedures, determines usage of lab space, equipment and budgetary resources.

Specialty Research Scientist — clinical expertise in research areas such as biochemical genetics, cytogenetics, cell marker testing, toxicology, epidemiology.

Bachelor of Science

Career Choices:

Clinical Laboratory Scientist
Laboratory Supervisor
Specialty Research Scientist

Student Profile:

Do you have...

a sharp, inquisitive mind?
excellent hand-eye coordination?
an ability to perform many tasks simultaneously without error?

Bachelor's Degrees

The degree in clinical laboratory science includes the following courses in addition to the biology core (see page 86) in order to qualify to take the national registry examinations. **Note:** BL199, BL280, BL299, BL399, BL495 and BL499 are not required.

BL330	Animal Physiology	4
BL380	Hematology	4
BL422	Parasitology	3
BL423	Immunology	4
BL460	Clinical Internship	30
BL480	Advanced Clinical Microbiology	3
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH232	Instrumental Analysis	4
CH451	Biochemistry	3

Additionally, a student is required to satisfy general education requirements so that 128 semester credits are earned.

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	CH116	General Chemistry II	4
EN110	First-Year Composition I	3	MA112	Calculus for Business & Life Science	4
		<u>15</u>	EN111	First-Year Composition II	3
					<u>15</u>
Second Year					
HU251	Humanities I	4	BL380	Hematology*	3
BL204	General Microbiology	4	BL330	Animal Physiology	4
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
	Social Science Elective (Gen. Ed.)	3		Social Science Elective (Gen. Ed.)	3
MA207	Principles of Statistical Methods	3	SD101	Fund. of Speech Communication	3
		<u>18</u>			<u>17</u>
Third Year					
BL422	Parasitology	3	BL423	Immunology	4
BL220	Genetics	4	CH232	Instrumental Analysis	4
CH231	Quantitative Analysis	4		Soc. Sci. Diversity (Gen. Ed.)	3
CH451	Biochemistry	4		Humanities	3
		<u>15</u>	BL480	Advanced Clinical Microbiology*	4
					<u>18</u>
<i>*alternate year courses</i>					

Computer and Mathematical Sciences

See College of Engineering and Mathematics, page 268.

Bachelor of Science

Career Choices:

Senior Programmer

Systems Analyst

Database Administrator

Student Profile:

Do you ...

feel comfortable with numerical problems?

like working with computers?

enjoy the challenge of problem-solving?

Program Description:

This degree provides a solid background in both mathematics and computer science. Many graduates from this program who work in the computer industry have stressed that the mathematics foundation gained from this degree gave them a distinct advantage in the work place.

Modeling and Simulation of Real Systems — creates computer models of environments and processes in order to understand how they work and how to improve or alter them.

Graduate School — the background gained by this degree provides a good preparation for graduate study in computer science, mathematics and other related fields.

Career Descriptions:

Senior Programmer — designs, writes and supervises the development of large-scale software projects.

Systems Analyst — works with customers to analyze organizations' needs; sets up systems for company.

Database Administrator — analyzes, designs and implements the database needs of an organization.

Computer and Mathematical Sciences

Computer and Mathematical Sciences Bachelor of Science

Departmental Requirements (72 credits)

CS103	Survey of computer Science	3
CS105	Intro. to Computer Programming	3
CS121	Principles of Programming	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 and	3
CS419	Senior Projects in CS	3
or		
CS428	Computer Science Co-operative Education I and	3
CS429	Computer Science Co-operative Education II	3
or		
CS438	Computer Science Research Project I and	3
CS439	Computer Science Research Project II	3
MA151	Calculus I	4
MA 152	Calculus II	4
MA215	Fundamental Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA261	Intro. to Numerical Methods	3
MA305	Linear Algebra	3
MA308	Probability and Mathematical Statistics	3
MA309	Applied Statistics	4
MA351	Graph Theory	3

General Electives (33-37 credits)

Free Electives (15-19 credits)

Total Credits: 124

Elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

FALL		SPRING			
First Year					
MA140	Precalculus Mathematics (if needed)	5			
	or				
MA151	Calculus I	4	MA151	Calculus I	4
			or		
MA152	Calculus II		MA152	Calculus II	
CS103	Survey of Computer Science	3	CS121	Principles of Programming	3
CS105	Intro. to Computer Programming	3		Science Elective	4
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
	Social Science Elective	3			14
		16-17			
Second Year					
MA152	Calculus II		MA216	Discrete Mathematics and Problem Solving	3
	or		CS290	Independent Study in Computer Science	3
MA215	Fund. Concepts of Mathematics	4	CS312	File and Database Management	3
CS201	Data Structures and Algorithms	3	SD101	Fund. of Speech Communication	3
CS211	Database Applications	3		Science Elective	4
	Social Science Elective	3-4			16
		16-17			
Third Year					
MA261	Numerical Methods		MA351	Graph Theory	
	or		or		
MA305	Linear Algebra	3	CS221	Computer Networks	3
CS205	Computer Organization and Architecture	3	CS334	Operating System Concepts	3
CS333	Systems Programming	3	MA308	Probability and Mathematical Statistics	3
HU251	Humanities I	4		Electives	3
		16			15
Fourth Year					
MA261	Numerical Methods		CS*	Senior Sequence	3
	or		SO103	Cultural Diversity	3
MA309	Applied Statistics	4	HU252	Humanities II	4
CS321	Computer Graphics	3		Electives	6
CS*	Senior Sequence	3			16
	Electives	3			
		16			

*Choose CS418/419 or CS428/429 or CS438/439.

Bachelor's Degrees

Computer Engineering

See College of Engineering
and Mathematics, page 268.

Bachelor of Science Robotics and Automation

Career Titles:

Software Design Engineer
Hardware Design Engineer
Robotics Engineer
Controls Engineer
Systems Engineer
Project Engineer
Applications Engineer

Student Profile:

Do you ...

like problem solving?

like working with computer
hardware and software?

wonder how computers control
and interact with hardware?

Program Description:

LSSU's Computer Engineering program has been designed to put you in the high-demand computer market with the potential for good career growth. The program blends practical computer science courses in computer organization, databases, operating systems, and networks with traditionally hands-on electrical engineering courses in digital circuits, digital system, microcontrollers, computer programming, and digital signal processing. This combination gives you a broad-based education that ties software to hardware and theory to application. Some of the program highlights are:

- The program provides an excellent mix of theory and practical laboratory experiences, preparing you to solve real-world problems.
- For your senior year experience, choose from opportunities in cooperative education, industry-based projects or research projects.
- Engineering courses begin in your freshman year.
- Opportunities exist for you to work with faculty on current undergraduate research projects.
- You will study assembly language programming, computer architecture, microcontroller hardware and software, databases, Rapid Application Development (RAD) tools, digital signals and systems, and networking.
- Elective programming courses in robotics, "C" and industrial systems are available.

Career Description:

Computer engineering graduates will have many career choices. You may choose engineering positions in computer systems design, software development, hardware design, microcontroller systems design, robotics, research and development, applications, or sales.

Cooperative Education:

Opportunities are available as part of this program for students who are academically qualified. A certificate that documents this practical training is available.

Computer Engineering

Computer Engineering Bachelor of Science

Departmental Requirements 103

Mathematics

EG345	Probability and Statistics	3
MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA243	Calculus and Linear Algebra for Engineers	4
MA310	Differential Equations	3

Sciences

PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Computer Science

CS103	Introduction to Computer Science	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
CS221	Computer Networks	3
CS333	Systems Programming	3
CS334	Operating Systems Concepts	3

Engineering

EE125	Digital Fundamentals	4
EE210	Circuits and Machines	4
EE250	Microcontroller Fundamentals	4
EE310	Network Analysis I	5
EE355	Microcontroller Systems	4
EE370	Electronic Devices	4
EE420	Digital Design	4
EG140	Numerical Applications for Engineers	1
EG340	Advanced Numerical Applications for Engineers	1
EG346	Probability and Statistics Lab for Engineers	1
EG491	Engineering Design Project I	3
EG495	Engineering Design Project II	3
RS460	Control Systems	4

General Education Requirements 25

Lower-division Courses

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
SD101	Fund. of Speech Communication	3
	Humanities Elective	3
	Social Science Electives	6
	Social Science Diversity	3

FALL		SPRING			
First Year					
CS103	Introduction to Computer Science	3	CS121	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3	EE125	Digital Fundamentals	4
EN110	First-Year Composition I	3	EG140	Numerical Applications for Engineers	1
	Humanities/Aesthetics Elective	3	EN111	First-Year Composition II	3
MA143	Calculus for Engineering I	4	MA144	Calculus for Engineering II	4
		16			15
Second Year					
CS201	Data Structures and Algorithms	3	EE210	Circuits and Machines	4
CS205	Computer Organization and Architecture	3	EG345	Probability and Statistics	3
EE250	Microcontroller Fundamentals	4	EG346	Probability and Statistics Lab for Engineers	1
MA243	Calculus and Linear Algebra for Engineers	4	PH232	Applied Physics for Engineers and Scientists II	4
PH231	Applied Physics for Engineers and Scientists I	4	SD101	Fund. of Speech Communication	3
		18			15
Third Year					
CS333	Systems Programming	3	CS221	Computer Networks	3
EE310	Network Analysis I	5	CS334	Operating Systems Concepts	3
EE370	Electronic Devices	4	EE355	Microcontroller Systems	4
EG340	Advanced Numerical Applications for Engineers	1		General Technical Elective/Engineering Option	4
MA310	Differential Equations	3		Social Science Elective	3
		16			17
Fourth Year					
EE420	Digital Design	4		Social Science Diversity Elective	3
EG491	Engineering Design Project I	3	EG495	Engineering Design Project II	3
RS460	Control Systems	4	HU251	Humanities I	4
	General Technical Elective/Engineering Option	4		Social Science Elective	3
		15		General Technical Elective/Engineering Option	3
					16

Students may select three "General Technical Electives" or complete the "Robotics and Automation Option"

General Technical Electives

EE375	Electronic Circuits	4
EE345	Fund. of Engineering and Electromagnetics	3
EE425	Digital & Signal Processing	3
EM220	Statics	3
EM320	Dynamics	4
MA216	Discrete Mathematics	3
ME355	Thermal and Fluids Engineering I	5
RS461	Design of Control Systems	4

Robotics and Automation Option

RS385	Robotics Engineering	3
RS430	Systems Integration and Machine Vision	4
RS435	Automated Manufacturing Systems	4

Bachelor's Degrees

Computer Networking

See College of Engineering and Mathematics, page 268.

Bachelor of Science

Career Titles:

Network Administrators

Web Analyst/Designer/
Programmer

System Administrator

Student Profile:

Do you ...

like working with computers?

become intrigued when dealing with networking and Internet issues?

enjoy the challenge of problem solving?

Program Description:

This degree gives students the knowledge and tools necessary to be successful in the field of computer networking. Courses cover a range of networking topics, including network operating systems, hardware, web page design, and system administration.

Through our International University College Division, six of the courses required for the program are taught at Sault College in Sault Ste. Marie, Ontario. This collaboration between LSSU and Sault College exposes students to a broader range of hardware, software and networking topics. They will have hands-on experience with Linux, Novell and Windows platforms, as well as networking hardware and operating system installation. By taking advantage of the resources, as well as the faculty expertise, from two schools, students will benefit from an enriched educational experience — all within LSSU's regular tuition structure.

Some of the highlights of the program are:

- Students get hands-on training in networking hardware and software, and receive the necessary concepts of hardware, software and network operating systems.
- Students are prepared to take industry-standard examinations, such as those established by Cisco, Novell and Microsoft.
- Students can choose software design, research, or co-operative education as their senior capstone experience.

Career Descriptions:

Network Administrator — designs, installs and maintains networks; sets up and manages accounts for users and resources.

Web Analyst/Designer/Programmer — manages a web site; designs web pages, graphics and program scripts to be implemented on the World Wide Web.

System Administrator — sets up and manages multi-user computer systems; manages users, resources, and handles security issues.

Computer Networking

Computer Networking Bachelor of Science

Departmental Requirements (67 credits)

CS103	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3
CS106	Advanced Web Page Design and Administration	3
CS121	Principles of Programming	3
CS202	Operating Systems Mgt. (SC)	3
CS203	System Integration & Maintenance (SC)	3
CS211	Database Applications	3
CS221	Computer Networks	3
CS223	Advanced Networking (SC)	3
CS271	Network Hardware and Software	3
CS281	Network Design and Implementation	3
CS290	Independent Study in Computer Science	4
CS303	Network Operating Systems I (SC)	3
CS305	Network Operating Systems II (SC)	3
CS308	Network Security (SC)	3
CS319	Java Programming	3
CS333	Systems Programming	3
CS412	System Administration	3
CS418	Software Engineering and Senior Projects in CS	3
or		
CS428	Computer Science Co-operative Education I and	3
CS429	Computer Science Co-operative Education II	3
or		
CS438	Computer Science Research Project I and	3
CS439	Computer Science Research Project II	3
MA111	College Algebra	3
MA207	Princ. of Statistical Methods	3

Support Courses (9 credits)

BA121	Introduction to Business	3
BA231	Business Communications	3
DP163	Troubleshooting and Repair of Personal Computers	3

General Education (33-37)

Free Electives (11-15)

Total Credits in Program 124

Elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

(SC) denotes course offered at Sault College.

FALL		SPRING			
First Year					
CS103	Introduction to Computer Science	3	CS106	Advanced Web Page Design	3
CS105	Intro. to Computer Programming	3	CS221	Computer Networks	3
EN110	First-Year Composition I	3	CS121	Principles of Programming	3
MA111	College Algebra	3	EN111	First-Year Composition II	3
SO103	Social Science Diversity	3	BA121	Introduction to Business	3
		<u>15</u>			<u>15</u>
Second Year					
CS211	Database Applications	3	CS281	Network Design & Implementation	3
DP163	PC Troubleshooting/Repair	3	CS290	Independent Studies in CS	4
CS271	Network Hardware & Software	3	MA207	Prin. of Statistical Methods	3
BA231	Business Communications	3	CS223	Advanced Networking (SC)	3
CS202	Operating Systems Mgt. (SC)	3	SD101	Fund. in Speech Communication	3
		<u>15</u>			<u>16</u>
Third Year					
CS203	System Integration & Maint. (SC)	3	CS308	Network Security (SC)	3
CS319	Java Programming	3		Humanities Elective	3-4
HU251	Humanities I	4		Natural Science Elective	4
	Social Science Elective	3-4		Free Elective	3
	Free Elective	3		Free Elective	3
		<u>16-17</u>			<u>16-17</u>
Fourth Year					
CS303	Network Operating Systems I (SC)	3	CS305	Network Operating Systems II (SC)	3
CS333	Systems Programming	3	CS412	System Administration	3
CS*	Senior Sequence	3	CS*	Senior Sequence	3
	Natural Science Elective	4		Social Science Elective	3-4
	Free Elective	3		Free Elective	3
		<u>16</u>			<u>15-16</u>

*Choose CS418/419 or CS428/429 or CS438/439.
(SC) denotes course offered at Sault College.

Computer Science

See College of Engineering
and Mathematics, page 268.

**Bachelor of Science
Computer Science
Secondary Teaching**

Career Choices:

Computer Programmer
Systems Analyst
Information Technology Specialist

Program Description:

This degree provides a solid background in computer science with supporting coursework in applied mathematics and business. Adding an appropriate minor field of study can complement the program, as well as give the graduate a competitive edge in the work force.

Career Descriptions:

Computer Programmer — designs, writes and tests computer programs; supervises large software projects.

Systems Analyst — works with customers to analyze organizations' needs; sets up systems for the company.

Information Technology Specialist — manages IT group at a large company, research institute or school.

Student Profile:

Do you...

like working with computers?

enjoy the challenge of
problem-solving?

Bachelor's Degrees

Computer Science

Computer Science Bachelor of Science

Departmental Requirements (56-57 credits)

CS103	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3
CS121	Principles of Programming	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
CS419	Senior Projects in CS	3
or		
CS428	Computer Science Co-operative Education I	3
and		
CS429	Computer Science Co-operative Education II	3
or		
CS438	Computer Science Research Project I	3
and		
CS439	Computer Science Research Project II	3
MA108	Trigonometry and Vectors for Physics	1
and		
MA111	College Algebra	3
or		
MA140	Precalculus Mathematics	5
MA112	Calculus for Business and Life Science	4
or		
MA151	Calculus I (if satisfied MA140)	3
MA207	Prin. of Statistical Methods	3
MA305	Linear Algebra	3

Other Requirements (11 credits)

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
BA121	Introduction to Business	3

General Education (33-37 credits)

Free Electives (or minor) (19-24 credits)

Total Credits: 124

Elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

FALL	SPRING
First Year	
CS103 Survey of Computer Science 3	CS121 Principles of Programming 3
CS105 Intro. to Computer Programming 3	SD101 Fund. of Speech Communication 3
EN110 First-Year Composition I 3	MA** 3-4
MA* 4-5	Science Elective 4
Social Science Elective 3-4	EN111 First-Year Composition II 3
16-18	16-17
Second Year	
CS201 Data Structures and Algorithms 3	CS290 Independent Study in Computer Science 3
CS211 Database Applications 3	CS312 File and Database Management 3
Social Science Elective 3-4	AC133 Principles of Accounting II 4
AC132 Principles of Accounting I 4	Science Elective 4
Elective 3	14
16-17	
Third Year	
CS205 Computer Organization and Architecture 3	CS221 Computer Networks 3
CS333 Systems Programming 3	CS334 Operating Systems Concepts 3
CS321 Computer Graphics 3	BA121 Introduction to Business Electives 6
or	15
HU251 Humanities I 4	
MA207 Prin. of Statistical Methods 3	
or	
MA305 Linear Algebra 3	
Elective 3	
15-16	
Fourth Year	
CS321 Computer Graphics 3	CS*** Senior Sequence 3
or	SO103 Cultural Diversity 3
HU251 Humanities I 4	HU252 Humanities II 4
CS*** Senior Sequence 3	Electives 6
MA207 Prin. of Statistical Methods 3	16
or	
MA305 Linear Algebra 6	
Electives 6	
15-16	

*Students may elect either MA108 + MA111 (4) or MA140 (5).

**Students may elect either MA112 or, if MA140 was taken, MA151.

***Choose CS418/419 or CS428/429 or CS438/439.

Bachelor's Degrees

Computer Science

Computer Science Bachelor of Science Secondary Teaching*

Departmental Requirements (46 credits)

CS103	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3
CS106	Advanced Web Page Design and Web Site Administration	3
CS121	Principles of Programming	3
CS201	Data Structures and Algorithms	3
CS211	Database Applications	3
CS221	Computer Networks	3
CS271	Network Hardware and Software	3
CS281	Network Design and Implementation	3
CS312	File and Database Management	3
CS418	Software Engineering	3
CS419	Senior Projects in CS	3
or		
CS428	Computer Science Co-operative Education I	3
and		
CS429	Computer Science Co-operative Education II	3
or		
CS438	Computer Science Research Project I	3
and		
CS439	Computer Science Research Project II	3
MA151	Calculus I	4
MA207	Prin. of Statistical Methods	3
MA305	Linear Algebra	3

Other Support Courses

DP163	Troubleshooting and Repair of Personal Computers	3
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Professional Educational Sequence (22 credits)

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Learning Theory and Teaching Practice	4
TE430	General Methods for Secondary Teachers	3
TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3
TE445	Teaching Computer Science in the Secondary Classroom	3

General Education (30-33 credits)

Total credits in program: 124

Elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

Bachelor's Degrees

FALL		SPRING			
First Year					
CS103	Survey of Computer Science	3	CS106	Advanced Web Page Design and Web Site Administration	3
CS105	Intro. to Computer Programming	3	CS121	Principles of Programming	3
EN110	First-Year Composition I	3	MA151	Calculus I	3
MA140	Pre-calculus (if needed) or Elective	4-5	EN111	First-Year Composition II	3
TE150	Reflections on Learning and Teaching	3		Elective (minor)	3-4
		16-17			15-16
Second Year					
CS201	Data Structures and Algorithms	3	CS221	Computer Networks	3
CS211	Database Applications	3	CS312	File and Database Management	3
SD101	Fund. of Speech Communication	3	MA207	Prin. of Statistical Methods	3
	Elective (minor)	3-4	TE301	Learning Theory and Teaching Practice	4
TE250	Student Diversity & Schools	3		Elective (minor)	3-4
		15-16			16-17
Third Year					
CS271	Network Hardware & Software	3	CS281	Network Design and Implementation	3
DP163	Troubleshooting & Repair of Personal Computers	3	MA305	Linear Algebra	3
HU251	Humanities I	4	HU252	Humanities II	4
TE430	General Methods for Secondary Teachers	3	TE431	The Secondary Learner	3
	Elective (minor)	3-4		Elective (minor)	3
		16-17			16
Fourth Year					
CS*	Senior Sequence	3	TE445	Teaching Computer Science in the Secondary Classroom	3
TE440	Reading in the Content Area	3	CS*	Senior Sequence	3
	Social Science	3-4		Natural Science	4
	Natural Science	4		Elective (minor)	3
	Elective (minor)	3		Social Science	3-4
		16-17			16-17
Fifth Year					
TE491	Internship in Teaching Diverse Learners I	6	TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles & Teaching Practice I	3	TE603	Professional Roles & Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		12			12

*Choose CS418/419 or CS428/429 or CS438/439.

5th Year Internship for Teacher Certification (24 credits)

TE491	Internship in Teaching Diverse Learners I	6
TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3
TE602	Reflection and Inquiry in Teaching Practice I	3
TE603	Professional Roles and Teaching Practice II	3
TE604	Reflection and Inquiry in Teaching Practice II	3

*Pending state approval.

Criminal Justice

See College of Arts, Letters
and Social Sciences, page 246.

Program Description:

The bachelor of science degree in criminal justice offers you the opportunity to specialize in one of six areas of concentration. This integrated program requires students to complete an internship as well as a senior project. Students selecting the law enforcement, criminalistics or public safety options may also be eligible for police certification under the Michigan Commission on Law Enforcement Standards (MCOLES). Students completing the associate's or bachelor's degree in corrections will also be eligible for certification by the Michigan Corrections Officer Training Council (MCOTC).

The bachelor's degree option in public safety may include MCOLES certification as well as Michigan Firefighter Training Council certification.

Career Descriptions:

Police Officer — works for local, state or federal agencies; works as a conservation officer; has broad arrest powers; is responsible for the safety of his/her respective communities; investigates crimes; provides a variety of related services.

Probation/Parole Officer— manages caseloads of offenders; assures that clients follow the requirements of their probation; helps clients in their transition back to society.

Corrections Officer — works in secure correctional facilities; performs custodial services; acts as resident unit manager; assists prisoners with their transition back to society.

Loss Control Officer — provides many of the same services that the police do only in the private sector; maintains perimeter security in industrial settings; manages loss control programs in industrial and retail organizations; performs private investigative work.

Criminalist — works in a crime laboratory; performs analysis of materials and other lab functions; works as a crime scene evidence technician.

Public Safety Officer — works in a public safety department as a law enforcement officer and firefighter; works as a private consultant in industry.

Bachelor of Science

Emphasis in:

**Corrections
Criminalistics**

Generalist

Law Enforcement

**Certification in Law
Enforcement**

**3-Year Plan for a BS
following NRT degree**

Loss Control

Public Safety

Career Choices:

Police Officer
Corrections Officer
Probation Officer
Parole Officer
Conservation Officer
Private Security Officer
Public Safety Officer
Criminal Investigator
Evidence Technician

Student Profile:

Are you...
interested in people?
interested in the law?
curious about human behavior?
able to work without supervision?

Bachelor's Degrees

Criminal Justice

Criminal Justice Corrections Emphasis Bachelor of Science

General Education Requirements (27-28 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
SO103	Cultural Diversity	3
SO214	Criminology	3

Minor (20 credits)

Electives (10 credits)

Canadian students may substitute CJ202 for CJ319 and PS160 for PS110.

FALL		SPRING			
First Year					
CJ101	Intro. to Criminal Justice	3	EN111	First-Year Composition II	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	First-Year Composition I	3		Elective	5
	General Education Math	3			15
		<u>15</u>			
Second Year					
CJ140	Correctional Client Growth and Development	3	PS120	Intro. to Legal Processes	3
CJ240	Community Based Corrections	3	CJ220	Institutional Corrections	3
SD101	Fund. of Speech Communication	3	PY259	Abnormal Psychology	3
PY101	Introduction to Psychology	4	SO103	Social Science Diversity	3
	Elective	2		Natural Science Elective	4
		<u>15</u>			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	HU251	Humanities	4
CJ	Elective (communication intensive)	3	CJ345	Statistics & Design for Public Safety	4
	Minor	3	CJ355	Juvenile Justice	3
		<u>16</u>			17
Fourth Year					
CJ401	Senior Seminar	3	CJ402	Criminal Justice Internship	3
CJ319	Substantive Criminal Law	3		Humanities Elective	4
	Minor	9		Minor	8
		<u>15</u>			15

Bachelor's Degrees

Criminal Justice

Criminal Justice Criminalistics Emphasis Bachelor of Science

General Education Requirements (17 credits)

Major Requirements (36 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ197	Physical Fitness for Law Enforcement*	2
CJ201	Firearms Training	1
CJ243	Investigation	3
CJ313	Crisis Intervention and 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 (74 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	4
CH232	Instrumental Analysis	4
CH351	Introductory Biochemistry	4
HE190	Prehospital Emergency Care & Crisis Intervention I	4
HE191	Prehospital Emergency Care & Crisis Intervention II	4
MA111	College Algebra	3
MA112	Calculus for Business & Life Sciences**	4
NS101	Conceptual Physics	3
PS110	Intro. to American Government and Politics	4
PY101	intro. to Psychology	4
PY259	Abnormal Psychology	3
SO103	Cultural Diversity	3
SO214	Criminology	3

*Repeated twice

**or MA151/MA143

Canadian students may substitute PS160 for PS110.

Canadian students do not take CJ197, HE190 or HE191. These are replaced by advisor-approved electives. Canadian students may substitute CJ202 and CJ406 for CJ319 and CJ409.

FALL		SPRING		
First Year				
CJ101	Intro. to Criminal Justice	3	CH116 Principles of Chemistry II	4
CJ102	Police Process	3	MA112 Calculus for Business & Life Sciences	4
CH115	Principles of Chemistry I	5	EN111 First-Year Composition II	3
EN110	First-Year Composition I	3	BL109 General Biology	4
MA111	College Algebra	3		15
		17		
Second Year				
CH225	Organic Chemistry I	4	CH226 Organic Chemistry II	4
CH231	Quantitative Analysis	4	BL111 Botany	2
BL110	Zoology	2	NS101 Conceptual Physics	4
CJ201	Firearms	1	PY259 Abnormal Psychology	3
CJ243	Investigation	3	SD101 Fund. of Speech Communication	3
		14		16
Third Year				
HU251	Humanities	4	CH332 Instrumental Analysis	4
PS110	Intro. to American Government and Politics	4	SO214 Criminology	3
SO103	Cultural Diversity	3	CJ345 Statistics & Design for Public Safety	4
PY101	Introduction to Psychology	4	CJ402 Criminal Justice Internship	3
		15	Humanities Elective	4
				18
Fourth Year				
CH451	Biochemistry	4	CJ321 Ethical Issues in Public Safety*	3
CJ319	Substantive Criminal Law*	3	CJ313 Crisis Intervention and Deviant Behavior*	3
CJ401	Senior Seminar	3	CJ444 Criminalistics*	4
HE190	Prehospital Emergency Care & Crisis Intervention I*	4	CJ409 Procedural Criminal Law*	3
CJ197	Physical Fitness for Law Enforcement*	1	HE191 Prehospital Emergency Care & Crisis Intervention II*	4
		14	CJ197 Physical Fitness for Law Enforcement*	4
				18
<i>*MCOLES course</i>				

Bachelor's Degrees

Criminal Justice

Criminal Justice: Generalist Emphasis Bachelor of Science

General education requirements (25 credits)

Major requirements (45 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ321	Ethical Issues in Public Safety	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 Psychology	4
PY259	Abnormal Psychology	3
SO103	Cultural Diversity	3
SO214	Criminology	3

Electives (31 credits)

Criminal Justice Coursework at the 300/400 level (19 credits)

Canadian students may substitute PS160 for PS110.

FALL		SPRING			
First Year					
CJ101	Intro. to Criminal Justice	3	PS110	Intro. to American Government and Politics	4
CJ102	Police Process	3	PS120	Legal Process	3
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
CJ	Elective	3	CJ	Elective	3
	General Education Math	3			13
		15			
Second Year					
CJ110	Introduction to Corrections	3	PY259	Abnormal Psychology	3
SD101	Fund. of Speech Communication	3		Humanities Elective	4
PY101	Introduction to Psychology	4		Natural Science Elective	4
HU251	Humanities	4	CJ	Elective	3
CJ	Elective	3	SO103	Cultural Diversity	3
		17			17
Third Year					
CJ321	Ethics	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

Criminal Justice

Criminal Justice Law Enforcement Emphasis Bachelor of Science

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 and 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
SO103	Cultural Diversity	3
SO214	Criminology	3

Electives (31 credits)

Canadian students may substitute CJ202 and CJ406 for CJ319 and CJ409 and PS160 for PS110.

FALL	SPRING
First Year	
CJ101 Intro. to Criminal Justice 3	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 First-Year Composition I 3	EN111 First-Year Composition II 3
General Education Math 3	SO103 Cultural Diversity 3
15	16
Second Year	
CJ201 Firearms 1	CJ206 Law Enforcement/Loss Control Internship 3
CJ212 Loss Control 3	PY259 Abnormal Psychology 3
SD101 Fund. of Speech Communication 3	SO214 Criminology 3
FS101 Introduction to Fire Science 3	HU251 Humanities 4
PY101 Introduction to Psychology 4	Natural Science Elective 4
CJ243 Investigation 3	
17	17
Third Year	
Elective 3	CJ313 Crisis Intervention and Deviant Behavior 3
Humanities Elective 4	CJ321 Ethical Issues in Public Safety 3
Natural Science 4	CJ345 Stats for Design & Public Safety 4
Elective 3	Elective 5
14	15
Fourth Year	
CJ401 Senior Seminar 3	CJ402 Criminal Justice Internship 3
CJ319 Substantive Criminal Law 3	CJ409 Procedural Criminal Law 3
Electives 8	CJ444 Criminalistics 4
14	Electives 6
	16

Bachelor's Degrees

Criminal Justice

Certification Criminal Justice Law Enforcement Emphasis Bachelor of Science

Bachelor's Degrees

General Education Requirements (25 credits)

Major Requirements (48 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ197	Physical Fitness for Public Safety**	1
CJ201	Firearms Training	1
CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	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 and Design for Public Safety	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3
CJ409	Procedural Criminal Law*	3
CJ444	Criministics*	4
FS101	Introduction to Fire Science	3
Support Courses (30 credits)		
HE190	Prehospital Emergency Care & Crisis Intervention I*	4
HE191	Prehospital Emergency Care & Crisis Intervention II*	4
PS110	Intro. to American Government and Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology	3
SO103	Cultural Diversity	3
SO214	Criminology	3

Electives (21 credits)

*MCOLES courses
**Repeated twice

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3		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	First-Year Composition I	3	EN111	Fund. of Speech Communication	3
	General Education Math	3	PY101	Introduction to Psychology	4
		<u>15</u>			<u>17</u>
Second Year					
CJ201	Firearms	1	CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3	PY259	Abnormal Psychology	3
SD101	Fund. of Speech Communication	3	SO214	Criminology	3
FS101	Introduction to Fire Science	3	HU251	Humanities	4
CJ243	Investigation	3		Natural Science Elective	4
	Elective	3			<u>17</u>
		<u>16</u>			
Third Year					
	Humanities Elective	4	CJ402	Criminal Justice Internship	3
	Natural Science	4	CJ345	Statistics & Design or Public Safety Electives	4
SO103	Cultural Diversity	3			<u>7</u>
	Elective	3			<u>14</u>
		<u>14</u>			
Fourth Year					
CJ319	Substantive Criminal Law*	3	CJ321	Ethical Issues in Public Safety*	3
	Electives	3	CJ313	Crisis Intervention and Deviant Behavior*	3
CJ401	Senior Seminar	3	CJ444	Criministics*	4
CJ197	Physical Fitness for Public Safety**	1	CJ197	Physical Fitness for Public Safety**	1
HE190	Pre-hospital Emergency Care and Crisis Intervention I*	4	CJ409	Procedural Criminal Law*	3
		<u>14</u>	HE191	Pre-hospital Emergency Care and Crisis Intervention II*	4
					<u>18</u>

*MCOLES course
**MCOLES students only

Criminal Justice

**Criminal Justice
Three-Year Degree
for a BS in CJ
following the
NRT Degree
Bachelor of Science
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's 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's degree, students would complete the following sequence of courses. This plan assumes MCOLES certification and 92 additional hours following the NRT degree.

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		Criminology	3
PS110	Intro. to American Government and Politics	4	SO214	Humanities Elective	4
HU251	Humanities	4			13
		<u>17</u>			
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
		<u>14</u>			18
Fifth Year					
CJ319	Substantive Criminal Law*	3	CJ313	Crisis Intervention and Deviant Behavior	3
CJ401	Senior Seminar	3	CJ321	Ethical Issues in Public Safety*	3
HE190	Prehospital Emergency Care and Crisis Intervention I*	4	CJ409	Procedural Criminal Law*	3
CJ197	Physical Fitness for Public Safety**	1	CJ444	Criminalistics*	4
	Elective	4	HE191	Prehospital Emergency Care and Crisis Intervention II*	4
		<u>15</u>	CJ197	Physical Fitness for Public Safety**	1
					18

*MCOLES course

**MCOLES students only

Bachelor's Degrees

Criminal Justice

Criminal Justice Loss Control Emphasis Bachelor of Science

General Education Requirements (25 credits)

Major Requirements (64 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
CJ321	Ethical Issues in Public Safety	3
CJ341	Fire Cause & Arson Investigation	3
CJ345	Statistics	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS312	Hazardous Materials Management	4
FS321	Industrial Fire Protection	3
Support Courses (32 credits)		
CS101	Intro. to Microcomputer Applications	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
SO103	Cultural Diversity	3
SO214	Criminology	3
TC110	Industrial Safety	2

Canadian students may substitute CJ202 and CJ406 for CJ319 and CJ409, and PS160 for PS110.

Bachelor's Degrees

FALL		SPRING		
First Year				
CJ101	Introduction 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	First-Year Composition I	3	EN111 First-Year Composition II	3
	General Education Math	3	SO214 Criminology	3
		<u>15</u>		<u>16</u>
Second Year				
CJ110	Introduction to Corrections	3	CJ206 Law Enforcement/Loss Control Internship	3
CJ201	Firearms Training	1	CS101 Intro. to Microcomputer Appl.	3
FS101	Introduction to Fire Science	3	PY259 Abnormal Psychology	3
SO101	Fund. of Speech Communication	3	HU251 Humanities	4
TC110	Industrial Safety	2	Natural Science Elective	4
PY101	Introduction to Psychology	4		<u>17</u>
		<u>16</u>		
Third Year				
SO103	Cultural Diversity	3	FS301 Code Enforcement Inspection & Fire Prevention	3
	Humanities Elective	4	CJ306 Security Systems	3
	Natural Science Elective	4	CJ341 Fire Cause & Arson Investigation	3
CJ243	Investigation	3	FS321 Industrial Fire Protection	3
CJ319	Substantive Criminal Law	3	CJ345 Statistics & Design for Public Safety	4
		<u>17</u>		<u>16</u>
Fourth Year				
CJ401	Senior Seminar	3	CJ402 Criminal Justice Internship	3
FS312	Hazardous Materials Management	4	CJ409 Procedural Criminal Law	3
MN365	Human Resource Management	3	CJ444 Criminalistics	4
	Electives	4	MN451 Labor Law	4
		<u>14</u>	CJ321 Ethical Issues in Public Safety	3
				<u>17</u>

Criminal Justice

Criminal Justice Public Safety Emphasis Bachelor of Science

General Education Requirements (25 credits)

Major Requirements (54 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ197	Physical Fitness for Public Safety	1
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
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**	4
HE191	Prehospital Emergency Care & Crisis Intervention II**	4
PS110	Intro. to American Government and Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology	3
SO103	Cultural Diversity	3
SO214	Criminology	3

Electives (16 credits)

*Repeated twice
**MCOLES courses

FS197 and FS220 are required if firefighter certification is desired.

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	First-Year Composition I	3	EN111	First-Year Composition II	3
FS101	Introduction to Fire Science	3		Natural Science Electives	4
	General Education Math	3	FS111	Hazardous Materials	3
		<u>15</u>			<u>17</u>
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
SD101	Fund. of Speech Communication Elective	3	HU251	Humanities	4
		<u>17</u>			<u>16</u>
Third Year					
	Humanities Elective	4	SO214	Criminology	3
	Natural Science Elective	4	CJ402	Criminal Justice Internship or	3
SO103	Cultural Diversity Electives	3	FS403	Fire Science Internship	4
		<u>14</u>	CJ345	Statistics & Design for Public Safety Electives	4
					<u>14</u>
Fourth Year					
CJ319	Substantive Criminal Law*	3	CJ321	Ethical Issues in Public Safety*	3
CJ197	Physical Fitness for Public Safety**	1	CJ313	Crisis Intervention and Deviant Behavior*	3
CJ401	Criminal Justice Senior Seminar or	3	CJ444	Criminalistics*	4
FS401	Fire Science Senior Seminar Electives	3	CJ197	Physical Fitness for Public Safety**	1
HE190	Pre-hospital Emergency Care and Crisis Intervention I	4	CJ409	Procedural Criminal Law*	3
		<u>14</u>	HE191	Prehospital Emergency Care and Crisis Intervention II	4
					<u>18</u>

*MCOLES course **MCOLES students only

Bachelor's Degrees

Early Childhood Education

See School of Education, page 251.

Bachelor of Arts

Bachelor of Science

Career Choices:

Pre-school Administrative position

Pre-school Teaching position

Program Description:

This four-year program leads to a bachelor of arts or bachelor of science degree in early childhood education. It is for students interested in working with young children from birth to age eight. Students are expected to acquire an understanding of the developmental pattern of the young 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.

A total of 124 credits is required.

Career Descriptions:

Graduates of this program normally seek administrative or teaching positions with day care centers (private, public, and military base centers), head start programs, and in non-certified public and private school programs, and other facilities designed for the care and development of young children.

Pre-school Administrative Position — acts as a center's director or assistant director.

Pre-school Teaching Position — acts as lead teacher, assistant teacher or Head Start teacher.

Student Profile:

Are you ...

interested in the care and development of children from birth to age 8?

Early Childhood Education

Early Childhood Education Bachelor of Science or Bachelor of Arts

Departmental Requirements

ED101	Foundations of Early Childhood Education	3
ED105	Child Guidance & Welfare	3
ED110	Curriculum Development and Teaching Practices	3
ED111	Infants & Toddlers: Developmentally Appropriate Practices	3
ED260	Practicum I	4
ED261	Practicum II	4
ED270	Administration of Early Childhood Programs	3
ED340	Practicum III-Field Experiences	4
ED420	Emergent Literacy	3
ED430	Directed Studies in Early Childhood Education	4

Support Courses

AT212	Art for Elementary Teachers	3
BL105	Function of the Human Body	4
HE104	Nutrition for Early Childhood	3
HE181	First Aid	1
MU235	Music for Elementary Teachers	3
PY155	Lifespan Development	3
	or	
PY265	Child & Adolescent Development	3
PY301	Exceptional Child & Adolescent	3
SO113	Sociology of the American Family	3

General Education Requirements

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD110	Fund. of Speech Communication	3
HU251	Humanities I	4
HU	Elective	3-4
NS	Elective	4
	Social Science	6-8
	Social Science Diversity	3-4
MA110	(or higher) Explorations in Mathematics	3
	or	
PL205	Logic	3

Approved Minor (20-24)

BA Requirement	- one year of foreign language	8
	or	
BS Requirement	- eight credits from natural science, social science or mathematics not used for general education	

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
BL105	Function of the Human Body	4	SO113	Sociology of the American Family	3
PY155	Lifespan Development	3	HE104	Nutrition for Early Childhood	3
	or		HE181	First Aid	1
PY265	Child & Adolescent Development	3	ED111	Infants & Toddlers: Developmentally Appropriate Practices	3
ED101	Foundation of Early Childhood Education	3	ED105	Child Guidance and Welfare	3
ED110	Curriculum Development and Teaching Practice	3			16
		16			
Second Year					
SD101	Fund. of Speech Communication	3	ED270	Administration of Early Childhood Programs	3
ED220	Early Childhood Literature	3		Electives	2
ED260	Practicum I	3	ED261	Practicum II	4
PY* or SO**	Elective	3		General Education Math	3
		16			15
			PY* or SO**		
Third Year					
AT212	Art for Classroom Teachers	3	MU235	Music for Elementary Teachers	3
SS	Social Science Elective	3	ED430	Directed Studies in Early Childhood Education	4
	Minor	6	MA110	(or higher) Explorations in Math	3
ED340	Practicum III Field Experience	4		or	
		16	PL205	Logic	4
			NS	Elective	4
				Minor	3
					17
Fourth Year					
HU251	Humanities I	4	HU	Elective	4
BA/BS	Degree Requirement	4	BA/BS	Degree Requirement	4
ED420	Emergent Literacy	4		Minor	6-9
	Minor	6			14-17
		18			

*Choose one of the following:

PY301 Exceptional Child & Adolescent or PY228 Organizational Behavior

**Choose one of the following:

SO225 Native Cultural of North America or SO103 Cultural Diversity

Bachelor's Degrees

Education — Elementary Teaching Secondary Teaching

See School of Education, page 251,
for a list of all teaching option degrees.

Bachelor of Science

Bachelor of Arts

Career Choices:

Elementary Teacher

Secondary Teacher

School Administrator

School Counselor

Educational Consultant or Trainer

Student Profile:

Do you ...

like working with children and adults from diverse backgrounds?

have self-confidence, flexibility, enthusiasm and intellectual curiosity?

have proficiency in spoken and written communication, reading, mathematics, science and liberal arts?

Program Description:

The program is highlighted by in-depth study in a subject major (or dual minors for some elementary candidates), extended teaching communities of diverse learners and scholarly inquiry. Students earn a bachelor's degree and then to become certified, participate in a one-year teaching internship with accompanying graduate course work.

While working toward completion of a major, students take the first two teacher education courses and then apply for formal admission to the program during their sophomore year.

Details of current teaching certificates, program requirements, policies and procedures are available via the University website.

You will find majors and minors which are acceptable as teaching options in the Minors section of this catalog.

Program Completer

The Michigan Department of Education identifies a "program completer" as one who has accomplished both (a) all institutional academic and other requirements such as to establish eligibility for recommendation for certification and (b) taken/passed the minimum number of state certification tests for the field of teaching desired.

Career Descriptions:

Elementary or Secondary Teacher — completion of fifth-year internship and graduate course work qualifies students for elementary or secondary teacher certification in Michigan and Ontario, as well as reciprocity with many other states in the U.S.

School Administrator or School Counselor — a valid teaching certificate and teaching experience are recommended prerequisites to becoming either a school administrator or counselor. Further course work and separate certification are also required.

Educational Consultant or Trainer — trains personnel in industry on new procedures and/or equipment as needed. Also develops curriculum for textbooks and/or special programs for educational institutions.

Education - Elementary Teaching

Education Elementary Teaching Bachelor of Arts Bachelor of Science

Elementary Teaching

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

- Language Arts
- Mathematics
- Natural Science
- Social Science

There are two options for completion of course work in these four areas. With each, teachers are certified to teach kindergarten through eighth grade, all subjects, in self-contained rooms. Also, they are permitted to teach their academic major and/or minor(s) in grades six through eight.

Option I: a bachelor of arts or a bachelor of science degree in a major area.

1. One academic major from the list below
2. All the courses in the three remaining sections of the planned program not related to the student's major
3. Child and Adolescent Development (PY 265) (TE 150 meets prerequisite)
4. Teacher educational professional component
5. General education requirements not met through the planned program
6. Prior to August of the internship year students must receive a passing score on the Michigan Test for Teacher Certification-Elementary Education. A copy of the test results must be filed with the School of Education before the internship begins.

Major: See requirements in this catalog for each teaching option major

- a. Biology
- b. Early Childhood Education
- c. English Language and Literature
- d. History
- e. Mathematics
- f. Psychology
- g. Sociology
- h. Social Studies
- i. Political Science

Option II: A bachelor of science degree in elementary education.

1. Two academic minors
2. Students take all of the courses in the remaining two or three of the following planned program areas not covered by their major or two minors.
 - a. Language Arts
 - b. Mathematics
 - c. Natural Science
 - d. Social Science
3. Child and Adolescent Psychology (PY 265) (TE 150 meets prerequisite)
4. Teacher education professional component
5. General education requirements not met through planned program
6. Prior to August of the internship year the Michigan Test for Teacher Certification Elementary Education Test and any subject area tests need to be satisfactorily completed. A copy of the test results must be filed with the School of Education before the internship begins.

Minors: See requirements in this catalog for each minor

- a. Anishinaabemowin/Ojibwe Language and Literature
- b. Communication
- c. Computer
- d. Early Childhood Education
- e. Economics

- f. English
- g. French Language and Literature
- h. Geography
- i. Group Science
- j. History
- k. Mathematics
- l. Political Science
- m. Psychology
- n. Social Studies
- o. Sociology
- p. Spanish Language and Literature

Planned Program for Elementary Teachers

Depending upon which option is selected, students take all of the courses in two or three of the following planned program areas not covered by their major or two minors.

Language Arts:

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
EN180	Introduction to Literary Studies	3
EN235	Survey of Native Literature of North America	
	<i>or</i>	3
EN236	Literature and Culture	
EN335	Children's Literature in the Classroom	3

Mathematics:

MA103	Number Systems & Problem Solving	4
MA104	Geometry & Measurement	4
	<i>and</i>	
MA110	Exploration in Mathematics	3
	<i>or</i>	
MA111	College Algebra and a statistics course from BA, MA, PY or SO	3 6-7

Natural Sciences:

NS110	Chemistry in Society	4
NS101	Conceptual Physics	4
BL107	Field Biology	3
NS102	Introduction to Geology	4

Social Science:

HS101	World Civilization I	
	<i>and</i>	8
HS102	World Civilization II	
	<i>or</i>	
HS131	United States History I	
	<i>and</i>	8
HS132	United States History II	
GG201	World Regional Geography	4
PS110	American Government	4
PS160	Canadian Government (Canadian Students)	3

All Students:

PY265	Child and Adolescent Psychology	3
CS101	Intro. to Microcomputer Applications (or its equivalent)	3
TE330	Reading in the Elementary Classroom	3

Education

Education

Secondary Teaching

Bachelor of Arts

Bachelor of Science

Secondary Teaching:

Secondary teachers are certified to teach in their academic major and minor(s) in grades 7 through 12. This program leads to a bachelor of arts or a bachelor of science degree in the student's major area.

Certifications available in the following teaching option majors: See requirements in this catalog.

- a. Biology
- b. Business Administration - Business Education
- c. Chemistry
- d. Computer Science
- e. English Language & Literature
- f. Environmental Science
- g. French Studies
- h. Geology
- i. History
- j. Mathematics
- k. Political Science
- l. Psychology (not Ontario)
- m. Social Studies (group)
- n. Sociology

Students can also complete any of the following teaching option minors and be certified to teach in these areas. See requirements in this catalog.

- a. Anishinaabemowin/Ojibwe Language and Literature
- b. Accounting (Business Education students only)
- c. Biology
- d. Chemistry
- e. Communications
- f. Computer Science
- e. Economics
- f. English
- g. Distributive Education (Business Education students only)
- h. Economics
- i. English

- j. French Language and Literature
- k. Geology/Earth Science
- l. History
- m. Mathematics
- n. Political Science
- o. Psychology (not Ontario)
- p. Secretarial Science (Business Education students only)
- q. Social Studies
- r. Sociology
- s. Spanish Language and Literature

General Programs for Secondary Teachers

1. One academic major from the above list (see individual school requirements)
2. One academic minor from above list (see individual school requirements)
3. Teacher education professional component
4. General education requirements not met through major and minor
5. Introduction to Microcomputer Applications (CS101) or its equivalent
6. Prior to August of the internship year, students must receive a passing score on the Michigan Test for Teacher Certification in their subject areas. A copy of the test results must be filed with the School of Education before the internship begins.

Electrical Engineering

See College of Engineering and Mathematics, page 268.

Program Description:

The electrical engineering program, which is accredited by ABET, combines topics from science, math and engineering in order to study and develop solutions to electrical and computer problems. The program contains a strong laboratory emphasis with plenty of opportunities to work on real electrical systems. Some of the program highlights are:

- The teaching emphasis is on preparing you to solve real-world problems.
- You have three choices for fulfillment of your senior year experience. You may pursue opportunities in cooperative education, industry-based projects or research projects.
- You will study assembly language, circuit design, microcontroller hardware and software, digital electronics, and networks.
- Engineering courses begin in your freshman year.
- The program provides an excellent mix of theory and practical laboratory experiences.

Your Degree Options — You may choose to follow one of the following degree options while studying electrical engineering at LSSU. They are *digital systems, robotics and automation, or electrical/mechanical*. The *digital systems* option will give you additional knowledge in digital design, digital signal processing and microcontroller systems. The *robotics and automation* option provides you with a strong background in robotics, machine vision, sensors, communications and automation. If you plan to pursue graduate study, then the broader *electrical/mechanical* option is designed for you.

Career Description:

Once you graduate from LSSU, you will have many electrical engineering career choices. Typical graduates have obtained engineering positions in electrical systems design, microcontroller systems design, robotics, automation, product or process development, research and development, applications, maintenance, or sales.

Cooperative Education:

Opportunities are available as part of this program for students who are qualified. A certificate that documents this practical training is available.

Bachelor of Science

Options in:

Digital Systems

Robotics and Automation

Electrical/Mechanical

Career Choices:

Design Engineer
Robotics Engineer
Systems Engineer
Project Engineer
Software Engineer
Manufacturing Engineer
Sales Engineering
Applications Engineer
Controls Engineer

Bachelor's Degrees

Student Profile:

Do you ...

like problem solving?

like applying theories in laboratories?

like working with electrical systems?

Electrical Engineering

Electrical Engineering Bachelor of Science

Departmental Requirements (103 Credits)

Mathematics

EG345	Probability and Mathematical Statistics	3
MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA243	Calculus and Linear Algebra for Engineering	4
MA310	Differential Equations	3

Sciences

CH115	General Chemistry I	5
PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Engineering

EE105	Fabrication Fundamentals	1
EE125	Digital Fundamentals	4
EE210	Circuits and Machines	4
EE250	Microcontroller Fundamentals	4
EE310	Network Analysis I	5
EE315	Network Analysis II	3
EE330	Electro-Mechanical Systems	4
EE345	Fundamentals of Engineering Electromagnetics	3
EE370	Electronic Devices	4
EE375	Electronic Circuits	4
EG101	Introduction to Engineering	2
EG140	Numerical Applications for Engineers	1
EG265	"C" Programming	3
EG340	Advanced Numerical Applications for Engineers	1
EG346	Probability and Statistics Lab for Engineers	1
EG491	Engineering Design Project I	3
EG495	Engineering Design Project II	3
EM220	Statics	3
RS460	Control Systems	4

Focused Engineering Elective (select one of the following):

EE441	Applied Engineering Electromagnetics	4
EE470	Applications of Analog Integrated Circuits	4
RS461	Design of Control Systems	4

General Education Requirements (25 Credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
SD101	Fund. of Speech Communication	3
	Social Science Diversity Elective	3
	Humanities Elective	3
	Social Science Electives	6

Total Credits: 128

FALL		SPRING			
First Year					
CH115	General Chemistry	5	EE105	Fabrication Fundamentals	1
EG101	Introduction to Engineering	2	EE125	Digital Fundamentals	4
EN110	First-Year Composition I	3	EG140	Numerical Applications for Engineers	1
MA143	Calculus for Engineering I	4	EN111	First-Year Composition II	3
	Social Science Elective	3	MA144	Calculus for Engineering II	4
		17	SD101	Fund. of Speech Communication	3
					16
Second Year					
EE210	Circuits and Machines	4	EG265	"C" Programming	3
EE250	Microcontroller Fundamentals	4	EG345	Probability & Mathematical Statistics	3
MA243	Calculus and Linear Algebra for Engineering	4	EG346	Probability and Statistics Lab for Engineers	1
PH231	Applied Physics for Engineers and Scientists I	4	EM220	Statics	3
		16	PH232	Applied Physics for Engineers and Scientists II	4
					17
Third Year					
EE310	Network Analysis	5		Social Science Diversity Elective	3
EE330	Electro-Mechanical Systems	4	EE315	Network Analysis II	3
EE370	Electronic Devices	4	EE345	Fundamentals of Engineering Electromagnetics	3
EG340	Advanced Numerical Applications for Engineers	1	EE375	Electronic Circuits	4
MA310	Differential Equations	3		Engineering Option Elective	4
		17			17
Fourth Year					
EG491	Engineering Design Project I	3	EG495	Engineering Design Project II	3
	Engineering Option Elective	4		Engineering Option Elective	3
	Focused Engineering Elective	4	HU251	Humanities I	4
RS460	Control Systems	4		Social Science Elective	3
		15			13

Select one of the three options listed below to complete the electrical engineering degree:

Digital Systems Option

EE355	Microcontroller Systems	4
EE420	Digital Design	4
EE425	Digital Signal Processing	3

Robotics and Automation Option

RS385	Robotics Engineering	3
RS430	Systems Integration & Machine Vision	4
RS435	Automated Manufacturing Systems	4

Electrical/Mechanical Option

EM225	Strength of Materials	3
EM320	Dynamics (required)	4
ME355	Thermal and Fluids Engineering I	5

Engineering Management

See College of Engineering
and Mathematics, page 268.

Program Description:

The Engineering Management program is designed for students who already have a technical associate's degree to complete a management-oriented bachelor's degree in two additional years. The program will expand your technical education in robotics and automation. It will also provide you with valuable business skills that could qualify you for advancement in industry.

Technical associate's degree transfer credits are accepted for a wide range of technical programs. Technical courses provide a focus in modern robotics and automated manufacturing methods.

Program Focus — Engineering management combines technical and business classes. Typical business classes include accounting, finance and management. The technical classes have a manufacturing flavor. Typical technical classes include calculus, robotics technology, advanced quality methods, programmable logic controllers and automated manufacturing systems.

Career Description:

Once you graduate from LSSU, you will be prepared for many middle- to upper-management positions within your technical field.

Bachelor of Science

130-Hour Program

Career Choices:

Engineering Supervisor
Operations Manager
Production Manager

Bachelor's Degrees

Engineering Management

Engineering Management Bachelor of Science

Required Courses

School of Business & Economics (28-29 Credits)

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
AC332	Cost Accounting	4
BA	Elective**	3
EC302	Managerial Economics	4
FN245	Principles of Finance	3
	<i>or</i>	
FN341	Managerial Finance	4
MN360	Principles of Management	3
MN471	Production Management	3

School of Engineering and Technology (24-25 Credits)

EG310	Advanced Quality Engineering	3
MA143	Calculus for Engineering I	4
MA207	Principles of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1
MT225	Statics & Strength of Materials	3
	<i>or</i>	
ET110	Applied Electricity	4
RS365	Programmable Logic Controllers (on campus)	3
	<i>or</i>	
RS366	Programmable Logic Controllers (off campus)	3
RS280	Robotics Technology	2
RS282	Intro. to Robotics Programming	1
RS480	Control Systems and Automation	3
RS482	Automation and Simulation Lab	1
	Technical Elective*	4

General Education* (14 Credits)

	Humanities	7-8
	Natural Science Elective	4
BA308	Managing Cultural Differences	3

Students must satisfy all University general education requirements.

*Elective must be approved by the chair.

**BA Elective (choose from):

AC333	Cost Accounting I	4
BA403	Business, Government & Society	3
MK387	Advertising Theory & Practice	3
MN451	Labor Law	4
MN461	Management Simulation	3
MN464	Organizational Behavior	3
MN469	Collective Bargaining	3

FALL		SPRING		
Third Year				
AC132	Principles of Accounting I	4	AC133 Principles of Accounting II	4
RS280	Robotics Technology	2	MT225 Statics & Strength of Materials	3-4
RS282	Intro. to Robotics Programming	1	<i>or</i>	
MN360	Principles of Management	3	ET110 Applied Electricity	3
MA143	Calculus for Engineering I	4	BA Elective	3
	Humanities Elective	3-4	MA207 Principles of Statistical Methods	3
		18-19	Technical Elective	4
				17-18
Fourth Year				
AC332	Cost Accounting	4	BA308 Managing Cultural Differences	3
EG310	Advanced Quality Engineering	4	RS365 Programmable Logic Controllers	3
FN245	Principles of Finance	3-4	<i>or</i>	
	<i>or</i>		RS366 Programmable Logic Controllers	4
FN341	Managerial Finance	3-4	EC302 Managerial Economics	4
RS480	Control Systems and Automation	3	MN471 Production Management	3
RS482	Automation and Simulation Lab	1	HU251 Humanities I	4
MA208	Statistics Applications for Quality Control	1		17
		16-17		

Bachelor's Degrees

English Language and Literature

See College of Arts, Letters
and Social Sciences, page 246.

Program Description:

Featuring small classes, lots of reading, many opportunities for writing and research, and supervision by faculty who know their students, the English programs emphasize the humane letters and language study.

Every year, the English Department holds the Osborn Poetry Contest and the Fiction Short Story Contest. Submissions are due at the beginning of February, with the winners announced in March.

Career Descriptions:

A sound liberal arts education is a satisfactory and sought-after preparation for many vocational and professional areas: communication, industry, government and teaching.

Editor — develops original fiction and nonfiction for books, magazines and trade journals, newspapers, technical reports, company newsletters, radio and television broadcasts, movies and advertisements.

Technical Writer — puts scientific and technical information into readily understandable language. Prepares operating and maintenance manuals, catalogs, parts lists, assembly instructions, sales promotion materials and project proposals. Plans and edits technical reports and oversees preparation of illustrations, photographs, diagrams and charts.

Public Relations Director — handles media, community, consumer and government relations; political campaigns; interest-group representation; conflict mediation; or employee and investor relations.

Elementary or Secondary Teacher — teaches subject matter relevant to the English language and literature to diverse learners, grades K-12.

Bachelor of Arts

**Elementary Teaching
Certification, BA**

**Secondary Teaching
Certification, BA**

Career Choices:

Editor

Technical Writer

Public Relations Director

Elementary or Secondary Teacher

Graduate Study

Student Profile:

Do you ...

like language with all its richness
and nuances?

often help others with interpreting
a passage or writing a paragraph?

enjoy a rich, imaginative sense?

like writing and reading?

Bachelor's Degrees

English Language and Literature

English Language and Literature Bachelor of Arts

Requirements: Students must complete, in addition to the general education requirements, two years of foreign language, the courses specified below (or their equivalents) plus sufficient additional hours of free electives to make up a required total of 124 hours. Majors in English must complete one minor in an area to be approved by the chair of the department.

Required Courses:

EN180	Introduction to Literary Studies	3
EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3
EN310	Advanced Writing	3
EN420	History of the English Language	3
EN421	History of Literary Criticism	3
EN490	Senior Thesis	3
	Second-Year Foreign Language	8

One course must be selected from:

EN235	Survey of Native Literature of North America	3
EN236	Literature and Culture	3
EN340	Genre Studies	3
HU255	World Mythology	4
HU256	Introduction to Film: Images of our Culture	3
HU261	World Literature I	3
HU262	World Literature II	3
SD309	Speech and Drama Productions	3
SD333	Studies in the Drama: the Genre and Theater in Context	3

One course must be selected from:

EN401	Medieval Literature	3
EN402	Renaissance Literature	3
EN403	Restoration Literature	3

One course must be selected from:

EN405	Romantic Literature	3
EN406	Nineteenth Century Literature	3
EN407	Twentieth Century Literature	3

One additional course must be selected from

EN401, 402, 403, 405, 406, 407

One course must be selected from:

EN221	Creative Writing	3
EN222	Basic Grammar	3
EN306	Technical Writing	3
EN320	Responding to Writing	3
EN410	The Children's Literary Tradition	3
EN433	Topics in Literature and Composition	3
EN450	Directed Independent Study	3
SD307	Classical/Contemporary Rhetoric	3

Bachelor's Degrees

FALL			SPRING		
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
	First-Year Foreign Language	4	EN180	Intro. to Literary Studies	3
	General Education	3	SD101	Fund. of Speech Communication	3
	General Education or Minor	3-4		First-Year Foreign Language	4
	General Education or Minor	<u>3-4</u>		General Education or Minor	<u>3-4</u>
		16-17			16-17
Second Year					
EN231	American Literature I	3	EN232	American Literature II	3
EN233	English Literature I	3	EN234	English Literature II	3
	Second-Year Foreign Language	4		Second-Year Foreign Language	4
	General Education or Minor	3		General Education or Minor	3
	General Education or Minor	<u>3</u>		General Education or Minor	<u>3-4</u>
		16			16-17
Third Year					
EN	Genre/Diversity		EN	Genre/Diversity	
	or	3		or	3
	Elective			Elective	
EN421	History of Literary Criticism		EN310	Advanced Writing	3
	or	3	EN420	History of the English Language	
EN	Period			or	3
	General Education or Minor	3-4	EN	Period	
	General Education or Minor	3-4		General Education or Minor	3-4
	General Education or Minor	<u>3-4</u>		General Education or Minor	<u>3-4</u>
		15-17			15-17
Fourth Year					
EN490	Senior Thesis	3	EN	Period	3
EN	Period		EN420	History of the English Language	
	or	3		or	3
EN421	History of Literary Criticism		EN	Period	
	General Education or Minor	3-4		General Education or Minor	3-4
	General Education or Minor	3-4		General Education or Minor	3-4
	General Education or Minor	<u>3-4</u>		General Education or Minor	<u>3-4</u>
		15-17			15-17

English Language and Literature

English Language and Literature — Elementary Teaching Certification Bachelor of Arts

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

1. The courses specified below or their equivalents;
2. The planned program for elementary teachers, excluding the English section; and
3. 25 credits in teacher education courses TE150, 250, 301, 330, 410, 411, 420, 421 and 422.

Students earn a bachelor's degree, and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

Required Courses

EN180	Introduction to Literary Studies	3
EN221	Creative Writing	3
EN222	English Grammar	3
EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3
EN310	Advanced Writing	3
EN335	Children's Literature in the Classroom	3
EN410	The Children's Literary Tradition	3
EN421	History of Literary Criticism	3
EN490	Senior Thesis	3
	Second-Year Foreign Language	8

One course must be selected from:

EN235	Survey of Native Literature of North America	3
EN236	Literature and Culture	3
EN340	Genre Studies	3
HU255	World Mythology	4
HU256	Introduction to Film: Images of our Culture	3
HU261	World Literature I	3
HU262	World Literature II	3
SD309	Speech and Drama Productions	3
SD333	Studies in the Drama: the Genre and Theater in Context	3

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	EN111 First-Year Composition II	3
	First-Year Foreign Language	4	EN180 Introduction to Literary Studies	3
SD101	Fund. of Speech Communication	3		4
TE150	Reflections on Learning & Teaching	3	CS101 Intro. to Microcomputer Appl.	3
	Planned Program - Science	4	Planned Program - Math	3-4
		17		16-17
Second Year				
EN231	American Literature I	3	EN232 American Literature I	3
EN233	English Literature I	3	EN234 English Literature II	3
TE250	Student Diversity and Schools	3	TE330 Reading in the Elementary Classroom	3
	Second-Year Foreign Language	4	Second-Year Foreign Language	4
	Planned Program - Social Science	4	Planned Program - Social Science	4
		17		17
Summer				
HU251	Humanities I	4		
Third Year				
EN221	Creative Writing	3	EN310 Advanced Writing	3
EN335	Children's Literature in the Classroom	3	EN222 English Grammar	3
TE301	Students and the Contexts of Learning	4	Planned Program - Math	3-4
	Planned Program - Math	3-4	PY265 Child and Adolescent Development	3
	Planned Program - Science	4	GG201 World Regional Geography	4
		17-18		16-17
Summer				
	Planned Program - Science	4	Planned Program - Social Science	4
Fourth Year				
EN490	Senior Thesis	3	EN410 Children's Literature in the Classroom	3
EN421	History of Literary Criticism	3	EN Genre/Diversity	3
TE410	Corrective Reading in the Classroom	3	TE420 Math Methods for Elementary Teachers	2
TE411	Elementary Language Arts and Methods Across the Curriculum	3	TE421 Science Methods for Elementary Teachers	2
	Planned Program - Science	4	TE422 Social Studies Methods for Elementary Teachers	2
		16	Humanities General Education	4
				16
Graduate with bachelor's degree				
Fifth Year				
TE491	Internship in Teaching Diverse Learners I	6	TE492 Internship in Teaching Diverse Learners II	6
TE601	Professional Roles & Teaching Practice I	3	TE603 Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604 Reflection and Inquiry in Teaching Practice II	3
		12		12

Bachelor's Degrees

English Language and Literature

English Language and Literature — Secondary Teaching Certification Bachelor of Arts

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

1. The courses specified below or their equivalents;
2. A minor approved for teacher certification; and
3. 22 credits in teacher education courses TE150, 250, 301, 430, 431, 440 and 441.

Students earn a bachelor's degree and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

Required Courses

EN180	Introduction to Literary Studies	3
EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	1
EN234	English Literature II	3
EN310	Advanced Writing	3
EN320	Responding to Writing	3
EN410	The Children's Literary Tradition	3
EN420	History of the English Language	3
EN421	History of Literary Criticism	3
EN490	Senior Thesis	3
	Second-Year Foreign Language	8

One course must be selected from:

EN235	Survey of Native Literature of North America	3
EN236	Literature and Culture	3
EN340	Genre Studies	3
HU255	World Mythology	4
HU256	Introduction to Film: Images of our Culture	3
HU261	World Literature I	3
HU262	World Literature II	3
SD309	Speech and Drama Productions	3
SD333	Studies in the Drama: the Genre and Theater in Context	3

One course must be selected from:

EN401	Medieval Literature	3
EN402	Renaissance Literature	3
EN403	Restoration Literature	3

One course must be selected from:

EN405	Romantic Literature	3
EN406	Nineteenth Century Literature	3
EN407	Twentieth Century Literature	3

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111 First-Year Composition II	3	
	First-Year Foreign Language	4	EN180 Introduction to Literary Studies	3	
TE150	Reflections on Learning	3	SD101 Fund. of Speech Communication	3	
	or		First-Year Foreign Language	4	
	General Education		TE150 Reflections on Learning*	3	
	General Education or Minor	3	or		
	General Education or Minor	<u>3-4</u>	General Education	<u>16</u>	
		16-17			
Second Year					
EN231	American Literature I	3	EN232 American Literature II	3	
EN233	English Literature I	3	EN234 English Literature II	3	
	Second-Year Foreign Language	4	Second-Year Foreign Language	4	
TE250	Student Diversity and Schools	3	TE250 Student Diversity and Schools*	3	
	or		or		
	General Education or Minor	3	General Education or Minor	<u>3-4</u>	
	General Education or Minor	<u>3</u>	General Education or Minor	<u>16-17</u>	
		16			
Third Year					
EN	Period	3	EN	Genre/Diversity	3
EN320	Responding to Writing	3	or		
EN	Genre/Diversity	3	General Education		
	or		EN310 Advanced Writing	3	
	General Education or Minor	3-4	EN410 The Children's Literary Tradition	3	
	General Education or Minor	<u>3-4</u>	or		
		15-17	EN	Period	
			TE301	Students and the Contexts of Learning	3-4
				General Education or Minor	<u>3-4</u>
					15-17
Fourth Year					
EN490	Senior Seminar	3	EN410	The Children's Literary Tradition	3
EN421	History of Literary Criticism	3	or		
TE430	General Methods for Secondary Teachers	3	EN	Period	
	or		EN420	History of the English Language	3
	General Education or Minor	3	TE431	The Secondary Learner	3
	General Education or Minor	<u>3-4</u>	TE441	Content Area Methods for Secondary Teachers	3
		15-16		General Education or Minor	<u>3</u>
					15
Graduate with bachelor's degree					
Fifth Year					
TE491	Internship in Teaching Diverse Learners I	6	TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles & Teaching Practice I	3	TE603	Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	<u>3</u>	TE604	Reflection and Inquiry in Teaching Practice II	<u>3</u>
		12			12

Environmental Chemistry

See College of Natural
and Health Sciences, page 281.

Program Description:

Environmental chemists seek to understand and address environmental problems within the context of chemical systems. While environmental chemistry is truly an interdisciplinary field, the particular emphasis on examining natural systems through chemistry and chemical analysis focuses the graduate more firmly within the physical sciences. Key features of this program include course work on environmental impact assessment, air and water chemistry. By seeking solutions for such chemically based environmental problems as water pollution, hazardous wastes, and acid rain, environmental chemists help ensure a safe, healthful environment for all living things.

Career Descriptions:

Environmental Chemist — collects and analyzes samples; develops remediation programs, changing production processes to reduce environmental impact; advises on safety and emergency response.

Environmental Field Technician — responsible for groundwater sampling, soil sampling and other field efforts.

Field Chemist — supervises field technicians; packages chemicals for transportation and disposal; loads and unloads supply trucks. Customer relation skills are essential.

Physical Science Technician — performs technical procedures related to chemical analyses of plant and animal tissues, soils, sediments and waters for environmental contaminants, including sample receipt, storage, homogenization, extraction, cleanup, digestion analysis, and reporting.

Physical or Biological Scientist (Research) — assists policy development/coordination with other bureaus/government agencies; coordinates research activities and development of solutions to extremely complex, obscure and critical problems.

Laboratory Chemist — has knowledge of EPA methods for volatile, semi-volatile analysis and metals; instrument proficiency, with instrument troubleshooting a plus; good organizational skills, attention to detail, and a will to succeed.

Bachelor of Science

Environmental Chemistry

Career Choices:

Environmental Chemist
Environmental Field Technician
Field Chemist
Environmental Specialist
Physical Science Technician
Physical or Biological Scientist
Pollution Control Specialist
Laboratory Chemist

Student Profile:

Do you have an ...

interest in the environment and environmental protection?

aptitude in natural sciences, particularly chemistry and mathematics?

skills in planning, organization and problem solving?

ability to communicate effectively in writing?

ability to effectively organize and present information verbally?

ability to communicate and work with a broad array of people?

Bachelor's Degrees

Environmental Chemistry

Environmental Chemistry Bachelor of Science

Degree Requirements

Biology (15 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL337	General Ecology	3

Chemistry (44 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
CH341	Environmental Chemistry I: Water and Water Pollution Control	4
CH342	Environmental Chemistry II: Air and Solid Wastes	4
CH451	Introductory Biochemistry	4
CH453	Introductory Toxicology	3
CH361	Physical Chemistry	4

Environmental Science (15 credits)

EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
EV395	Junior Seminar	1
EV425	Environmental Systems Analysis	3
EV499	Senior Thesis	2
NS103	Environmental Science	3

Other Departments (25-27 credits)

BA211	Business Statistics	3
MA151	Calculus I	4
MA152	Calculus II	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4
	Directed Elective	3-4
	Directed Elective	3-4

Directed Electives (Included above)

BL230	Introduction to Soils	4
BL345	Limnology	3
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
EV128	Geographic Information Systems	1
EV226	Geospatial Analysis I	1
EV227	Geospatial Analysis II	1
EV285	Epidemiology	3
EV325	Geospatial Analysis III	3
EV490	Independent Study in Environmental Science	3-4
FS312	Hazardous Material Management	4
GE121	Physical and Historical Geology I	4
GE122	Physical and Historical Geology II	4
GE311	Principles of Hydrology	3
GE312	Groundwater Hydrology	3
ID399	Internship in Environmental Chemistry	3-4

Students are required to satisfy general education requirements (natural science requirements are met by above classes) and free electives so that 124 semester credits are earned.

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
MA151	Calculus I	4	CH116	General Chemistry II	4
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
		<u>16</u>	MA152	Calculus II	4
					<u>15</u>
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
CH231	Quantitative Analysis	4	CH332	Instrumental Analysis	4
NS103	Environmental Science	3	SD101	Fund. of Speech Communication	3
		<u>15</u>			<u>15</u>
Third Year					
BA211	Business Statistics	3	EV425	Environmental Systems Analysis	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4	EV395	Junior Seminar	1
	Directed Elective	3	HU251	Humanities	4
	Social Science Elective	3	EV313	Solid & Hazardous Waste*	3
BL204	General Microbiology	4		Social Science Elective	3
		<u>17</u>			<u>14</u>
Fourth Year					
BL337	General Ecology	3	EV499	Senior Thesis	2
CH451	Introductory Biochemistry	4	CH453	Introduction to Toxicology	3
CH342	Environmental Chemistry II: Air and Solid Wastes	4	EV311	Environmental Law	3
CH361	Physical Chemistry	4		Humanities Elective	3
	Soc. Sci. Diversity Elective	3		Directed Elective	4
		<u>18</u>			<u>15</u>

*Offered in alternate years.

Environmental Health

See College of Natural
and Health Sciences, page 281.

Program Description:

The B.S. in environmental health is offered in response to strong student, state and local government demand for an academic program to prepare students for careers in public health, environmental health and related fields. Graduates of this program will be prepared to seek employment in jobs with titles like public health officer, environmental technician, and scientist, as well as many others. After working in the field for a period of time, graduates may sit for the Registered Sanitarian (RS) examination and achieve state certification, or for the Registered Environmental Health Specialist (REHS) examination and achieve national certification.

This program is similar to the successful environmental science degree, but includes many required elements that are specifically directed to public health. These include courses in Geographic Information Systems and Global Positioning Systems, Hydrology and Groundwater, Toxicology and Epidemiology, Public Health Care and Public Administration. Students participate in an applied research project in close collaboration with faculty members to address meaningful environmental health problems. These projects, through the excellent preparation they provide our students, are often cited as important factors in successful job searches and entry into graduate programs.

Career Descriptions:

Public Health Officer — works with local public health offices to protect citizens and the environment; develops and implements public health initiatives and enforces existing environmental regulations.

Environmental Technician — responsible for groundwater sampling, soil sampling and other field-based efforts; develops reports.

Registered Sanitarian — through experience and expertise, you can sit for professional certification, which provides enhanced employment and advancement opportunities for individuals working within public health venues.

Environmental Scientist — develops schedules and budgets; plans and implements activities including field work, documentation, data analysis, public involvement and environmental analysis.

Bachelor of Science

Career Choices:

Public Health Officer
Environmental Technician
Registered Sanitarian
Environmental Scientist

Student Profile:

Do you ...

- have an interest and concern for the environment?
- want to work to protect the environment and people?
- enjoy working outdoors and with others?
- have strong writing, listening and speaking skills?

Environmental Health

Environmental Health Bachelor of Science

Bachelor's Degrees

Degree Requirements (92 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL230	Soils	4
BL280	Biometrics	3
BL422	Parasitology	3
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH341	Environmental Chemistry: Water	4
CH451	Intro. to Biochemistry	4
CH453	Intro. to Toxicology	3
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
EV128	Geographic Information Systems	1
EV226	Geospatial Analysis I	1
EV227	Geospatial Analysis II	1
EV285	Princ. of Epidemiology	3
EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
EV395	Junior Seminar	1
EV499	Senior Thesis	2
GE311	Princ. of Hydrology	3
GE312	Groundwater Hydrology	3
HE210	Intro. to Health Care Concepts	3
HE328	Multicultural Approach to Health Care	3
ID399	Internship in Environmental Health	4
PH221	Elements of Physics I	4

Other Departments (11 credits)

MA140	Precalculus Mathematics	5
BA211	Business Statistics	3
PS201	Intro. to Public Administration	3

Other General Education (25 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
	Approved Social Science*	3
	Approved Social Science*	3
	Social Science Diversity*	3
HU251	Humanities I	4
	Approved Humanities*	3
SD101	Fund. of Speech Communication	3

*Consult list for approved courses

A minimum of 124 credits must be earned for graduation.

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
BL109	General Biology	4	BL110	General Zoology	2
EV125	Geospatial Basics	1	BL111	General Botany	2
EV126	Air Photo Interpretation	1	EN111	First-Year Composition II	3
PS201	Intro. to Public Administration	3	EV127	Global Positioning Systems	1
EN110	First-Year Composition I	3	EV128	Geographic Information Systems	1
		<u>17</u>	MA140	Precalculus Mathematics	5
					<u>18</u>
Second Year					
CH225	Organic Chemistry	4		Approved Social Science	3
CH231	Quantitative Analysis	4	CH226	Organic Chemistry II	4
EV226	Geospatial Analysis I	1	SD101	Fund. of Speech Communication	3
EV227	Geospatial Analysis II	1	BA211	Business Statistics	3
PH221	Elements of Physics I	4		Approved Humanities	3
BL204	General Microbiology	4			<u>16</u>
		<u>18</u>			
Third Year					
HE328	Multicultural Approach to Health Care	3	CH453	Introduction to Toxicology	3
CH451	Introduction to Biochemistry	4	EV395	Junior Seminar	1
BL422	Parasitology	3	EV311	Environmental Law	3
HU251	Humanities I	4		Electives	4
EV285	Principles of Epidemiology	3	BL280	Biometrics	3
		<u>17</u>			<u>14</u>
Summer					
ID399	Internship in Environmental Health	4			
Fourth Year					
BL230	Soils	4	EV313	Solid and Hazardous Waste	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4	EV499	Senior Thesis	2
HE210	Intro. to Health Care Concepts	3		Approved Social Science	3
GE311	Principles of Hydrology	3	GE312	Groundwater Hydrology	3
		<u>14</u>			<u>11</u>

Environmental Science

See College of Natural and Health Sciences, page 281.

Program Description:

Environmental science is the study of human interaction with the environment. By seeking solutions for such environmental problems as water pollution, hazardous wastes and acid rain, environmental scientists help ensure a safe, healthful environment for all living things.

The secondary teaching major, environmental science/secondary education, combines an interdisciplinary preparation in the natural sciences and a strong concern and background in environmental issues and solutions, with a student's interest in a career as a secondary teacher at the junior or senior high level. Students complete the requirements for an interdisciplinary group science major, leading to teacher certification which enables the student to teach multiple science subjects to grades 7-12. Contact the Teacher Education Department for additional information.

Career Descriptions:

Biological Science Technician — surveys, maps, and documents a variety of environmental factors including wildlife/fishery population assessment, aquatic and terrestrial habitat condition.

Physical Science Technician — performs the chemical analyses of plant and animal tissues, soils, sediments, and waters for environmental contaminants, including sample receipt, storage, homogenization, extraction, cleanup and digestion analysis.

Physical or Biological Scientist (Research) — coordinates necessary research activities and the development of solutions to extremely complex, obscure and critical problems.

Natural Resource Specialist — develops, schedules, budgets and implements planning activities including field work, document preparation, data analysis, public involvement and appropriate public legal notices.

Laboratory Chemist — has knowledge of EPA methods for volatile and semi-volatile analysis. A.A.S. (Flame/Graphite a plus) and/or I.C.P., instrument maintenance.

Environmental Field Technician— responsible for groundwater sampling, soil sampling, and other field efforts.

Field Chemist — supervises field technicians; packages chemicals for transportation and disposal, loads and unloads supply trucks; customer relation skills are essential.

Science Teacher — responsible for developing and implementing science curriculum in grades 7-12; daily classroom operations; develops professional relationships with students, parents, district faculty and staff.

Bachelor of Science Environmental Science Secondary Teaching Degree

Career Choices:

Biological Science Technician
Physical Science Technician
Physical or Biological Scientist
Natural Resource Specialist
Pollution Control Specialist
Laboratory Chemist
Environmental Field Technician
Environmental Specialist
Junior/Senior High Science Teacher

Student Profile:

Do you have an ...

interest in the environment and environmental protection?

aptitude in natural sciences?

skills in planning, organization and problem solving?

ability to communicate effectively in writing?

ability to effectively organize and present information verbally?

ability to communicate and work with a broad array of people?

interest in a career as teacher and mentor to students grades 7-12?

Bachelor's Degrees

Environmental Science

Environmental Science Bachelor of Science

Total Credits (125 credits)

Biology (19 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL230	Introduction to Soils	4
BL337	General Ecology	3
BL204	General Microbiology	4

Chemistry (25 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4

Environmental Science (23 credits)

NS103	Environmental Science	3
EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
EV341	Environmental Chemistry I: Water	4
CH342	Environmental Chemistry II: Air	4
EV395	Junior Seminar	1
EV499	Senior Thesis	2
EV425	Environmental Systems Analysis	3

Other Departments (27 credits)

MA140	Precalculus Mathematics	5
MA112	Calculus for Business and Life Sciences	4
or		
MA143	Calculus for Engineering I	4
or		
MA151	Calculus I	4
BA211	Business Statistics	3
PH221	Elements of Physics I*	4
PH222	Elements of Physics II*	4
GE311	Hydrology	3
GE121	Physical & Historical Geology I	4

Directed Electives (select one of the following - minimum three credits)

CH353	Intro. to Toxicology	3
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
EV128	Geographic Information Systems	1
EV226	Geospatial Analysis I	1
EV227	Geospatial Analysis II	1
EV285	Epidemiology	3
EV325	Geospatial Analysis III	3
EV490	Independent Study: Environ. Sci.	3-4
FS312	Hazardous Materials Management	4
GE112	Physical Geology II	4
ID399	Intern. in Environmental Science	3-4

Other General Electives (25-28 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
	Approved Social Science	6-8
HU251	Humanities I	4
	Approved Humanities	3
SD101	Fund. of Speech Communication	3
	Approved Soc. Sci. Diversity	3-4

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
MA140	Precalculus Mathematics	5	CH116	General Chemistry II	4
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
		<u>17</u>	MA143	Calculus for Engineering I**	4
					<u>15</u>
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4	CH332	Instrumental Analysis	4
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
	Social Science Elective	3	BA211	Business Statistics	3
NS103	Environmental Science	3	SD101	Fund. of Speech Communication	3
		<u>18</u>			<u>18</u>
Third Year					
GE121	Physical & Historical Geology I	4	EV395	Junior Seminar	1
EV341	Environmental Chemistry I: Water and Water Pollution Control	4	HU251	Humanities	4
	Soc. Sci. Diversity	3	EV313	Solid and Hazardous Waste*	3
BL204	General Microbiology	4		Social Science Elective	4
		<u>15</u>			<u>12</u>
Fourth Year					
GE311	Hydrology	3	EV499	Senior Thesis	2
BL230	Introduction to Soil Science	4	EV425	Environmental Systems Analysis	3
BL337	General Ecology	3		Humanities Elective	4
	Directed Elective	3	EV311	Environmental Law*	3
CH342	Environmental Chemistry II: Air & Solid Wastes	4			<u>12</u>
		<u>17</u>			

*Offered in alternate years.

**Students may substitute MA151 or MA112.

**Students with adequate preparation in mathematics are advised to take MA151-152 in place of MA140-143 and PH231-232 in place of PH221-222. See advisor for details. Additionally, a student is required to satisfy general education requirements (natural science requirements are met by above classes) and free electives so that 124 semester credits are earned.*

Environmental Science

Environmental Science Secondary Teaching Degree

Total Credits Required (124-127 credits)

A. Integrated Science Option

Endorsement: DI, DA, DC, DH (74 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL337	General Ecology	3
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH220	Survey of Organic Chemistry	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
CH361	Physical Chemistry I	4
EV395	Junior Seminar	1
EV499	Senior Seminar	2
NS103	Intro. to Environmental Science	3
PH231	Elements of Physics I	4
PH232	Elements of Physics II	4
NS116	Oceanography	4
NS119	Astronomy	4
GE121	Physical and Historical Geology I	4
GE122	Physical and Historical Geology II	4
GG108	Physical Geography: Meteorology and Climatology	4
Other (11 credits)		
MA143	Calculus for Engineering I or	4
MA151	Calculus I	4
MA144	Calculus for Engineering II or	4
MA152	Calculus II	3
BA211	Business Statistics	3

B. Environmental Science Option

Endorsements: DL, DA, DH (67 credits)

BL105	Function of Human Body	4
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	Introduction to Microbiology	4
BL220	Genetics	4
BL240	Natural History of the Vertebrates	3
BL337	General Ecology	3
CH115	General Chemistry I	4
CH116	General Chemistry II	4
EV395	Junior Seminar	1
EV499	Senior Seminar	2
GE121	Physical and Historical Geology I	4
GE122	Physical and Historical Geology II	4
GE218	Structural Geology Tectonics	5
GE223	Mineralogy and Petrology	5
GG108	Physical Geography: Meteorology and Climatology	4
NS116	Oceanography	4
NS119	Astronomy	4
Other (12 credits)		
BA211	Business Statistics	3
MA140	Precalculus Mathematics	5
MA112	Calculus for Business and Life Sci. or	4
MA144	Calculus for Engineering II or	4
MA152	Calculus II	4

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
MA140	Precalculus Mathematics	5	MA143	Calculus for Engineering I or	4
MA143	Calculus for Engineering or	4	MA112	Calc. for Business & Life Sciences or	4
MA151	Calculus I (as specified)	4	MA144	Calc for Engineering II (as specified)	4
EN110	First-Year Composition I	3	CH116	General Chemistry II	4
		<u>17</u>	EN111	First-Year Composition II	3
					<u>15</u>
Second Year					
TE150	Reflections on Learning and Teaching	3	CH226	Organic Chemistry II	4
CH225	Organic Chemistry I	4	NS103	Environmental Science	3
	Social Science Elective	3	PH222	Elements of Physics II	4
PH221	Elements of Physics I	4	MA207	Statistics	3
CS101	Intro. to Microcomputer Applications	3	TE250	Student Diversity and Schools	3
		<u>17</u>			<u>17</u>
Third Year					
CH231	Quantitative Analysis	4	EV395	Junior Seminar	1
GE111	Physical Geology I	4	NS119	Astronomy	4
BL337	General Ecology	3	CH232	Instrumental Analysis	4
HU 251	Humanities I	4	GE112	Physical Geology II	4
		<u>15</u>	TE301	Learning Theory and Teaching Practice	4
					<u>17</u>
Fourth Year					
GE215	Historical Geology	4		Humanities Elective	3-4
	Social Science Elective	3	EV311	Environmental Law or	3
EV341	Environmental Chemistry I: Water and Water Pollution Control or	4	EV313	Solid & Hazardous Waste	2
CH342	Environmental Chemistry II: Air and Solid Wastes	4	EV499	Senior Thesis	3
TE430	General Methods for Secondary Teachers	3	TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3	TE443	Science Methods for Secondary Teachers	3
		<u>16</u>			<u>15-16</u>
Fifth Year					
TE491	Internship in Teaching Diverse Learners I	6	TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3	TE603	Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>			<u>12</u>

C. Physical Science Option

Endorsements: DP, DC (67 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
CH361	Physical Chemistry I	4
CH362	Physical Chemistry II	4
CH451	Biochemistry I	4
EV395	Junior Seminar	1
EV499	Senior Seminar	2
NS103	Intro. to Environmental Science	3
PH231	Elements of Physics I	4
PH232	Elements of Physics II	4
PH290	Independent Study in Physics	4
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
EV128	Geographic Information Systems	1
EV226	Geospatial Analysis I	1

EV227	Geospatial Analysis II	1
	Science Electives (EV, BL, CH or GE)	6
Other (11 credits)		
MA143	Calculus for Engineering I or	4
MA151	Calculus I	4
MA144	Calculus for Engineering II or	4
MA152	Calculus II	3
BA211	Business Statistics	3
General Education (25 credits)		
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
	Approved Social Science	9
HU251	Humanities I	4
	Approved Humanities	3
SD101	Fund. of Speech Communication	3
Professional Education Core (21 credits)		
Free Electives as needed to reach 124-credit minimum (0-3 credits)		

Bachelor's Degrees

Exercise Science

See College of Natural and Health Sciences, page 281.

Bachelor of Science

Career Choices:

Rehabilitation Specialist
Stress Test Technologist
Sport/Fitness Program Director
Sport/Fitness Business Specialist
Personal Fitness Trainer

Student Profile:

Do you ...
like working with people?
value a physically active life-style?
have good communication skills?
possess critical thinking skills?
have a high level
of manual dexterity?

Program Description:

A bachelor of science degree in exercise science prepares you to work in a variety of professional settings, ranging from corporate fitness to hospital clinical to educator and trainer.

Upon graduation, students are prepared and qualify to sit for both American College of Sports Medicine (ACSM) and National Strength and Conditioning Association (NSCA) certifications.

Graduate School Preparations: Students progress to graduate programs in exercise science, sport psychology, physical therapy, chiropractic medicine and other allied health fields.

Career Descriptions:

A wide variety of entry level career opportunities exist for the student prepared in exercise science.

Rehabilitation Specialist — works in conjunction with other medical personnel to provide rehabilitation services for cardiac patients, pulmonary patients and other clinical populations suffering from life-style related illnesses.

Stress Test Technologist — employed in hospital, clinical and university settings to administer fitness testing activities with a variety of populations and testing conditions.

Sport/Fitness Program Director — manages in fitness club settings, either private or public.

Sport/Fitness Business Specialist — markets and demonstrates new sport and exercise equipment within a commercial context.

Personal Fitness Trainer — develops and provides individualized exercise programs, either privately or in fitness club settings.

Exercise Science

Exercise Science Bachelor of Science

Exercise Science Requirements (49 credits)

ES141	Introduction to Movement	3
ES230	Athletic Injury and Illness Prevention	3
ES262	Exercise Physiology I	3
ES268	Fitness Evaluation I - Field Tests	3
ES275	Nutrition for Sport and Exercise Performance	2
ES295	Practicum	2
ES344	Kinesiology	3
ES348	Fitness Evaluation II - Laboratory Procedures	3
ES358	Research Methods in Exercise Science	3
ES362	Exercise Physiology II	3
ES390	Recreation Leadership Apprenticeship	2
ES428	Psychological Aspects of Exercise and Athletic Rehabilitation	3
ES434	Neurological Basics of Motor Learning	3
ES440	Exercise Physiology Seminar	2
ES444	Exercise Prescription	2
ES492	Internship	6
ES496	Selected Research Topics	3

Cognate Requirements (28)

BL121	Anatomy & Physiology I	4
BL122	Anatomy & Physiology II	4
CH104	Life Chemistry I	3
CH105	Life Chemistry II	4
CS101	Intro. to Microcomputer Applications	3
MA207	Principles of Statistical Methods	3
PY101	Introduction to Psychology	4
PY385	Health Psychology	3

Department Electives (10)

ES140	Health and Fitness	3
ES240	Techniques of Athletic Training	2
ES248	Psychology of Sport and Performance and Coaching	3
ES295	Practicum	2
ES345	Modalities and Therapeutic Rehabilitation in Sports Medicine	3
ES390	Recreation Leadership Apprenticeship	1
ES442	Electrocardiography in Exercise Science	2
ES481	Professional Development Seminar	1
RA211	Water Safety & Lifeguard Instructor 2	

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
HE232	Pathophysiology	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.

FALL		SPRING			
First Year					
BL121	Anatomy & Physiology I	4	BL122	Anatomy & Physiology II	4
EN110	First-Year Composition I	3	CH104	Life Chemistry I	3
ES/RC	Elective	3	CS101	Intro. to Microcomputer Applications	3
	General Electives	5	ES141	Introduction to Movement	3
	Social Science Elective	2	EN111	First-Year Composition II	3
		<u>17</u>			<u>16</u>
Second Year					
CH105	Life Chemistry II	4	ES295	Practicum	1
ES230	Athletic Injury and Illness Prevention	3	ES362	Exercise Physiology II	3
ES248	Psychology of Sport and Performance and Coaching	3		General Electives	3
ES262	Exercise Physiology I	3	ES275	Nutrition for Sport and Exercise Performance	2
	Humanities	4		Humanities	4
		<u>17</u>	PY101	Introduction to Psychology	4
					<u>17</u>
Third Year					
ES268	Fitness Evaluation I - Field Tests	3	ES344	Kinesiology	3
MA207	Statistics	3	ES348	Fitness Evaluation II - Laboratory Procedures	3
HE232	Pathophysiology	3			
ES/RC	Elective	3	ES358	Research Methods In Exercise Science	3
SD101	Fund. of Speech Communication	3	ES390	Recreation Leadership Apprenticeship	1
		<u>15</u>	ES/RC	Elective	2
				General Electives	3
					<u>15</u>
Fourth Year					
	Cognate Elective	6		Cognate Elective	6
ES440	Exercise Physiology Seminar	2	ES295	Practicum	2
ES444	Exercise Prescription	2	ES390	Recreation Leadership Apprenticeship	2
ES496	Selected Research Topics	3	ES/RC	Elective	2
PY385	Health Psychology	3		Social Science Elective	1
		<u>16</u>			<u>13</u>
SUMMER					
ES492	Internship (following either 3rd or 4th year)	6			

Bachelor's Degrees

Finance and Economics

See College of Business
and Economics, page 266.

Bachelor of Science

Career Choices:

Economist
Marketing Researcher
Statistician
Financial Manager
Financial Services Professional

Student Profile:

Do you ...

- consider yourself analytical and curious?
- like to work with numbers, charts and graphs?
- like to work with abstractions?
- like people?
- enjoy travel?
- have an interest in working for an international organization?
- have an interest in public policy?
- have an interest in developing your worldview?
- find yourself attracted to the world of finance?

Program Description:

This degree requires successful completion of a minimum of 124 semester credits as prescribed on the following page. The study of finance and economics develops the capacity for analytical reasoning and critical thinking, the most important decision making tools in business, government, education, and in your personal life. Organizations need planners and problem-solvers, people who are logical thinkers. Economists and financiers learn to develop accurate information upon which to make decisions from the vast quantities of complex and often conflicting data generated in today's global economy. Employers hire these professionals because of their abilities for careful analysis, planning and decision making.

Graduate, Professional and Continuing Education

This degree program is an excellent preparation for graduate and professional education in such fields as finance, economics, accounting, business administration and law. Graduates may seek professional certification in related professions such as Certified Financial Planner (CFP), Certified Financial Analyst (CFA), Chartered Financial Consultant (ChFC), Chartered Life Underwriter (CLU) and Certified Management Accountant (CMA).

Career Descriptions:

Economist — develops forecasts of the economy, industry and sales of the firm. Monitors and assesses economic events. Assesses the effect of market developments and government policy on the firm. Conducts research such as estimates of market demand and costs.

Marketing Researcher — identifies and analyzes potential markets. Researches current markets. Determines market potential among current customers. Develops share analysis. Evaluates sales promotion. Forecasts market shares.

Statistician — develops ways to measure organizational activity. Uses statistical techniques to determine if current operations deviate from established standards. Constructs tables and graphs to communicate information effectively.

Financial Manager — prepares budgets and financial forecasts. Manages cash and credit. Evaluates projects. Procures funds. Develops strategic plans.

Financial Services Professional — manages banks and other financial institutions. Prepares financial plans. Works in investments, real estate, insurance and tax and estate planning.

These are just a few of the career choices available to you.

Finance and Economics

Finance and Economics Bachelor of Science

Finance & Economics Core (69 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

Choose one from:

DP225	Word Processing	3
DP231	Database	3
DP235	Spreadsheets	3
DP250	Desktop Publishing	3
DP121	Computer Applications for Business	3
EC201	Principles of Macroeconomics**	3
EC202	Principles of Microeconomics**	3
EC308	Intermediate Microeconomics	3
EC309	Intermediate Macroeconomics	3
FN341	Managerial Finance*	4
FN**	400-Level Electives	8
MA111	College Algebra*	3
MA112	Calculus for Business	4
MK281	Marketing Principles & Strategy*	3
MN365	Human Resource Management*	3

*May count toward general education requirement.

*Part of the business core which must be taken prior to taking BA466.

^Capstone course — take after completion of the business core.

Field requirements (18-20 credits)

Economics option

EC304	Money, Banking & Monetary Policy	3
EC305	Public Finance	3
EC407	Introductory Econometrics	3
EC408	International Economics	3
Economics, finance, or mathematics electives		6

Finance option

FN**	400-level elective	4
Finance, economics or accounting electives		14

Minor option

Any approved minor of 20 or more credits

**FN 400-level courses include FN446, Financial Analysis & Policy; FN448, Investment Strategy; and FN443, Insurance. Two courses from this group must be completed for all options; all three courses must be completed for the finance option.

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
MA111	College Algebra	3	MA112	Calculus for Business	4
	Natural Science Elective	4		Natural Science Elective	4
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
DP121	Computer Applications for Business	3			15
		17			
Second Year					
<i>Choose one from:</i>		3	BA211	Business Statistics	3
DP225	Word Processing		EC202	Principles of Microeconomics	3
DP231	Database		BA255	Business Law II	3
DP235	Spreadsheets		BA231	Business Communications	3
DP250	Desktop Publishing			Elective	3
	Field Elective	4			15
EC201	Principles of Macroeconomics	3			
BA254	Business Law I	3			
SD101	Fund. of Speech Communication	3			
		16			
Third Year					
FN341	Managerial Finance	4	MK281	Marketing Principles & Strategy	3
EC309	Intermediate Macroeconomics	3	FN	400-Level Elective	4
BA308	Managing Cultural Differences	3		Aesthetics Elective	3
HU251	Humanities I	4		Field Electives	6
	Elective	3			16
		17			
Fourth Year					
EC308	Intermediate Microeconomics	3	BA466	Business Policy	3
MN365	Human Resource Management	3		Field Electives	5-7
FN	400-Level Elective	4		Electives	6-8
BA403	Business, Government & Society	3			14-18
	Field Elective	3			
		16			

General Education Requirements

EN110	First Year Composition I	3
EN111	First Year Composition II	3
SD110	Fund. of Speech Communication	3
HU251	Humanities I	4
HU	Elective	3-4

Social Science

EC201	Principles of Macroeconomics	3
	Elective	3-4
	Diversity Elective	3-4

Natural Science with Lab

	Elective	4
	Elective	4

Mathematics

MA111	College Algebra	3
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BS Degree Requirement

Credits from mathematics, natural science or social science not used in general education 8

Bachelor's Degrees

Fine Arts Studies

See College of Arts, Letters and Social Sciences, page 246.

Bachelor of Arts

Career Choices:

Fine Arts Professional —
Graphic Designer, Visual Artist,
Musician, Actor, Writer

Teacher of Fine Arts

Arts Entrepreneur

Arts Organization Staff

Marketing/Design

Student Profile:

Are you...

interested in art?

interested in performing?

interested in people?

Program Description:

This Fine Arts Studies program is an integrated, bi-national program offered by a three-member consortium situated in Sault Ste. Marie: Algoma University, Lake Superior State University, and Sault College of Applied Arts and Technology. The program is designed and administered in such a way as to serve the region as a whole, to reflect the uniqueness of our northern heritage, to be international in scope and to integrate courses of study at both the college and university levels.

The fine arts degree is for students who have wide-ranging interests in fine arts, and who wish to explore and express their potential through following a personalized course of study. While students will invariably participate in a broad range of courses, they must select two main areas of focus (*concentrations*) from the following six: graphic design, music, native arts and culture, theater, visual arts and writing.

Fine arts have been an important aspect of the human experience since first recorded history; from African cave paintings to Greek dramas, from Beethoven symphonies to the writings of Canadian playwrights. From the study of fine arts we can gain an understanding of various cultures through their own indigenous means of expression. Furthermore, we can deepen our understanding of our own culture by participation in various contemporary art forms (drama, music, painting, writing etc.). Most important, by exploring our own creative potential, we can develop a better understanding of ourselves.

Career Descriptions:

This degree will prepare you for further studies in professional schools specializing in fine arts training; for employment in the rapidly expanding arts, entertainment and communication industries; or to apply your enhanced talents as working artists.

Fine Arts Professional —prepares you for working as a managing director of a department of music, arts, theater or performance.

Teacher of Fine Arts — develops courses, maintains studios and supplies, teaches in elementary or secondary education fields or community theaters.

Arts Entrepreneur — performs as a musician; is active in the performing arts and theater; and creates and sells crafts and paintings.

Arts Organization Staff — plans, designs and implements programs and services; assists with administering programs, cultural events and art galleries.

Marketing/Design — works on publications, displays, annual exhibitions, educational programs, craft fairs, galleries, museums and sales.

Fine Arts Studies Bachelor of Arts

Degree Requirements

Degree requirements, as defined below, are subject to amendment. Changes in program, courses, prerequisites, scheduling and availability at the partner institutions are beyond the control of Lake Superior State University. The program is multi-disciplinary in nature and flexible enough to permit you to develop interests in particular areas. The degree will be of interest to those who wish to prepare for teaching, writing/journalism, and librarianship in the arts, as well as to those who wish to develop their interests and experiences in various areas of the fine arts.

Registration Procedures

At present, students of Lake Superior State University (the home institution) who wish to take one or more courses from either Algoma University College or Sault College of Applied Arts and Technology must request permission to do so through the assistant to the provost for academic records at Lake State. All courses will be registered at Lake State but a supplementary registration form will be required for courses to be taken at a host institution (Algoma or Sault College). LSSU will record the course equivalency on the student's registration form and student record after contacting the host school to verify room and enrollment in class(es). All fees will be assessed by LSSU. Credit and grades will be granted only when the host institution provides evidence that the course has been successfully completed.

Bachelor of Arts in Fine Arts Studies

To graduate with a B.A. in fine arts studies, a student must:

1. satisfy all stated requirements for a bachelor of arts degree;
2. complete 124 credits with an overall grade point average of at least 2.00;
3. complete at least 78 credits from at least three fine arts disciplines (minimum nine credits in third discipline) as defined below, with an average GPA of at least 2.00;
4. complete two concentrations in different fine arts disciplines. A concentration is a sequence of at least 21 credits and no more than 36 credits, beyond the first-year prerequisite, in which related subject matter is studied to develop a knowledge of a particular discipline;
5. complete no more than 30 credits in studio and/or performance courses with no more than 15 in any one discipline;
6. complete all general education requirements;
7. complete a student project, which is intended to allow you, with the approval of the supervising professor, the opportunity to integrate or synthesize some aspects of the fine arts into a single project.

Concentrations/Specializations

Your concentration or specialization in fine arts studies consists of concentrations in two different fine arts disciplines defined below, as

well as the required credits in a third fine arts discipline.

Graphic Design
Music
Native Arts and Culture
Theater
Visual Arts
Writing

See pages 255-260 for a list of courses available for each concentration.

Fire Science

See College of Arts, Letters
and Social Sciences, page 246.

Bachelor of Science

Emphasis in:

**Engineering
Technology**

Generalist

Hazardous Materials

Career Choices:

Fire Fighter

Fire Safety Officer

Fire Protection Systems Designer

Hazardous Materials Specialist

Fire Officer/Chief Officer

Emergency Planner

Student Profile:

Are you...

interested in the safety of others?

physically fit?

Program Description:

The bachelor of science degree in fire science offers you the opportunity to specialize in one of three areas of concentration. This program requires students to complete an internship as well as a senior project. You may also be eligible for Michigan Firefighter Certification through the Michigan Firefighters Training Council (MFFTC). The Lake State Fire Science Program recently completed an external accreditation review by the International Fire Service Accreditation Congress (IFSAC). LSSU is the first program to be accredited by this organization. Students will also have the opportunity to receive their Michigan Paramedic certification.

You will experience a "hands on" approach by practicing with up-to-date equipment and experiencing live fire training in the burn training center located adjacent to campus.

Career Descriptions:

Firefighter — works for fire departments at the local, state and federal levels; works for the armed forces and the U.S. Department of the Interior; suppresses structural and other types of fires using a variety of methods; acts as emergency medical technician or paramedic.

Fire Safety Officer — works in industry and for the government as fire inspector and safety officer; conducts safety and fire surveys; plans for fire and other disasters.

Fire Protection Systems Designer — designs fire protection systems for industry; provides consulting services for industry and other organizations.

Hazardous Materials Specialist — works in industry as a manager of hazardous materials; safety officer; consultant for industry in the area of hazardous materials.

Fire Officer/Chief Officer — leads and manages the fire department. Provides command at the scene of emergencies. Prepares budgets; sets and administers department policies; supervises training; ensures compliance with local, state and federal law; conducts fire prevention/code enforcement efforts; and manages day-to-day operations. The chief also serves as an advisor to local government and keeps the community prepared for emergency response.

Emergency Planner — works in office of emergency service and planning at the local, state and federal levels. Responsibilities include preparation of plans for disaster response; coordination of emergency response with other agencies; and preparation of emergency plans.

Fire Science

Fire Science Engineering Technology Emphasis Bachelor of Science

General Education Requirements (29 credits)

Major Requirements (46 credits)

CJ321	Ethics	3
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
FS197	Physical Fitness for Public Safety	1
FS204	Fire Protection Hydraulics and Pumps	3
FS205	Fire Protection Systems & Equipment	3
FS211	Tactics & Strategy	3
FS220	Fire Science Certification	4
FS301	Code Enforcement Inspection and Fire Prevention	3
FS312	Hazardous Materials Management	4
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3
Support Courses (42 credits)		
CS101	Intro. to Microcomputer Applications	3
MA140	Algebra for Technologists	5
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
MT432	Thermodynamics II and Heat Transfer	4
PH221	Elements of Physics I	4
TC101	Construction I	3
TC102	Construction II	3
TC118	Drafting	3
Electives		(7 credits)

FALL		SPRING			
First Year					
FS101	Introduction to Fire Science	3	EN111	First Year Composition I	3
EN110	First-Year Composition I	3	CS101	Intro. to Microcomputer Applications	3
MA140	Algebra for Technologists	5	TC102	Construction II	3
TC101	Construction I	3	SD101	Fund. of Speech Communication	3
		<u>14</u>	FS111	Hazardous Materials	3
					<u>15</u>
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems & Equipment	3
	Elective	3	FS211	Tactics and Strategy	3
MA143	Calculus for Engineering I	4	MA144	Calculus for Engineering II	4
	Social Science Elective	4	TC118	Drafting	3
		<u>14</u>		Humanities Elective	4
					<u>17</u>
Third Year					
FS301	Code Enforcement Inspection and Fire Prevention	3	MT225	Statics & Strength of Materials	3
FS321	Industrial Fire Protection	3	NS	Life Science Elective	4
PH221	Physics I	4	ME335	Fluid Mechanics	3
FS312	Hazardous Materials Management	4	CJ345	Statistics & Design for Public Safety	4
		<u>14</u>	ME336	Thermodynamics	3
					<u>17</u>
Fourth Year					
	Elective	2	FS403	Fire Science Internship	3
FS197	Physical Fitness for Public Safety	1	FS220	Fire Certification	4
FS401	Senior Seminar	3		Social Science	3
MT432	Thermodynamics II and Heat Transfer	4	CJ321	Ethics	3
HU251	Humanities I	4	CJ341	Fire Cause and Arson Investigation	3
	Social Science (Diversity)	3			<u>16</u>
		<u>17</u>			

Bachelor's Degrees

Fire Science

Fire Science Generalist Emphasis Bachelor of Science

General Education Requirements (33 credits)

Major Requirements (45 credits)

CJ321	Ethics	3
CJ341	Fire Cause & Arson Investigation	3
CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS197	Physical Fitness for Public Safety	1
FS204	Fire Protection Hydraulics & Pumps	3
FS205	Fire Protection System Equipment	3
FS211	Tactics & Strategy	3
FS220	Fire Science Certification	4
FS301	Code Enforcement Inspection and Fire Prevention	3
FS312	Hazardous Materials Management	4
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3

Minor (20 credits)

Support courses (6 credits)		
TC101	Construction I	3
TC102	Construction II	3

Electives* (19 credits)

*Must include eight hours B.S. requirements.

FALL		SPRING			
First Year					
FS101	Introduction to Fire Science	3	Social Science Elective	4	
TC101	Construction I	3	Humanities I	4	
EN110	First-Year Composition I	3	EN111	First Year Composition I	3
	General Education Math	3	TC102	Construction II	3
	Elective	3	FS111	Hazardous Materials	3
		<u>15</u>			<u>17</u>
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems Equipment	3
SD101	Fund. of Speech Communication	3	FS211	Tactics and Strategy	3
	Social Science El. (Diversity)	4	BS	Requirement	4
	Natural Science Elective	4		Natural Science Elective	4
		<u>14</u>	CJ	Elective	3
					<u>17</u>
Third Year					
FS301	Code Enforcement Inspection and Fire Prevention	3	CJ341	Fire Cause & Arson Investigation	3
BS	Requirement	4		Minor	9
	Humanities Elective	4	CJ345	Statistics for Design & Public Safety	4
FS321	Industrial Fire Protection	3			<u>16</u>
		<u>14</u>			
Fourth Year					
FS312	Hazardous Materials Management	4	FS403	Fire Science Internship	3
FS197	Physical Fitness for Public Safety	1	FS220	Fire Science Certification	4
FS401	Senior Seminar	3		Minor	4
	Minor	6	CJ321	Ethics	3
	Electives	2			<u>14</u>
		<u>16</u>			

Fire Science

Fire Science Hazardous Materials Emphasis Bachelor of Science

General Education Requirements (25 credits)

Major Requirements (42 credits)

CJ321	Ethics	3
CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS197	Physical Fitness for Public Safety	1
FS204	Fire Protection Hydraulics & Pumps	3
FS205	Fire Protection System Equipment	3
FS211	Tactics & Strategy	3
FS220	Fire Science Certification	4
FS301	Code Enforcement Inspection and Fire Prevention	3
FS312	Hazardous Materials Management	4
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3

Support Courses (66 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	4
CH232	Instrumental Analysis	4
CH351	Introductory Biochemistry	4
GG108	Physical Geography: Meteorology & Climatology	4
MA111	College Algebra	3
MA112	Calculus for Business & Life Sciences*	4
NS102	Introduction to Geology	4
NS103	Environmental Science	3
NS104	Environmental Science Lab	1
TC101	Construction I	3
TC102	Construction II	3

*or MA151/MA143

FALL		SPRING			
First Year					
FS101	Introduction to Fire Science	3	EN111	First-Year Composition II	3
EN110	First-Year Composition I	3	CH116	Principles of Chemistry II	4
MA111	College Algebra	3	BL109	General Biology	4
TC101	Construction I	3	MA112	Calculus for Business & Life Sciences	4
CH115	Principles of Chemistry I	5	TC102	Construction II	3
		<u>17</u>			<u>18</u>
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS111	Hazardous Materials	3
CH225	Organic Chemistry I	4	FS205	Fire Protection Systems Equipment	3
CH231	Quantitative Analysis I	4	CH226	Organic Chemistry II	4
BL110	Zoology	2	CH332	Instrumental Analysis	4
SD101	Fund. of Speech Communication	3	BL111	Botany	2
		<u>16</u>			<u>16</u>
Third Year					
GG108	Physical Geology	4		Soc. Sci. Elective (Diversity)	3
BL230	Soils	4		Humanities Elective	4
FS321	Industrial Fire Protection	3	NS102	Geology	4
HU251	Humanities	4	FS211	Tactics and Strategy	3
FS301	Code Enforcement Inspection and Fire Prevention	3	CJ345	Statistics & Design for Public Safety	4
		<u>18</u>			<u>18</u>
Fourth Year					
FS401	Senior Seminar	3	FS403	Fire Science Internship	3
CH451	Biochemistry	4	FS220	Fire Science Certification	4
FS197	Physical Fitness for Public Safety	1	CJ321	Ethics	3
FS312	Hazardous Materials Management	4		Social Science	4
NS103	Environmental Science	3			<u>14</u>
NS104	Environmental Science Lab	1			<u>16</u>

Bachelor's Degrees

Fisheries and Wildlife Management

See College of Natural and Health Sciences, page 281.

Bachelor of Science

Concentrations in

Fisheries Management

Wildlife Management

Career Choices:

Fisheries & Wildlife Biologist

Fisheries Biologist

Wildlife Biologist

Program Description:

Fisheries and Wildlife Management programs place a strong emphasis on understanding the relationship between organisms and their habitats by blending a conceptual understanding of fish and wildlife ecology and population dynamics with practical skills obtained during laboratory and field exercises. Students graduating from this rigorous, applied curriculum can meet the qualifications of state and federal natural resource management agencies as technicians and biologists.

These programs require completion of general education requirements and electives so that at least 125 credits are earned.

Career Descriptions:

Fisheries & Wildlife Biologist — manages both fish and wildlife populations. This option will furnish a broad education for a variety of state, federal or private career opportunities.

Fisheries Biologist — manages sport and commercial fisheries and fish hatchery operations. This option provides hands-on preparation for those interested in fisheries and/or hatchery management.

Wildlife Biologist — manages game and non-game wildlife populations. This option offers an aggressive preparation for those interested in any aspect of wildlife ecology or management.

Student Profile:

Do you...

have interest and ability in science and mathematics?

enjoy the outdoors?

like to work in all weather conditions?

respect and promote the conservation of natural resources?

have the ability to analyze and understand quantitative data?

have good oral and written communication skills?

want to consider pursuing a graduate degree?

Fisheries & Wildlife Core Requirements

		(61-64 credits)
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL140	Intro. to Fisheries & Wildlife	1
BL199	Freshman Seminar	1
BL202	Field Botany	
	<i>or</i>	3-4
BL284	Forestry	
BL220	Genetics	4
BL240	Natural History of the Vertebrates	3
BL243	Vertebrate Anatomy	4
BL280	Biometrics	3
BL299	Sophomore Seminar	1
BL330	Animal Physiology	4

BL337	General Ecology	3
BL399	Junior Seminar	1
BL495	Senior Project	1-3
BL499	Senior Seminar	1
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH220	Survey of Organic Chemistry	4
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
MA112	Calculus for Business & Life Sciences	4
MA207	Principles of Statistical Methods	3

Bachelor's Degrees

Fisheries and Wildlife Management

Fisheries and Wildlife Management Bachelor of Science

In addition to the fisheries and wildlife core requirements, the following courses must be successfully completed to obtain this degree:

Fisheries & Wildlife Management (27 credits)	
BL310 Ichthyology	3
BL311 Mammalogy	3
BL312 Ornithology	3
BL333 Fish Ecology	3
BL339 Wildlife Ecology	3
BL345 Limnology	3
BL432 Fisheries Management	3
BL439 Wildlife Management	3
BL Electives	3

FALL		SPRING	
First Year			
BL109 General Biology	4	BL110 General Zoology	2
BL140 Introduction to Fisheries & Wildlife	1	BL111 General Botany	2
CH115 General Chemistry I	5	BL199 Freshman Seminar	1
EN110 First-Year Composition I	3	CH116 General Chemistry II	4
MA111 College Algebra	3	MA112 Calculus for Business & Life Science	4
	<u>16</u>	EN111 First-Year Composition II	3
			<u>16</u>
Second Year			
BL202 Field Botany	3	EV127 Global Positioning Systems	1
BL240 Natural History of the Vertebrates	3	BL243 Vertebrate Anatomy	4
SD101 Fund. of Speech Communication	3	BL280 Biometrics	3
Elective	3	BL299 Sophomore Seminar	1
EV125 Geospatial Basics	1	CH220 Survey of Organic Chemistry	4
EV126 Air Photo Interpretation	1	Social Science Elective	3
MA207 Principles of Statistical Methods	3		<u>16</u>
	<u>17</u>		
Third Year			
BL310 Ichthyology	3	BL312 Ornithology	3
BL311 Mammalogy	3	BL330 Animal Physiology	4
BL337 General Ecology	3	BL333 Fish Ecology	3
BL345 Limnology	3	BL339 Wildlife Ecology	3
HU251 Humanities I	4	BL399 Junior Seminar	1
	<u>16</u>		<u>14</u>
Fourth Year			
BL220 Genetics	4	BL Biology Elective	3
BL432 Fisheries Management	3	BL499 Senior Seminar	1
BL439 Wildlife Management	3	Social Science Elective	4
Social Science Diversity Elective	3	Humanities Elective	3
BL495 Senior Project	1	Elective	3
Elective	3		<u>14</u>
	<u>17</u>		

Fisheries and Wildlife Management Fisheries Management Concentration Bachelor of Science

In addition to the fisheries and wildlife core requirements, the following courses must be successfully completed to obtain this degree:

Fisheries Management (27 credits)	
BL310 Ichthyology	3
BL333 Fish Ecology	3
BL345 Limnology	3
BL372 Freshwater Fish Culture	3
BL432 Fisheries Management	3
BL475 Aquatic Entomology	3
BL Biology Electives	3

FALL		SPRING	
First Year			
BL109 General Biology	4	BL110 General Zoology	2
BL140 Intro. to Fisheries & Wildlife	1	BL111 General Botany	2
CH115 General Chemistry I	5	BL199 Freshman Seminar	1
EN110 First-Year Composition I	3	CH116 General Chemistry II	4
MA111 College Algebra	3	MA112 Calculus for Business and Life Science	4
	<u>16</u>	EN111 First-Year Composition II	3
			<u>16</u>
Second Year			
BL202 Field Botany	3	BL243 Vertebrate Anatomy	4
BL240 Natural History of the Vertebrates	3	BL280 Biometrics	3
EV125 Geospatial Basics	1	BL299 Sophomore Seminar	1
EV126 Air Photo Interpretation	1	CH220 Survey of Organic Chemistry	4
SD101 Fundamentals of Speech	3	EV127 Global Positioning Systems	1
Elective	3	Social Science Elective	3
MA207 Principles of Statistical Methods	3		<u>16</u>
	<u>17</u>		
Third Year			
BL220 Genetics	4	BL330 Animal Physiology	4
BL310 Ichthyology	3	BL333 Fish Ecology	3
BL337 General Ecology	3	BL372 Freshwater Fish Culture	3
BL345 Limnology	3	BL399 Junior Seminar	1
Social Science Elective	3	HU251 Humanities I	4
	<u>16</u>		<u>15</u>
Fourth Year			
BL432 Fisheries Management	3	BL Biology Elective	6
BL475 Aquatic Entomology	3	BL499 Senior Seminar	1
BL Biology Elective	3	Humanities Elective	3
Soc. Sci. Diversity Elective	3	Elective	4
BL495 Senior Project	1		<u>14</u>
Elective	3		
	<u>16</u>		

Bachelor's Degrees

Fisheries and Wildlife Management

Fisheries and Wildlife Management Wildlife Management Concentration Bachelor of Science

In addition to the fisheries and wildlife core requirements, the following courses must be successfully completed to obtain this degree:

Wildlife Management	(27 credits)	
BL286	Principles of Watersheds	3
BL311	Mammalogy	3
BL312	Ornithology	3
BL339	Wildlife Ecology	3
BL437	Plant Ecology	3
BL439	Wildlife Management	3
BL	Biology Electives	9

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110 General Zoology	2	
BL140	Intro. to Fisheries and Wildlife	1	BL111 General Botany	2	
CH115	General Chemistry I	5	BL199 Freshman Seminar	1	
EN110	First-Year Composition I	3	CH116 General Chemistry II	4	
MA111	College Algebra	3	MA112 Calculus for Business and Life Science	4	
		<u>16</u>	EN111 First-Year Composition II	3	
				<u>16</u>	
Second Year					
BL202	Field Botany	3	EV127 Global Positioning Systems	1	
BL240	Natural History of the Vertebrates	3	BL243 Vertebrate Anatomy	4	
EV125	Geospatial Basics	1	BL280 Biometrics	3	
EV126	Air Photo Interpretation	1	BL299 Sophomore Seminar	1	
		3	CH220 Survey of Organic Chemistry	4	
SD101	Fund. of Speech Communication	3	Social Science Elective	3	
MA207	Principles of Statistical Methods	3		<u>16</u>	
		<u>17</u>			
Third Year					
BL220	Genetics	4	BL312 Ornithology	3	
BL311	Mammalogy	3	BL286 Principles of Watersheds	4	
BL337	General Ecology	3	BL339 Wildlife Ecology	3	
BL	Biology Elective	3	BL399 Junior Seminar	1	
	Humanities Elective	3	HU251 Humanities I	4	
		<u>16</u>		<u>15</u>	
Fourth Year					
BL437	Plant Ecology	3	BL330 Animal Physiology	4	
BL439	Wildlife Management	3	BL499 Senior Seminar	1	
BL	Biology Elective	3	BL	Biology Elective	3
BL495	Senior Project	1		Social Science Elective	3
	Soc. Sci. Diversity Elective	3		Elective	4
		<u>3</u>			<u>15</u>
		<u>16</u>			

Bachelor's Degrees

French

See College of Arts, Letters
and Social Sciences, page 246.

Program Description:

The program of French Studies offers students the possibility to acquire not only a comprehensive knowledge of modern spoken and written French, but also the possibility to participate in a rich experience designed to enhance their intellectual formation and to qualify them for an increasing number of professions at home and abroad. One semester of directed academic and cultural immersion in a French-speaking university completes the normal cycle of studies for a bachelor of arts in French Studies.

Career Descriptions:

Elementary or Secondary Teacher — teaches French from elementary to university level in the U.S. and Canada, as well as England and the former British empire. There is an increasing demand in the francophone world for teachers of English with knowledge of French.

International Business — works in international business ventures, mergers, etc. France alone counts for over 1200 companies with subsidiaries in the U.S. and is presently the largest recipient of U.S. investments. French-speaking Canada, a member of NAFTA, is the United States' most important export market.

Communication — uses French language in global information networks. French is the second language of the Internet. Translates from French to English and English to French in areas of science, technology, electronics and literature.

Travel and Tourism — works in airlines, travel agencies, hotels, restaurants, museums and historic sites. After the U.S., France is the second-most visited tourist destination in the world and is known as the language of cuisine, fashion, personal care products, architecture, theater, arts and dance.

Bachelor of Arts

French Studies

Elementary Teaching Certification

Secondary Teaching Certification

Career Choices:

Elementary Teacher

Secondary Teacher

University Professor

International Business

Communication

Travel and Tourism

Student Profile:

Do you...

have diligence?

have open-mindedness?

want to expand your cultural
awareness?

Bachelor's Degrees

French

French Bachelor of Arts

Requirements: In addition to the general education requirements, students must complete 48 semester hours of credit in French, the last six of level-400, preferably taken as directed academic and cultural immersion in a French-speaking university.

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
FR353	Business French I	3
FR354	Business French II	3
FR355	Survey of French Literature I	3
FR356	Survey of French Literature II	3
FR360	French Cultural Perspectives	3-4
FR370	The Francophone World I	4
FR460	Directed Academic and Cultural Immersions	6

Required Cognates

HS315	Europe From Napoleon to World War I	4
HS316	Europe in the 20th Century	4

Elementary Teaching Certification

To be recommended for elementary teacher certification, students must complete the elementary teaching minor and the elementary planned program. You earn a bachelor's degree, then participate in a fifth-year teaching internship with accompanying-level course work.

Secondary Teaching Certification

To be recommended for secondary teacher certification, students must complete an approved minor in a second teachable subject and the secondary teaching minor. You earn a bachelor's degree, then participate in a fifth-year teaching internship with accompanying graduate-level course work.

FALL		SPRING			
First Year					
FR151	First Year French I	4	FR152	First Year French II	4
EN110	First Year Composition I	3	EN111	First Year Composition II	3
SD101	Fund. of Speech Communication	3	BL109	General Biology	4
	General Education Math	3		Electives or Second Major	6
	Electives	4			17
		17			
Second Year					
FR251	Second Year French I	4	FR252	Second Year French II	4
HU251	Humanities I	4	MA207	Princ. of Statistical Methods	3
CS101	Intro. to Microcomputer Applications	3	FR360*	French Cultural Perspectives	3-4
	Electives or Second Major	6		Electives or Second Major	6
		17			16-17
Third Year					
FR351	Advanced Conversation and Composition I	3	FR352	Advanced Conversation and Composition II	3
FR353	Business French I	3	FR354	Business French II	3
FR355	Survey of French Literature I	3	FR356	Survey of French Literature II	3
HS315	Europe from Napoleon to World War I	4	NS102	Introduction to Geology	4
	Electives or Second Major	4		Electives or Second Major	4
		17			17
Fourth Year					
FR370	The Francophone World I	4	FR460	Directed Academic and Cultural Immersion	6
HS316	Europe in the 20th Century	4			
	Electives or Second Major	8			
		16			

**FR360 French Cultural Perspectives may also be taken in the summer as students participate in a study-tour of France.*

Geology

See College of Natural and Health Sciences, page 281.

Program Description:

Geology examines the dynamic Earth and its physical, chemical and biologic history. It involves the study of changes that are taking and have taken place and the forces that cause these changes. For example, geologists interpret the movements of the continents over geologic time and the formation of mountains, volcanoes and other features of the Earth's surface. Geologists attempt to understand our physical environment from which we derive most of the natural resources essential to civilization. They investigate the processes that led to the formation of mineral deposits, and oil, gas and coal. They also study environmental change throughout the history of the Earth and how those changes and the development of life are related. Geologists attempt to predict natural disasters such as earthquakes, volcanic eruptions, and landslides, and they are very active in modeling groundwater flow to develop water reserves for municipalities and to protect groundwater from contamination. Geologists study the natural world and apply their knowledge to achieve harmony between the human race and its environment.

Career Descriptions:

Energy Fuels Exploration Geologist — searches worldwide for petroleum, gas, coal. Career opportunities are with integrated energy fuels exploration companies and government agencies.

Mineral Exploration and Production Geologist — studies the origin, occurrences and extraction of metallic and non-metallic mineral resources such as gold, iron, uranium, diamonds, clay and limestone. Career opportunities are with many different kinds of companies and government agencies.

Paleontologist — studies the origin and evolution of life through time and its applications to interpreting the geologic record. Career opportunities are with energy companies, museums, universities, government agencies.

Geophysicist — uses non-destructive methods to determine the electrical, magnetic, gravimetric and seismic properties of earth with applications to exploration and environmental concerns. Career opportunities are with integrated energy, mineral and environmental companies, consulting firms and government agencies.

**Environmental Geologist/
Hydrogeologist** — studies surface and groundwater supplies and contamination; flooding and land slide potential; and environmental quality issues such as chemical contamination of soils and solid waste disposal. Career opportunities are with companies in many industries, government agencies, and consulting firms.

Teacher — teaches geology and earth science in elementary and secondary schools and many specialized fields of geology at the college level.

Bachelor's Degree

Geology

Options:

**Geology:
Environmental Geology
Secondary Teaching**

Career Choices:

Energy Fuel Exploration Geologist

Mineral Exploration
and Production Geologist

Paleontologist

Geophysicist

Environmental Geologist

Hydrogeologist

Teacher

Student Profile:

Do you...

like the outdoors?

like to travel?

like to use computers?

enjoy meeting interesting people
all over the world?

want to be involved in resource
management and protecting the
environment?

enjoy applying science and
mathematics to understanding
earth issues?

enjoy reconstructing the earth's
history?

like the challenge of finding new
resources?

Bachelor's Degrees

Geology

Geology Bachelor of Science

Geology	(60 credits)
GE121 Physical/Historical Geology I	4
GE122 Physical/Historical Geology II	4
GE218 Structural Geology and Tectonics	5
GE223 Mineralogy and Petrology	5
GE280 Introduction to Field Geology	3
GE321 Optical Mineralogy	3
GE331 Introduction to Geophysics	4
GE351 Invertebrate Paleontology I	3
GE352 Invertebrate Paleontology II	3
GE422 Igneous and Metamorphic Petrography	3
GE423 Sedimentary Petrography	3
GE436 Field Geology	6
GE461 Stratigraphy & Sedimentation	4
GE471 Economic Geology I	4
GE472 Economic Geology II	3
GE490 Research Topics in Geology	3

Support Courses	(27-30 credits)
CH115 General Chemistry I	5
CH116 General Chemistry II	4
PH221 Elements of Physics I*	4
PH222 Elements of Physics II*	4
[MA111 College Algebra* or MA140 Precalculus Mathematics*]	3-5
MA112 Calculus for Business and Life Sciences*	4
[MA207 Principles of Statistical Methods or MA308 Probability and Mathematical Statistics]	3-4
BA211 Business Statistics]	

*Students with adequate preparation in mathematics are advised to take MA151 and MA152 in place of MA111 or MA140 and MA112 and to take PH231-PH232 in place of PH221-PH222.

Free elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

FALL		SPRING	
First Year			
GE121 Physical & Historical Geology I	4	GE122 Physical & Historical Geology II	4
MA111 College Algebra*	4	MA112 Calculus for Business & Life Sci.*	4
EN110 First-Year Composition I	3	Social Science Elective	3
Social Science Elective	4	EN111 First-Year Composition II	3
	<u>15</u>		<u>14</u>
Second Year			
CH115 General Chemistry I	5	GE223 Mineralogy & Petrology	5
GE218 Structural Geology and Tectonics	5	CH116 General Chemistry II	4
Social Science Diversity	3	SD101 Fund. of Speech Communication	3
Electives	3	MA207 Prin. of Statistical Methods	3
	<u>16</u>		<u>15</u>
Summer			
GE280 Introduction to Field Geology	3		
Third Year			
GE351 Invertebrate Paleontology I	3	GE352 Invertebrate Paleontology II	3
GE471 Economic Geology I	4	GE472 Economic Geology II	3
HU251 Humanities I	4	GE331 Introduction to Geophysics	4
Electives	4	Humanities Elective	3
	<u>15</u>		<u>13</u>
Fourth Year			
GE321 Optical Mineralogy	3	GE422 Igneous & Metamorphic Petrography	3
GE423 Sedimentary Petrography	3	GE461 Stratigraphy & Sedimentation	4
PH221 Elements of Physics I*	4	PH222 Elements of Physics II*	4
Electives	4	GE490 Research Topics in Geology	3
	<u>14</u>		<u>14</u>
Summer			
GE436 Field Geology	6		

The upper division geology curriculum is undergoing revision. See department chair of geology/physics for updates.

*See options under proposed program.

Geology: Environmental Geology Option Bachelor of Science

Total Program Requirements Plus Distributed Electives (95 credits)

Program Requirements (75-83 credits)

GE121	Physical & Historical Geology I	4
GE122	Physical & Historical Geology II	4
GE218	Structural Geology and Tectonics	5
GE223	Mineralogy and Petrology	5
GE280	Introduction to Field Geology	3
GE311	Principles of Hydrology	3
GE312	Groundwater Hydrology	3
GE331	Introduction to Geophysics	4
GE436	Field Geology	6
GE461	Stratigraphy & Sedimentation	4
NS103	Environmental Science	3
CH115	General Chemistry I	5
CH116	General Chemistry II	4
[CH225	Organic Chemistry I and	
CH226	Organic Chemistry II	4-8
	or	
CH220	Survey of Organic Chemistry]	
PH221	Elements of Physics I*	4
PH222	Elements of Physics II*	4
[MA111	College Algebra*	
	or	3-5
MA140	Precalculus Mathematics*]	
	and	
MA112	Calculus for Business and Life Sciences*	4
[MA207	Principles of Statistical Methods	
	or	
MA308	Probability and Mathematical Statistics	3-4
	or	
BA211	Business Statistics]	

Distributed Electives (13-20)

GE351	Invertebrate Paleontology I	3
GE352	Invertebrate Paleontology II	3
GE471	Economic Geology I	4
GE472	Economic Geology II	3
GE490	Research Topics in Geology	1-4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
CH341	Environmental Chemistry I	4
CH342	Environmental Chemistry II	4
FS312	Hazardous Material Management	4
BL230	Introduction to Soil Science	4

*Students with adequate preparation in mathematics are advised to take MA151 and MA152 in place of MA111 or MA140 and MA112 and to take PH231-PH232 in place of PH221-PH222.

Free elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

FALL		SPRING			
First Year					
GE121	Physical & Historical Geology I	4	GE122	Physical & Historical Geology II	4
MA111	College Algebra*	4	MA112	Calculus for Business & Life Sciences*	4
CH115	General Chemistry I	5	CH116	General Chemistry II	4
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
		16			15
Second Year					
GE218	Structural Geology and Tectonics	5	GE223	Mineralogy & Petrology	5
NS103	Environmental Science	3	CH220	Survey of Organic Chemistry	4
FS312	Hazardous Material Management	4	SD101	Fund. of Speech Communication	3
	Soc. Sci. Elective	3	MA207	Prin. of Statistical Methods	3
		15			15
Summer					
GE280	Introduction to Field Geology	3			
Third Year					
GE311	Principles of Hydrology	3	GE312	Groundwater Hydrology	3
GE471	Economic Geology I	4	GE331	Introduction to Geophysics	4
CH231	Quantitative Analysis	4		Social Science Elective	4
HU251	Humanities I	4		Social Science Diversity Elective	3
		15			14
Fourth Year					
CH341	Environmental Chemistry I	4	CH342	Environmental Chemistry II	4
PH221	Elements of Physics I*	4	PH222	Elements of Physics II*	4
	Humanities Elective	3	GE461	Stratigraphy & Sedimentation	4
	Electives	3		Electives	3
		14			15
Summer					
GE436	Field Geology	6			

*See options under support courses.

The upper division geology curriculum is undergoing revision. See the department chair of geology/physics for updates.

Geology

Geology Secondary Teaching Bachelor of Science

Departmental Requirements (45 credits)

GE121	Physical & Historical Geology I	4
	<i>or</i>	
GE115	Field Excursions in Earth Science	4
GE122	Physical and Historical Geology II	4
GE218	Structural Geology and Tectonics	5
GE223	Mineralogy and Petrology	5
GE280	Introduction to Field Geology	3
300-level or above GE credits	minimum of 12	
NS116	Oceanography	4
NS119	Astronomy	4
GG108	Physical Geography: Meteorology and Climatology	4

Required Support Courses (6-8 credits)

[MA111	College Algebra*	3-5
	<i>or</i>	
MA140	Precalculus*	
MA207	Prin. of Statistical Methods	3

Professional Component Minor (22 credits)

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity & Schools	3
TE301	Learning Theory and Teaching Practice	4
TE430	General Methods for Secondary Teachers	3
TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3
TE443	Science Methods for Secondary Teachers	3

General Education

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
	Approved Humanities	3
SD101	Fund. of Speech Communication	3
	Soc. Sci. Elective	6-8
	Soc. Sci. Diversity	4

Free Electives to Total 124 (16 credits)

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	CS101 Intro. to Microcomputer Applications	3
MA111	College Algebra	3	EN111 First-Year Composition II	3
GE121	Physical & Historical Geology I		GE122 Physical and Historical Geology II	4
	<i>or</i>		PY101 Introduction to Psychology	4
GE115	Field Excursions in Earth Science	4		<u>4</u>
TE150	Reflections on Learning and Teaching	3		14
		<u>13</u>		
Second Year				
CH115	General Chemistry I	5	CH116 General Chemistry II	4
GE218	Structural Geology and Tectonics	5	GE223 Mineralogy and Petrology	5
HU251	Humanities I	4	GG108 Physical Geography: Meteorology & Climatology	4
SD101	Fund. of Speech Communication	3	TE250 Student Diversity & Schools	3
		<u>17</u>		<u>16</u>
Summer				
GE280	Introduction to Field Geology	3		
Third Year				
GE311	Principles of Hydrology	3	GE312 Groundwater Hydrology	3
TE301	Learning Theory and Teaching Practice	4	NS116 Oceanography	4
	Electives	8	Humanities Elective	3-4
		<u>15</u>	Electives	4
				<u>14-15</u>
Fourth Year				
GE351	Invertebrate Paleontology I**	3	GE352 Invertebrate Paleontology II**	3
NS119	Descriptive Astronomy	4	TE431 The Secondary Learner	3
Soc. Sci. Elective		3-4	TE443 Science Methods for Secondary Teachers	3
TE430	General Methods for Secondary Teachers	3	Electives	4
TE440	Reading in the Content Area	3	MA207 Principles of Statistical Methods	3
		<u>16-17</u>		<u>16</u>
Fifth Year (internship year)				
TE491	Internship: Teaching Diverse Learners I	6	TE492 Internship: Teaching Diverse Learners II	6
TE601	Professional Roles & Teaching Practice I	3	TE603 Professional Roles & Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604 Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>		<u>12</u>

*See options under planned program courses.

**Alternate year courses.

Bachelor's Degrees

History

See College of Arts, Letters and Social Sciences, page 246.

Program Description:

The bachelor of arts or science degree will prepare you for entry-level work in industry and government as well as prepare you for graduate or professional schools.

Students may wish to co-enroll in the Teacher Education Program and complete the requirements for elementary or secondary certification.

Other Qualifications — Graduate degrees may be necessary for some of the positions shown. The Ph.D. is essential for appointment to a permanent teaching and research position in colleges and universities.

Career Descriptions:

Elementary/Secondary Teacher — teaches elementary, middle and high school students; becomes educational administrator.

Museum Archivist and Curator — searches for, acquires, appraises, analyzes, describes, arranges, catalogs, restores, preserves, exhibits, maintains and stores items of lasting value for museums.

University Professor — teaches undergraduate and graduate courses; conducts research.

Government Worker — work for a variety of local, state and federal agencies as operational level personnel and manager.

Other Opportunities — include preparation for graduate or professional schools.

Bachelor of Arts

**Bachelor of Science
Elementary Teacher
Certification**

**Secondary Teacher
Certification**

Career Choices:

Elementary/Secondary Teacher
Museum Archivists and Curator
University Professor
Government Worker

Student Profile:

Are you...

interested in the past?

a critical thinker?

a good reader?

curious about how the past affects the present?

History

History

Bachelor of Arts Bachelor of Science

Required Courses

HS101	History of World Civilization I and History of World Civilization II	8
HS131	United States History I and United States History II	8
HS496	Historical Methods	2
HS497	Senior Seminar in History	2

300/400-Level

Choose 16 credits from the following:

HS301	History of England - 1000-1714	4
HS301	England in the Modern World	4
HS310	Russia: From Underdeveloped State to Superpower	4
HS315	Europe from Napoleon to world War I	4
HS316	Europe in the 20th Century	4
HS331	American Intellectual and Cultural History I	4
HS332	American Intellectual and Cultural History II	4
HS335	American Political Parties	4

Additional History Electives to Total 30 Semester Hours

GG201	World Regional Geography	4
GG306	Cultural Geography	3
Choose one course from:		
EC201	Principles of Macroeconomics	3
GG321	Geography of Europe and Great Britain	4
GG322	Geography of South American, Central American and 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

Minor

General Education Requirements

BA Degree Requirements

One Year Foreign Language	8
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or

BS Degree Requirements

Natural Science, Mathematics, or Social Science beyond general education and major requirements	8
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Total Credits for Degree: 124

Bachelor of Arts or Bachelor of Science

FALL

First Year

EN110	First Year Composition I	3
SD101	Fund. of Speech Communication	3
NS	Elective	4
HS101	History of World Civilization I or	4
HS131	United States History I	4
		<u>14</u>

SPRING

HU251	Humanities I	4
EN111	First Year Composition II	3
NS	Elective	4
HS102	History of World Civilization II or	4
HS132	United States History II	4
		<u>15</u>

Second Year

GG306	Cultural Geography	3
	History Elective	4
	General Education Math	3
	Cognate** or Language Elective	4
	Minor or Electives	3
		<u>17</u>

GG201	World Regional Geography	4
History	Elective	4
HU	Elective	4
	Cognate** or Language Elective	4
		<u>16</u>

Third Year

HS	300- or 400-Level History Elective	4
	Minor	4
Geography Requirement 300-Level		4
or		
EC201	Principles of Macroeconomics	3
	Free Elective	4
		<u>15-16</u>

HS	300- or 400-Level History Elective	4
	Minor	8
	Elective	4
		<u>16</u>

Fourth Year

HS496	Historical Methods	2
HS	300- or 400-Level History Elective	4
	Minor	4
	Free Electives	5
		<u>15</u>

HS497	Senior Seminar in History	2
HS	300- or 400-Level History Elective	4
	Minor	4
	Free Elective	6
		<u>16</u>

**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.

History Elementary Teacher Certification Bachelor of Arts Bachelor of Science

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. 25 credits in teacher education courses TE150, 250, 301, 330, 410, 411, 420, 421, 422.

You earn a bachelor's degree and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

Required Courses:

HS101	History of World Civilization I and History of World Civilization II	8
HS102	History of World Civilization II or United States History I	8
HS131	United States History I and United States History II	8
HS132	United States History II	4
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

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 Language or Science Cognate from Planned Program	8

FALL		SPRING			
First Year					
EN110	First Year Composition I	3	EN111	First Year Composition II	3
NS110	Chemistry in Society	4	HU251	Humanities I	4
HS101	History of World Civilization I or United States History I	4	HS102	History of World Civilization II or United States History II	4
HS131	United States History I	4	HS132	United States History II	4
CS101	Intro. to Microcomputer Applications	3	MA110	Explorations in Mathematics	3
		<u>14</u>	TE150	Reflections on Learning	3
					<u>17</u>
Second Year					
PS110	Intro. to American Government and Politics	4	PS130	Intro. to State and Local Government	4
NS102	Introduction to Geology	4	GG201	World Regional Geography	4
TE250	Student Diversity and Schools	3	MA104	Geometry and Measurement	4
SD101	Fund. of Speech Communication	3	TE301	Students and the Contexts of Learning	4
MA103	Number Systems and Problem Solving	4			<u>16</u>
		<u>18</u>			
Third Year					
HS	300/400-Level History Elective	4	HS440	The Declaration of Independence and the Constitution	4
GG306	Cultural Geography	3		Planned Program - Science	4
TE330	Reading in the Elementary Classroom	3	PY265	Child & Adolescent Development	3
BL109	General Biology	4		Planned Program - English	3
	Planned Program - English	3		Planned Program - English	3
		<u>17</u>			<u>17</u>
Fourth Year					
HS496	Historical Methods	2	HS497	Senior Seminar in History	2
HS	300/400-Level History Elective	4	HS	300/400-Level History Elective	4
TE410	Corrective Reading in the Classroom	3	TE420	Math Methods for Elementary Teachers	2
TE411	Elementary Language Arts and Methods Across the Curriculum	3	TE421	Science Methods for Elementary Teachers	2
HU	Elective	3	TE422	Social Studies Methods for Elementary Teachers	2
		<u>15</u>		Elective	2
					<u>3</u>
					<u>15</u>
Graduate with bachelor's degree					
Fifth Year					
TE491	Internship in Teaching Diverse Learners I	6	TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles & Teaching Practice I	3	TE603	Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>			<u>12</u>

***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's Degrees

History

Bachelor's Degrees

History Secondary Teacher Certification Bachelor of Arts Bachelor of Science

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

- 53 semester credit hours in the courses specified below, or their equivalents;
- A minor approved for teacher certification; and
- 22 credits in teacher education courses TE150, 250, 301, 430, 431, 440 and 444.

You earn a bachelor's degree and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

Required Courses:

HS101	History of World Civilization I <i>and</i>	8
HS102	History of World Civilization II <i>or</i>	
HS131	United States History I <i>and</i>	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
GG201	World Regional Geography	4
GG306	Cultural Geography	3
B.A.	1st Year Foreign Language <i>or</i>	8
B.S.	Social Science Cognate	

FALL		SPRING		
First Year				
EN110	First Year Composition I	3	SD101 Fund. of Speech Communication	3
NS	Elective	4	HU251 Humanities I	4
HS101	History of World Civilization I <i>or</i>	4	HS102 History of World Civilization II <i>or</i>	4
HS131	United States History I Minor	4	HS132 United States History II	
		<u>4</u>	TE150 Reflections on Learning and Teaching	3
		15	EN111 First Year Composition II	<u>3</u>
				17
Second Year				
PS110	Intro. to American Government And Politics	4	General Education Math Cognate**	3
TE250	Student Diversity and Schools	3	GG201 World Regional Geography	4
GG306	Cultural Geography	3	PS130 Intro. to State and Local Government	4
HU	Elective	3-4		<u>4</u>
CS101	Intro. to Microcomputer Applications	3		15
		<u>16-17</u>		
Third Year				
HS	300/400-Level History Elective	8	HS440 The Declaration of Independence and the Constitution	4
	Minor	4	HS 300/400-Level History Elective Minor	4
	Minor	4	TE301 Students and the Contexts of Learning	4
		<u>16</u>		16
Fourth Year				
HS496	Historical Methods	2	HS497 Senior Seminar in History	2
HS	300/400-Level History Elective	4	HS 300/400-Level History Elective	4
TE430	General Methods for Secondary Teachers	3	TE431 The Secondary Learner	3
TE440	Reading in the Content Area Minor	3	TE444 Social Studies Methods for Secondary Teachers	3
		<u>4</u>	Nat Sci Elective	4
		16		16
Graduate with bachelor's degree				
Fifth Year				
TE491	Internship in Teaching Diverse Learners I	6	TE492 Internship in Teaching Diverse Learners II	6
TE601	Professional Roles & Teaching Practice I	3	TE603 Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604 Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>		12

****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 in English, social sciences, natural sciences or mathematics beyond the general education and major requirements.**

Human Services

See College of Arts, Letters
and Social Sciences, page 246.

Program Description:

The human services major allows you 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 in either psychology or sociology. The other two are skill minors that 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 requirements must also be completed.

The acceptable skill minors are:

1. Child Development
2. Corrections
3. Counseling
4. Gerontology
5. Human Services Administration
6. Legal Assistant Studies
7. Native American Studies
8. Social Work
9. 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.

Students need 24 credits of 300-400 level courses across their three 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
- SO401 Sociological Research I

Career Descriptions:

Child Welfare Worker — works with children and families in areas of protective services. This can occur in a variety of local government and state agencies.

Case Manager — monitors services, assesses needs, coordinates with other agencies, refers clients to other agencies and provides like services to clients.

Administrator — is responsible for the delivery, resource development, goal setting, supervision of staff and general management of agencies or programs within agencies.

Adult Services Worker — provides for the social, legal, residential, medical and custodial needs of those adults who are impaired and unable to care for their own needs.

Substance Abuse Worker — provides needed services for persons suffering from a pathological abuse of a variety of chemical substances.

Elder Services Worker — helps to introduce to the elderly a number of programs focusing on their needs.

Corrections Worker — operates as parole/probation officer or works within secure correctional facilities to provide clients with methods of changing criminal behavior.

Bachelor of Science

Career Choices:

- Paraprofessional Worker
 - Child Welfare Worker
 - Case Manager
 - Administrator
 - Adult Services Worker
 - Substance Abuse Worker
 - Elder Services Worker
 - Corrections Workers
-

Student Profile:

- Do you...
 - have patience?
 - understand people in trouble?
 - want to be a good role model?

Because curriculums in the human services area vary with each student, please see your advisor to set up a schedule that meets your needs.

Individualized Studies

See any college dean

Bachelor of Arts

Bachelor of Science

Career Choices:

Your choice of career

Program Description:

The individual studies degree may be appropriate if you desire an unusually specialized program. The purpose of the degree is to provide you 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.

Career Description:

You plan your career and with the help of your advisor and dean, set up your program to meet your career goals.

Student Profile:

Do you ...

have a career choice in mind where a regular degree will not give you the background you need?

Guidelines for an individualized studies degree are:

1. Contact a dean or regional site director with a preliminary plan for degree development.
2. The dean or regional site director will identify possible faculty advisor/s or another dean to counsel you in degree planning.
3. The advisor/s will assist you in the development of the proposal. The proposal must include justification for specialization and a list of courses which meet the individualized studies degree requirement including:
 - a. general education requirements.
 - b. minimum of 124 credits and a minimum of 32 of the final 40 hours on campus or a minimum of 32 hours at a regional center.
 - c. 24 credits at 300/400 level in addition to general education requirements and a 2.00 cumulative GPA.
4. You need to contact the chairperson of the Individualized Studies Committee to schedule a committee meeting.
5. You will present the degree proposal to the committee for review. It is recommended that your advisor attend this meeting.
6. The committee will approve your original proposal, approve your proposal with recommended changes, or not approve your degree proposal.
7. You and your advisor will submit an approved Degree Audit Sheet to the 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.

Legal Assistant Studies

See College of Arts, Letters
and Social Sciences, page 246.

Program Description:

The legal assistant profession is one of the occupations projected to grow the fastest through the year 2010 according to the U.S. Department of Labor. A legal assistant (or paralegal) is a valued member of the legal team and works under the supervision of attorneys.

This program is designed to train qualified legal assistants capable of working in a variety of areas of the law and in a variety of work environments. Consequently, the role and job duties of a legal assistant vary depending on the areas of law and work environment in which a legal assistant is employed. Such diversity, varied challenges, and employment possibilities are what makes the legal assistant profession so interesting and rewarding.

There are four different degrees or offerings in legal assistant studies. They are as follows: (1) a four-year baccalaureate degree in legal assistant studies with an 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; (2) a two-year associate's degree in legal assistant studies; (3) a post-baccalaureate (one-year) certificate in legal assistant studies (which is available to students who already have a bachelor's degree in some other discipline and wish to make a career change or advancement); or (4) a minor in legal assistant studies which can complement various majors (and may also be helpful to students who are planning on attending law school). The requirements for these programs are based upon the guidelines of the National Association of Legal Assistants.

Career Descriptions*:

Litigation Legal Assistant — conducts legal, factual and computerized research; drafts legal pleadings and documents; interviews clients and witnesses; investigates, gathers and organizes case information; assists at trial.

Corporate Legal Assistant — drafts and/or analyzes various legal documents; attends meetings, negotiations or closings; performs legal and factual research; monitors compliance with applicable industry regulations; assists attorneys with preparation for collective bargaining, contract negotiations, administrative hearings or trials.

Criminal Law Legal Assistant — conducts comprehensive interviews of defendants, law enforcement, victims, and/or witnesses; performs case and field investigations; locates and coordinates usage of applicable experts; prepares motions, briefs or other legal documents; acts as a litigation assistant during trial and any appeal.

Governmental Legal Assistant — works as an immigration specialist; civil rights analyst; environmental protection specialist; mediation specialist; legislative analyst; workers compensation claims examiner, etc. (even the White House has employed legal assistants).

Real Estate Legal Assistant — conducts title searches; drafts real estate closing documents; monitors compliance with title, survey, disclosure and/or regulatory requirements; schedules and participates in real estate closings.

**Note: The above career descriptions are only a sampling of the numerous avenues available to legal assistants. See next page for additional employment listings.*

Bachelor of Science

Specialties in:

Legal Administration

Criminal Law

Personal Injury

Labor Law

**Legislative/
Constitutional Law**

Career Choices*:

Litigation Legal Assistant

Corporate Legal Assistant

Criminal Law Legal Assistant

Governmental Legal Assistant

Real Estate Legal Assistant

Student Profile:

Do you have...

an interest in the law?

a desire and commitment
to help others?

a good work ethic?

good verbal and written
communication skills?

detail orientation
and good organization skills?

a well-established set of ethics?

self-motivation, initiative
and a positive outlook?

good human relations skills?

an ability to think logically?

a willingness to learn new skills
and to be challenged?

Legal Assistant Studies

Legal Assistant Studies

Bachelor of Science

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 must elect a specialty area (see next page) or a minor as approved by the legal assistant studies coordinator.

Required Major Courses (58-60 credits)

BA254	Business Law I	3
BA255	Business Law II	3
CJ319	Substantive Criminal Law	3
CJ409	Procedural Criminal Law	3
LA102	Legal Research and Case Analysis	3
LA125	Civil Litigation and Procedure	4
LA140	Personal Injury Litigation and Investigative Techniques	3
LA150	Legal Assistant Profession and Ethical Considerations	3
LA202	Legal Writing and Analysis	3
LA250	Law Office Management, Systems and Technology	3
LA299	Legal Assistant Internship and Professional Development Seminar	6-8
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
PS467	Constitutional Law and Civil Liberties	4

General Education (36-39 credits)*

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
HU251	Humanities I	4
HU	Elective	3
	Social Science	6-8
	Social Science Diversity	3-4
	Natural Science	8

MA110 (or higher) Explorations in Math
or
PL205 Logic 3

Cognates - Required (6-7 credits)

OA119	Accounting Procedures****	4
CS101	Intro. to Microcomputer Appl.	3
DP160	Personal Computers Workstation Operating Systems	2-3
DP225	Word Processing Techniques	3
DP250	Desktop Publishing & Presentation Design	3

Legal Specialty or Minor (20+ credits) See next page.

Electives (8 credits or less)

Electives are to be chosen in consultation with advisor.

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	LA125	Civil Litigation & Procedure	4
LA102	Legal Research & Case Analysis	3	LA140	Personal Injury Litigation and Investigative Techniques	3
LA150	Legal Assistant Profession and Ethical Considerations	3	EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3		Social Science (Gen. Ed.)	3-4
OA119	Accounting Procedures	4		Computer Cognate	2-3
UN101	University Seminar	1			15-17
		17			
Second Year					
	Soc. Sci. Diversity	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		Natural Science (Gen. Ed.)	4
BA254	Business Law I	3		General Education Math	3-4
	Social Science (Gen. Ed.)	3-4			16-17
		17-18			
Third Year					
LA401	Evidence & Trial Practice	3	CJ409	Procedural Criminal Law	3
CJ319	Substantive Criminal Law	4		Natural Science (Gen. Ed.)	4
HU251	Humanities I	4		Specialty/Minor	6
LA	Specialty/Minor	4		Humanities Elective	3-4
	Elective	3			16-17
		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	6-8
	Elective or add'l. BS requirement	4		Specialty/Minor	3
		15		Elective or add'l. BS requirement	4
					16-18

Employment:

Legal assistants are employed with ...

- private law firms
- corporations
- financial institutions
- government (federal, tribal, state or local)
- courts and mediation systems
- real estate offices and title companies
- insurance companies
- special interest groups
- prosecutor or public defender offices
- educational institutions
- financial service organizations
- credit and collection agencies
- service, consulting or publishing companies

*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.

**See LA300, seminar in legal assistant studies; also consult with legal assistant advisor.

***AC132 may be substituted for OA119.

Legal Assistant Studies

Legal Assistant Studies Specialties

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
LA301	Alternative Dispute Resolution and Conflict Management	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology	3
SO101	Introduction to Sociology	3
SO103	Cultural Diversity	3
SO214	Criminology	3
SO338	Deviance	3

Labor Law Specialty

EC201	Principles of Macroeconomics or	3
EC202	Principles of Microeconomics	
LA301	Alternative Dispute Resolution and Conflict	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
PY228	Organizational Behavior	3
PY383	Industrial Psychology	3
SO313	Work and Organization	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
AC422	Federal Taxation Accounting II	3
BA226	Records Management	3
EC302	Managerial Economics	4
FN341	Managerial Finance	4
FN443	Insurance	4
LA301	Alternative Dispute Resolution and Conflict Management	3
MK281	Marketing Principles and Strategy	3
MK387	Advertising Theory and Practice	3
MN360	Principles of Management	3
MN365	Human Resource Management	3
MN461	Management Simulation	3
MN464	Organizational Behavior	3
PY228	Organizational Behavior	3
SD320	Public Relations	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 States History II	4
LA301	Alternative Dispute Resolution and Conflict and Management	3
LA305	Tribal Law and Government	3
PS130	Introduction 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

BL105	Function of the Human Body	4
BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4
CH104	Life Chemistry I	3
CH105	Life Chemistry II	4
FN443	Insurance	4
HE209	Pharmacology**	3
LA301	Alternative Dispute Resolution and Conflict Management	3
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

*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 and CH105.

Liberal Studies

See College of Arts, Letters
and Social Sciences, page 246.

Bachelor of Arts Bachelor of Science

Program and Career Description:

The liberal studies program is designed for those students who either desire a specific set of courses contained in particular minors or who are planning on attending graduate or professional school.

This program is quite rigorous in that there are a minimum number of upper division credits required as well as a senior capstone experience.

Thus, the graduates of this program will have a firm grounding in the liberal arts as well as the requisite communication skills necessary for success in today's world.

Guidelines:

Once a student decides on this major:

1. The student contacts the liberal studies degree director.
2. Student and director agree on choice of minors.
 - a. If needed, director consults with faculty in the discipline.
 - b. If needed, director consults with the Liberal Studies Degree Committee.
3. Student and director discuss core requirements, general education requirements, BA/BS requirements and elective choices.
4. Student and director discuss other requirements; i.e., upper division minimum requirements.
5. Student is given an educational plan including a Degree Audit Sheet.
6. If necessary, student makes formal request to change major.
 - a. Advisor(s) assigned after consultation
7. Student matriculates.
8. Student meets with liberal studies director spring of junior year to set up senior capstone experience (ID490). Subsequent meeting with advisor(s).
9. In senior year, student returns to liberal studies director for final review and signature.

Major Requirements

Minimum of 60 credits must be completed which include two academic minors having no more than two courses in common.

Additional Major Requirements:

PL	Elective	
SO103	Cultural Diversity	3
ID490	Senior Directed Study	3

A minimum of 24 of these 60 credits must be at the 300/400 level.

General Education

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3

Humanities (7-8 credits)

HU251	Humanities I	4
HU	Elective	

Mathematics (3-5 credits)

MA110 (or higher)	Exploration in Math	3
PL205	Logic	

Natural Science (8 credits)

Social Science (6-8 credits) from different disciplines

Social Science (diversity; 3-4 credits)

<i>Bachelor of Science</i>		
Social Science or Natural Science or Mathematics		8

<i>Bachelor of Arts</i>		
Foreign Language		8

Electives to total 124 credits

Manufacturing Engineering Technology

See College of Engineering and Mathematics, page 268.

Program Description:

Manufacturing engineering technology (MfgET) is a multi-disciplinary field that integrates knowledge from areas of study such as science, math, computers, mechanical engineering, electronics engineering, management and economics. MfgET is a profession that gives you the expertise to develop tools, processes, machines and equipment to make quality products at a reasonable cost. The profession also involves working with and coordination of people from several other fields.

In addition to providing a strong background in the fundamentals of manufacturing engineering technology, the program places an emphasis in the application of computer systems to modern manufacturing. This includes topics such as robotics, computer-aided design (CAD), programmable logic controllers (PLC), and computer-aided manufacturing (CAM). The classes and labs in the curriculum average about 15 students and are taught by faculty who are dedicated to undergraduate teaching excellence.

Students pursuing the B.S. degree in manufacturing at LSSU have the option to specialize in robotics and automation. LSSU is one of only two universities in the U.S. to offer the robotics specialization in the ABET-accredited manufacturing engineering technology B.S. degree.

A scientific "high technology" basis in the field of manufacturing engineering technology is evolving. The MfgET program is designed to place LSSU graduates at the leading edge of this evolution.

Career Description:

Whether it be a single gear or a complete automobile engine, the complete set of events that results in a finished product is planned and implemented by a manufacturing engineer. Once you graduate from LSSU, you will have many manufacturing career choices ranging from applied technical research to management of systems and personnel. Typical graduates have obtained engineering and technology positions in design of automated manufacturing systems, computer-aided design and manufacturing, quality control, robotics applications, automotive component manufacturing, design of manufacturing processes and equipment, maintenance, sales and management of manufacturing systems. Some graduates have also transferred to graduate schools to pursue master's and doctoral degrees.

Cooperative Education:

Opportunities are available as part of this program for students who are academically qualified. A certificate that documents this practical training is available.

Bachelor of Science

Options:

General

Robotics and Automation

Career Choices

Process Control Engineer
Robotics Engineer
Maintenance Technologist
Project Manager
Systems Engineer
Service Engineer
Manufacturing Engineer
Sales Engineer
Consultant Engineer
Production Technologist
Automation Engineer
Applications Engineer

Student Profile:

Do you have ...

an interest in math, computers and science?

a desire to learn how manufacturing processes are designed and implemented?

a good work ethic?

a strong motivation to learn and succeed in life?

Bachelor's Degrees

Manufacturing Engineering Technology

Manufacturing Engineering Technology Bachelor of Science

Departmental Requirements:

MigET B.S. degree - general option
departmental requirements (105 credits)

Mathematics (13 credits)

MA140	Precalculus Mathematics	5
MA143	Calculus for Engineering I	4
MA207	Principles of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1

Science (9 credits)

CH115	General Chemistry I	5
PH221	Elements of Physics	4

Engineering Technology (55 credits)

EE125	Digital Fundamentals	4
EG101	Introduction to Engineering	2
EG491	Engineering Design Project I	3
EG495	Engineering Design Project II	3
ET110	Applied Electricity	4
ET175	Applied Electronics	4
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME141	Parametric Modeling	2
ME142	Descriptive Geometry	2
ME275	Engineering Materials	3
MT215	Design for Manufacturing	4
MT225	Statics & Strength of Materials	3
MT315	CNC Manufacturing Processes	3
RS280	Robotics Technology	2
RS281	Robotics Technology Lab	1
RS365	Programmable Logic Controllers	3
RS480	Control Systems & Automation	3
RS481	Control Systems & Automation Lab	1
TC110	Industrial Safety	2

Support Courses (28 credits)

CS101	Intro. to Microcomputer Applications	3
EC302	Managerial Economics	4
EG265	"C" Programming	3
MN360	Principles of Management	3
	Cooperative Education	2
	Math/Science Elective	3
	Technical Electives	7
	Free Electives	3

Your degree options:

You may choose to follow one of the following degree options while studying manufacturing engineering technology at LSSU. They are the *general option* or the *robotics and automation option*. In the *general option*, you will be given a solid foundation in the fundamentals of engineering technology and manufacturing. Thereafter, you will have the ability to choose the specific courses of study for the courses noted as either free electives or technical electives in the curriculum. In the *robotics and automation option*, you will complete specified courses in place of the elective courses noted in the curriculum. The specified courses provide you with a strong background in robotics, machine vision, sensors and automation. Only LSSU and

FALL		SPRING	
First Year			
MA092	Intermediate Algebra (4) ¹	ME115	Manufacturing Processes II 3
	or	EN111	First-Year Composition II 3
	Social Science Elective 3	MA140	Precalculus Mathematics 5
ME110	Manufacturing Processes I 3	MA207	Prin. of Statistical Methods 3
ME141	Parametric Modeling 2	CS101	Intro. to Microcomputer Applications 3
ME142	Descriptive Geometry 2		17
EN110	First-Year Composition I 3		
EG101	Introduction to Engineering 2		
	15-16		
Second Year			
PH221	Elements of Physics I 4	MT225	Statics & Strength of Materials 3
CH115	General Chemistry I 5	ME275	Engineering Materials 3
ET110	Applied Electricity 4	SD101	Fund. of Speech Communication 3
MA208	Statistical Applications for Quality Control ² 1	ET175	Applied Electronics 4
RS280	Robotics Technology 2	EE125	Digital Fundamentals 4
RS281	Robotics Technology Lab 1		17
	17		
Total credits required for associate's degree = 66			
Third Year			
MA143	Calculus for Engineering I 4	MT215	Design for Manufacturing 4
MT315	CNC Manufacturing Processes 3	RS365	Programmable Logic Controllers 3
EG265	"C" Programming 3	EC302	Managerial Economics ² 4
TC110	Industrial Safety 2		Technical Elective ³ 3
MN360	Principles of Management 3		Humanities Elective 3
	15		17
Summer			
Cooperative Education ⁴ - 2 credits			
Fourth Year			
EG491	Engineering Design Project I 3	EG495	Engineering Design Project II 3
RS480	Control Systems & Automation 3		Social Science Diversity Elective 4
RS481	Control Systems & Automation Lab 1	HU251	Humanities I 3
	Math/Science Elective ³ 3		Free Elective ³ 3
	Technical Elective ³ 4		13
	14		
Total credits required to complete BS degree = 127 for general option (126 for robotics and automation option)			
¹ Students placed in MA092 should take the social science elective in a summer or later semester.			
² These courses may be offered only every other year.			
³ For Robotics and Automation Option: MA144 Calculus for Engineering II (4 credits), EG140 Numerical Applications for Engineers (1 credit), CS105 Introduction to Computer Programming (3 credits) and RS430 Systems Integration and Machine Vision (4 credits) are required in place of the electives noted.			
⁴ For General Option: ME240 Solids Modeling and Animation (3 credits), EE250 Microcontroller Fundamentals (4 credits), EG310 Advanced Quality Engineering (4 credits) ² or MN471 Production/Operations Management (3 credits) ² are suggested technical electives. EV313 Solid and Hazardous Waste (3 credits) ² or NS103/104 Environmental Science (4 credits) is suggested for the math/science elective. Any University credit course can be taken for the free elective.			
⁵ If co-op education opportunity is unavailable, a technical elective approved by department chair may be substituted.			

one other major university in the USA offer you this option to specialize in robotics and automation in the manufacturing program. LSSU is home to one of the best robotics educational facilities in North America. Graduates with this emphasis have had nearly 100 percent job placement with high and competitive starting salaries. Your emphasis of study in this option will be identified on your transcripts.

Mathematics

See College of Engineering and Mathematics, page 268.

Program Description:

Mathematics:

Many who major in the field of mathematics combine those studies with education courses and obtain employment as teachers. People with mathematics degrees are found in a broad range of occupations where quantitative skills are needed; one of the largest employers of mathematics is the National Security Agency. Often a minor field of study (such as computer science) provides the supporting credential for entry-level jobs.

Actuarial and Business Applications:

The actuarial and business applications option combines mathematical knowledge with quantitative business applications. The result is a very marketable degree that provides many exciting career opportunities for graduates. 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 choosing this emphasis will complete a minor in accounting-finance.

Teaching degrees — a completion of a fifth-year internship and graduate course work qualifies you for elementary or secondary teacher certification in Michigan and Ontario, as well as reciprocity with several other states.

Graduate school — an undergraduate mathematics major with emphasis on abstraction, together with an analytical approach to problem solving, continues to provide strong preparation for graduate work in diverse fields — especially when combined with a minor in the related field.

Career Descriptions:

Operations Research Analyst — helps organizations operate as efficiently as possible through the application of mathematical principles to organizational problems.

Statistician — government agencies such as the Bureau of Labor employ statisticians to monitor the consumer price index, employment statistics and the like. Industries use statisticians in their efforts to forecast future needs, to implement quality control, and to design information-gathering strategies.

Research Assistant — mathematicians are sometimes needed as members of a multi-discipline research team, responsible for creating a mathematical model of a real-world process or context, which then is used to help solve problems of interest to the team's efforts.

Actuary — assembles and analyzes statistics to calculate probabilities of sickness, death, injury, disability, retirement, property loss and unemployment for insurance companies.

School Administrator or Counselor — a valid teaching certificate and teaching experience are prerequisites. Further course work and separate certification are also required.

Educational Consultant or Trainer — trains personnel in industry on new procedures and/or equipment needed.

Bachelor of Science

Mathematics

Mathematics — Actuarial and Business Applications

Elementary Teaching

Secondary Teaching

Career Choices

Actuary

Operations Research Analyst

Statistician

Research Scientist

Elementary/Secondary Teacher

School Administrator/Counselor

Educational Consultant or Trainer

Student Profile:

Do you ...

have intellectual curiosity?

enjoy the challenge of
problem-solving?

like to explore quantitative
problems in the world of business?

have proficient skills in spoken
and written communication?

have proficient skills in reading,
mathematics, science and
liberal arts?

Mathematics

Mathematics

Bachelor of Science

Departmental Requirements: (55 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	Linear Algebra	3
MA308	Probability and Mathematical Statistics	3
MA309	Applied Statistics	4
MA310	Differential Equations	3
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

CS103	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3
CS121	Principles of Programming	3

Other Requirements (4 credits)
PH231 Applied Physics for Engineers and Scientists I 4

General Education (29-33 credits)

Free Electives or Academic Minor (32-36 credits)

Total Credits: 124

Free elective and general education requirements must be completed so that at least 124 semester credits have been earned.

FALL		SPRING			
First Year					
MA151	Calculus I	4	MA152	Calculus II	4
CS103	Survey of Computer Science		CS105	Intro. to Computer Programming	3
	or	3		or	
CS105	Intro. to Computer Programming		CS121	Principles of Programming	3
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
PY101	Introduction to Psychology	4	SO103	Cultural Diversity	3
	Social Science Elective	<u>3</u>		Elective	<u>3</u>
		17			16
Second Year					
MA215	Fund. Concepts of Mathematics	3	MA216	Discrete Mathematics and Problem Solving	3
MA251	Calculus III	4	MA310	Differential Equations	3
SD101	Fund. of Speech Communication	3	MA310	Science Elective	4
PH231	Applied Physics for Engineers and Scientists I	<u>4</u>	MA310	Social Science elective	3-4
		14		Elective	<u>3</u>
					16-17
Third Year					
MA261	Numerical Methods	3	MA308	Probability and Mathematical Statistics	3
MA305	Linear Algebra		MA341	Abstract Algebra	3
	or	3		or	
MA401	Mathematical Modeling		MA351	Graph Theory	4
HU251	Humanities I	4	HU252	Humanities II	4
	Electives	<u>6</u>		Electives	<u>6</u>
		16			16
Fourth Year					
MA309	Applied Statistics	4	MA411	Advanced Calculus	3
MA305	Linear Algebra		MA341	Abstract Algebra	3
	or	3		or	
MA401	Mathematical Modeling		MA351	Graph Theory	3
	Electives	<u>9</u>	MA490	Senior Math Seminar	<u>6</u>
		16		Electives	15

Bachelor's Degrees

Mathematics

Mathematics

Actuarial and Business Applications Bachelor of Science

Departmental Requirements: (52 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
MA305	Linear Algebra	3
MA308	Probability and Mathematical Statistics	3
MA309	Applied Statistics	4
MA310	Differential Equations	3
MA341	Abstract Algebra I	3
MA351	Graph Theory	3
MA401	Mathematical Modeling	3
MA411	Advanced Calculus	3
MA490	Research Topics in Mathematics	3
<i>Choose any two (2) of the following</i>		6
CS103	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3
CS121	Principles of Programming	3

Other Requirements (7 credits)

EC201	Principles of Macroeconomics	3
FN341	Managerial Finance	4

A student choosing this emphasis will complete a minor in accounting-finance (24 credits).

General Education (33-37 credits)

Free Electives (11-15 credits)

Total Credits 124

Elective credits and general education requirements must be completed so that at least 124 semester credits have been earned.

FALL		SPRING			
First Year					
MA151	Calculus I	4	MA152	Calculus II	4
CS103	Survey of Computer Science	3	CS105	Intro. to Computer Programming	3
	<i>or</i>			<i>or</i>	
CS105	Intro. to Computer Programming	3	CS121	Principles of Programming	3
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
AC132	Principles of Accounting I	4	AC133	Principles of Accounting II	4
	Social Science Elective	3	EC201	Prin. of Macroeconomics	3
		<u>17</u>			<u>17</u>
Second Year					
MA215	Fund. Concepts of Mathematics	3	MA216	Discrete Mathematics and Problem Solving	3
MA251	Calculus III	4	MA310	Differential Equations	3
BA254	Business Law I	3	EC202	Prin. of Microeconomics	3
SD101	Fund. of Speech Communication	3		Science Elective	4
	Science Elective	4		Social Science Diversity Elective	3-4
		<u>17</u>			<u>16-17</u>
Third Year					
	Elective	3	MA308	Probability and Mathematical Statistics	3
MA305	Linear Algebra	3	MA411	Advanced Calculus	3
	<i>or</i>		MA341	Abstract Algebra	3
MA401	Mathematical Modeling	3		<i>or</i>	
AC332	Cost Accounting I	3	MA351	Graph Theory	4
HU251	Humanities I	4	FN341	Managerial Finance	4
	Electives	3	HU252	Humanities II	4
		<u>16</u>		Elective	3
Fourth Year					
MA309	Applied Statistics	4	MA411	Advanced Calculus	3
MA305	Linear Algebra	3	MA341	Abstract Algebra	3
	<i>or</i>			<i>or</i>	
MA401	Mathematical Modeling	3	MA351	Graph Theory	3
FN448	Investment Strategies	4	MA490	Senior Math Seminar	3
	Electives	6	FN443	Insurance	3
		<u>17</u>		Electives	3
					<u>15</u>

Bachelor's Degrees

Mathematics

Mathematics Elementary Teaching Bachelor of Science

In this program, you will complete a teaching major in mathematics and a planned program in the other three academic areas essential to elementary school teaching: language arts, natural science and social science. The planned program is explained in the School of Education section of this catalog.

The program also includes general education requirements and a 10-credit professional education component and a 15-credit elementary component. Students take the first two teacher education courses (TE150 and TE250) and then apply for formal admission to the Teacher Education Program.

You earn a bachelor's degree, and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

Degree Requirements:

Mathematics Requirements (37 hours)

CS103	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3
MA103	Number Systems and Problem Solving	4
MA104	Geometry & Measurement	4
MA151	Calculus I	4
MA152	Calculus II	4
MA215	Fundamental Concepts of Math	3
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	3
	or	
MA207	Principles of Statistical Methods	3
MA321	History of Mathematics	3
MA325	College Geometry	3

Professional Education Sequence (10 credits)

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Learning Theory and Teaching Practice	4

Elementary Education Sequence (15 credits)

TE330	Reading in the Elementary Classroom	3
TE410	Corrective Reading in the Classroom	3
TE411	Elementary Language Arts and Methods	3
TE420	Math Methods for Elementary Teachers	2
TE421	Science Methods for Elementary Teachers	2
TE422	Social Science Methods for Elementary Teachers	2

The remainder of the 124 credits for graduation are gained through the general education requirements and electives.

FALL		SPRING			
First Year					
MA151	Calculus I	4	MA152	Calculus II	4
CS103	Survey of Computer Science	3	CS105	Intro. to Computer Programming	3
EN110	First-Year Composition I	3	SD101	Fund. of Speech Communication	3
HS101	History of World Civilization I	4	HS102	History of World Civilization II	4
TE150	Reflections on Learning and Teaching	3	EN111	First-Year Composition II	3
		<u>17</u>			<u>17</u>
Second Year					
MA103	Number Systems & Problem Solving	4	MA104	Geometry and Measurement	4
MA215	Fundamental Concepts of Math Elective	3	EN235	Survey of Native Literature of North America	3
TE250	Student Diversity and Schools	3		or	3
PS110	Intro. to American Government and Politics	4	EN236	Literature and Culture	3
		<u>17</u>	PY265	Child & Adolescent Development Elective	3
			NS110	Chemistry in Society	4
					<u>17</u>
Third Year					
MA321	History of Mathematics	3	MA325	College Geometry	3
	or			or	
MA308	Probability and Mathematical Statistics	3	TE301	Learning Theory and Teaching Practice	4
MA305	Linear Algebra	3	NS101	Conceptual Physics	4
	or		HU252	Humanities II	4
HU251	Humanities I	4	BL107	General Biology	3
NS102	Introduction to Geology	4			<u>18</u>
EN335	Children's Lit. in the Classroom	3			
		<u>17</u>			
Fourth Year					
MA321	History of Mathematics	3	MA325	College Geometry	3
	or			or	
MA308	Probability and Mathematical Statistics	3	MA341	Abstract Algebra	3
MA305	Linear Algebra	3		or	3
	or			Elective (minor)	3
TE330	Reading in the Elementary Classroom	3	TE410	Corrective Reading in the Classroom	3
TE411	Elementary Language Arts and Methods Across the Curriculum	3	TE421	Science Methods for Elementary Teachers	2
TE420	Math Methods for Elementary Teachers	2	TE422	Social Studies Methods for Elementary Teachers	2
	Elective	3	GG201	World Regional Geography	4
		<u>17</u>			<u>17</u>
Fifth Year					
TE491	Internship in Teaching Diverse Learners I	6	TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3	TE603	Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>			<u>12</u>
Fifth-Year Internship for Teacher Certification					
TE491	Internship in Teaching Diverse Learners I	6			
TE492	Internship in Teaching Diverse Learners II	6			
TE601	Professional Roles and Teaching Practice I	3			
TE602	Reflection and Inquiry in Teaching Practice I	3			
TE603	Professional Roles and Teaching Practice II	3			
TE604	Reflection and Inquiry in Teaching Practice II	3			

Mathematics Secondary Teaching Bachelor of Science

In this program, you will complete a major in mathematics tailored to the needs of a secondary teacher and a minor in a "teachable field." Computer science courses are included and during your methods classes, you will work extensively with computer and calculator technology as it applies to classroom teaching.

This program also includes general education requirements, a 10-credit professional education component and a 12-credit secondary component. Students take the first two teacher education courses (TE150 and TE250) and then apply for formal admission to the Teacher Education Program.

You earn a bachelor's degree and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

Degree Requirements:

Mathematics Requirements (42 hours)

CS105	Intro. to Computer Programming	3
	<i>or</i>	
CS121	Prin. of Computer Programming	3
MA151	Calculus I	4
MA152	Calculus II	4
MA215	Fundamental Concepts of Math	3
MA216	Discrete Mathematics and Problem Solving	3
MA251	Calculus III	4
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	3
MA310	Differential Equations	3
MA321	History of Mathematics	3
MA325	College Geometry	3
MA341	Abstract Algebra I	3
MA401	Mathematical Modeling	3

Teaching Minor (21-22 credits)

Professional Education Sequence 22

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Learning Theory and Teaching Practice	4
TE430	General Methods for Secondary Teachers	3
TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3
TE442	Math Methods for Secondary Teachers	3

Fifth-Year Internship for Teacher Certification (24 credits)

TE491	Internship in Teaching Diverse Learners I	6
TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3
TE602	Reflection and Inquiry in Teaching Practice I	3
TE603	Professional Roles and Teaching Practice II	3

FALL			SPRING		
First Year					
MA151	Calculus I	4	MA152	Calculus II	4
CS103	Survey of Computer Science	3	CS105	Intro. to Computer Programming	3
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
TE150	Reflections on Learning and Teaching	3		Social Science Elective	3-4
	Social Science Elective	3-4		Elective (minor)	3
		16-17			16-17
Second Year					
MA215	Fundamental Concepts of Math	3	MA216	Discrete Mathematics and Problem Solving	3
MA251	Calculus III	4	MA310	Differential Equations	3
SD101	Fund. of Speech Communication	3		Natural Science Elective	4
TE250	Student Diversity and Schools	3	EN232	American Literature II	3
	Natural Science Elective	4		Elective (minor)	3
		17			16
Third Year					
MA321	History of Mathematics	3	MA325	College Geometry	3
	<i>or</i>			<i>or</i>	
MA308	Probability and Mathematical Statistics	3		Elective (minor)	3
MA305	Linear Algebra	3	MA341	Abstract Algebra	3
	<i>or</i>			<i>or</i>	
MA401	Mathematical Modeling	3		Elective (minor)	3
HU251	Humanities I	4	HU252	Humanities II	4
	Elective (minor)	3	TE301	Learning Theory and Teaching Practice	4
	Elective (minor)	3		Elective (minor)	3
		16			17
Fourth Year					
MA321	History of Mathematics	3	MA325	College Geometry	3
	<i>or</i>			<i>or</i>	
MA308	Probability and Mathematical Statistics	4		Elective (minor)	3
MA305	Linear Algebra	3	MA341	Abstract Algebra	3
	<i>or</i>			<i>or</i>	
TE430	General Methods for Secondary Teachers	3		Elective (minor)	3
TE440	Reading in the Content Area	3	TE431	The Secondary Learner	3
	Elective (minor)	3	TE442	Mathematical Methods for Secondary Teachers	3
		15		Elective (minor)	3
					15
Fifth Year					
TE491	Internship in Teaching Diverse Learners I	6	TE492	Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3	TE603	Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		12			12

*Students take either CH115/116 or PH231/232.

TE604	Reflection and Inquiry in Teaching Practice II	3
General Education (30-34 credits)		
Total Credits:		124

The remainder of the 124 credits for graduation are gained through the general education

requirements and electives.

A post-baccalaureate fifth-year internship and associated graduate-level classes are required for LSSU recommendation for teacher certification.

Mechanical Engineering

See College of Engineering
and Mathematics, page 268.

Bachelor of Science
Chemistry and
Environment
Mechanical Design
Robotics and
Automation

Career Choices:

Design Engineer
Systems Engineer
Plant Engineer
Maintenance Engineer
Process Engineer
Product Engineer
Project Engineer
Sales Engineer
Research Engineer
Development Engineer
Manufacturing Engineer

Bachelor's Degrees

Student Profile:

Do you ...

like problem solving?

like applying theories
in laboratories?

like working with mechanical
systems?

Program Description:

Mechanical engineering is a broad-based program that prepares you for a rewarding career in mechanical and related engineering fields. Course work for this ABET-accredited program includes 71 hours in technical specialties, 32 hours in math and sciences and 26 hours in general education for a total of 129 hours in the bachelor of science degree. You will work with mechanical systems in the laboratories and receive an excellent mix of theory and application.

Program Highlights:

- Emphasis is on preparing you to solve real-world engineering problems.
- You will participate in multidisciplinary, industrial or research-based senior engineering design projects which emphasize teamwork, communications, project management, customer relations and ethics.
- You will learn numerous software packages for CAD, CAM, finite element analysis, programmable logic controllers, robots and technical analysis.
- Cooperative education opportunities are available.

Degree Options — You may choose a *design option*, *robotics and automation option* or *chemistry and environmental option* while studying mechanical engineering. The *design option* will give you skills through courses in finite element methods, vibrations, advanced machine design and programmable logic controllers. The *robotics and automation option* will give you skills through courses in machine vision, system integration, automated manufacturing and robotics. The *chemistry and environmental option* will give you skills through courses in general, organic and environmental chemistry and environmental law.

Career Description:

Once you graduate with a mechanical engineering degree, you will have a wide variety of career choices with small and large companies. Typical graduates obtain engineering positions in manufacturing, product and/or process design, product and/or process development, research, maintenance and sales.

Cooperative Education:

Opportunities are available as part of this program for students who are academically qualified. A certificate that documents this practical training is available.

Mechanical Engineering

Mechanical Engineering Bachelor of Science

Departmental Requirements (103 credits)

Mathematics

EG345	Probability and Mathematical Statistics	3
MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA243	Calculus and Linear Algebra for Engineers	4
MA310	Differential Equations	3

Computer Science

EG265	"C" Programming	3
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Sciences

CH115	General Chemistry I	5
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
EG101	Introduction to Engineering	2
EG140	Numerical Applications for Engineers	1
EG340	Advanced Numerical Applications for Engineers	1
EG491	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
ME141	Parametric Modeling	2
ME142	Descriptive Geometry I	2
ME225	Strength of Materials	3
ME275	Engineering Materials	3
ME350	Machine Design I	4
ME355	Thermal and Fluids Engineering I	5
ME450	Thermal and Fluids Engineering II	5
RS460	Control Systems	4

General Education

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HU251	Humanities I	4
	Humanities	3
	Social Science	6
	Social Science Diversity	3
SD101	Fund. of Speech Communication	3

FALL		SPRING			
First Year					
MA143	Calculus for Engineering I	4	MA144	Calculus for Engineering II	4
ME141	Parametric Modeling	2	EG140	Numerical Applications for Engineers	1
ME142	Descriptive Geometry I	2	CH115	General Chemistry I	5
ME110	Manufacturing Processes I	3	ME115	Manufacturing Processes II	3
EG101	Introduction to Engineering	2	EN111	First-Year Composition II	3
EN110	First-Year Composition I	3			16
		16			
Second Year					
MA243	Calculus & Linear Algebra for Engineers	4	EG345	Probability and Mathematical Statistics	3
PH231	Applied Physics for Engineers and Scientists I	4	PH232	Applied Physics for Engineers and Scientists II	4
EG265	"C" Programming	3	ME225	Strength of Materials	4
EM220	Statics	3	ME275	Engineering Materials	3
	Soc. Sci. Elective	3	SD101	Fund. of Speech Communication	3
		17			17
Third Year					
MA310	Differential Equations	3	ME355	Thermal and Fluids Engineering I	5
EG340	Advanced Numerical Applications for Engineers	1	EE305	Analog and Digital Electronics	3
EM320	Dynamics	4		Engineering Elective	3
ME350	Machine Design I	4	HU251	Humanities I	4
EE210	Circuits and Machines	4			15
		16			
Fourth Year					
EG491	Engineering Design Project I	3	EG495	Engineering Design Project II	3
	Engineering Elective	4		Engineering Elective	4
ME450	Thermal and Fluids Engineering II	5		Social Science Diversity	3
RS460	Control Systems	4		Humanities	3
		16		Social Science	3
					16

Chemistry and Environmental Electives

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH220	Survey of Organic Chemistry	4
CH341	Environmental Chemistry I: Water and Water Pollution Control	4
EV425	Environment Systems Analysis	3
EV311	Environment Law	3
	or	
EV313	Solid and Hazardous Waste	3
	or	
CH232*	Instrumental Analysis	4
CH361	Physical Chemistry I	4

*Selection of CH232 will lead to a chemistry minor.

Mechanical Design Required Tech Electives

ME442	Finite Element Analysis	4
RS365	Programmable Logic Controllers	3
	and	
ME425	Vibration	4
	or	
ME455	Machine Design II	4

Robotics and Automation Required Tech Electives

RS430	Systems Integration & Machine Vision	4
RS385	Robotics Engineering	3
RS435	Automated Manufacturing Systems	4

Suggested Optional Course

ME240	Assembly Modeling	3
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Bachelor's Degrees

Nursing

See College of Natural and Health Sciences, page 281.

**Bachelor of Science
Pre-Licensure Program
Post-Licensure
Completion Program**

Career Choices:

Hospital Nursing
Home Care Nursing
School Nursing
Public Health Nursing

Student Profile:

Do you....

like science, art and humanity?
want to help people?
work well with people?
like flexibility and change?

Program Description:

Professional nursing blends a unique body of knowledge from the sciences, social sciences and humanities with a compassionate heart and a sensitive spirit to provide holistic care to those in need.

The Department of Nursing offers two curricular tracks to the bachelor of science degree in nursing; the four-year, pre-licensure program and the two-year, completion program for the registered nurse. The programs provide you with the opportunity to acquire knowledge, values and skills necessary for the practice of professional nursing.

Course requirements provide liberal backgrounds in physical science, social science and humanities. This curriculum provides a solid basis for the variety of roles in nursing practice. The nursing curriculum provides an interdisciplinary major and therefore does not require a minor to meet graduation requirements. This nursing program is approved by the Michigan Board of nursing and is accredited by the National League for Nursing Accrediting Commission.*

**National League for Nursing Accrediting Commission, 61 Broadway, New York, NY 10006. Telephone: 212-363-5555.*

Career Descriptions:

Hospital Nurse — provides holistic nursing care to clients of all ages in a hospital setting.

Home Care Nurse — works with clients in their own homes to assist them to optimal wellness.

School Nurse — works with administrators, teachers and parents to safeguard the health of school-age children.

Public Health Nurse — works with and in the community to promote and maintain the health of the local population.

Nursing Pre-Licensure Program

Curriculum: Health care is moving to a more community-based system. To prepare nurses for this change, the nursing curriculum has recently been revised; students admitted to the University fall 2000 or later will complete the following curriculum for a bachelor of science in nursing:

Nursing	(60 credits)
NU211 Intro. to Professional Nursing	3
NU212 Health Appraisal	4
NU213 Fundamentals of Nursing	6
NU325 Nursing of Childbearing Families	5
NU326 Nursing of Children & Families	6
NU327 Adult Nursing I	9
NU431 Adult Nursing II	8
NU432 Nursing of Populations	5
NU433 Community Mental Health Nursing	5
NU434 Nursing Research	3
NU435 Management in Nursing	4
NU436 Nursing Issues	2
Health Sciences	(17 credits)
HE207 Nutrition Application in Health Care	1
HE208 Nutrition	2
HE209 Pharmacology	3
HE232 Pathophysiology	3
HE235 Computer Applications in Health Sciences	2
HE328 Multicultural Approaches to Health Care	3
HE352 Health Issues of Aging Populations	3
Other Disciplines	(13 credits)
BL121 Human Anatomy & Physiology I	4
BL223 Clinical Microbiology	3
CH104 Life Chemistry I	3
MA207 Principles of Statistical Methods	3
General Education	(34-35 credits)
BL122 Human Anatomy & Physiology II	4
CH105 Life Chemistry II	4
EN110 First-Year Composition I	3
EN111 First-Year Composition II	3
HU251 Humanities I	4
Humanities Elective	3-4
PY101 Introduction to Psychology	4
PY155 Lifespan Development	3
SO101 Introduction to Sociology	3
SD101 Fund. of Speech Communication	3
General Electives	(3 credits)
Total Credits	127

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	CH104 Life Chemistry I	3
PY101	Introduction to Psychology	4	BL122 Human Anatomy & Physiology II	4
SO101	Introduction to Sociology	3	PY155 Lifespan Development	3
SD101	Fund. of Speech Communication	3	EN111 First-Year Composition II	3
BL121	Human Anatomy & Physiology I	4	Elective	3
		<u>17</u>		<u>16</u>
Second Year				
HE208	Nutrition	2	BL223 Clinical Microbiology	3
HE207	Nutrition Application in Health Care	1	NU213 Fundamentals of Nursing Practice	6
NU211	Intro. to Professional Nursing	3	HE209 Pharmacology	3
CH105	Life Chemistry II	3	HE328 Multicultural Approach to Health Care	3
NU212	Health Appraisal	4	HE235 Computer Appl. in Health Science	2
HE232	Pathophysiology	4		<u>17</u>
		<u>17</u>		
Third Year				
HE352	Health Issues of Aging Population	3	NU325 Parent/Newborn Nursing	5
MA207	Prin. of Statistical Methods	3	NU326 Parent/Childhood Nursing	6
NU327	Adult Nursing I	9	HU251 Humanities I	4
		<u>15</u>		<u>15</u>
NU431	Adult Nursing II	8	NU432 Nursing of Populations	5
NU435	Nursing Management	4	NU433 Community Mental Health Nursing	5
NU436	Contemporary Issues in Nursing	2	NU434 Nursing Research	3
		<u>14</u>	Humanities Elective	3-4
				<u>16-17</u>

The planned sequence of courses may be modified to meet the needs of individual students.

Nursing

Nursing Post-Licensure Completion Program

Prerequisite Courses for Entrance to Program:

BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4
BL223	Clinical Microbiology	3
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
HE207	Nutrition Application in Health Care	1
HE208	Nutrition	2
HE209	Pharmacology	3
PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	3
		30

NU325	Parent/Newborn Nursing	5
NU326	Parent/Child Nursing	6
NU327	Adult Nursing I	9
NU431	Adult Nursing II	8
NU433	Community Mental Health Nursing	5
		32

Requirements for the bachelor of science degree in nursing (RN completion program) are as follows:

Nursing	(59 credits)	
NU325	Parent/Newborn Nursing	5
NU326	Parent/Child Nursing	6
NU327	Adult Nursing I	9
NU360	Professional Nursing Concepts	4
NU363	Comprehensive Health Appraisal	3
NU365	Family Nursing Theory	3
NU431	Adult Nursing II	8
NU432	Nursing of Populations	5
NU433	Community Mental Health Nursing	5
NU434	Nursing Research	3
NU435	Management in Nursing	4
NU436	Contemporary Issues in Nursing	2
NU437	Professional Nursing Leadership	2

Health Sciences	(17 credits)	
HE207	Nutrition Application in Health Care*	1
HE208	Nutrition*	2
HE209	Pharmacology*	3
HE232	Pathophysiology**	3
HE235	Computer Applications in Health Sciences	2
HE328	Multicultural Approach to Health Care	3
HE352	Health Issues of Aging Populations	3

Other Disciplines	(13 credits)	
BL121	Human Anatomy & Physiology I	4
BL223	Clinical Microbiology	3
CH104	Life Chemistry I	3
MA207	Principles of Statistical Methods	3

FALL		SPRING			
First Year					
NU360	Professional Nursing Concepts	4	NU363	Comprehensive Health Appraisal	3
HE235	Computer Applications in Nursing	2	HE232	Pathophysiology	3
HU251	Humanities I	4	CH104	Life Chemistry I	3
SD101	Fund. of Speech Communication	3	HE328	Multicultural Approach to Health Care	3
HE352	Health Issues of Aging Populations	3			15
		16			
Second Year					
CH105	Life Chemistry II	4	NU434	Nursing Research	3
NU365	Family Nursing Theory	3	NU435	Nursing Management	4
MA207	Principles of Statistical Methods	3	NU437	Professional Nursing Leadership	2
NU432	Nursing of Populations	5		Humanities Elective	4
NU436	Contemporary Nursing Issues	2		Elective	3
		17			16

General Education (32 credits)

PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	3
BL122	Human Anatomy & Physiology	4
CH105	Life Chemistry II	4
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
HU251	Humanities I	4
	Humanities Electives	3-4

General Electives 6

Total Credits 127-128

* Credit granted for University/college courses. Students who completed a hospital diploma program, an integrated curriculum program, or took nutrition and/or pharmacology as part of an LPN program may receive university credit by taking the appropriate NLN examination, passing it at 50 percentile or higher and applying for course credit.

** Departmental examination available.

Bachelor's Degrees

Political Science

See College of Arts, Letters
and Social Sciences, page 246.

Program Description:

Political science is the systematic study of government, politics and public policy. It is one of a number of liberal arts majors that prepare students for a broad range of career opportunities.

Political science majors choose one of four tracks or concentrations: general political science, pre-law, public administration or secondary teaching. Each concentration provides a combination of knowledge and skills especially appropriate for those with particular career goals. However, choosing one concentration over the others does not limit you to a particular career path — each of the tracks provides a solid grounding in political science and a broad liberal arts background.

General education requirements and sufficient elective credits must be completed so that at least 124 semester credits have been earned.

Other Qualifications — Graduate degrees are required for some positions; thus, a law degree is required for work as an attorney and a Ph.D. is required for appointment to permanent teaching and research positions in colleges and universities.

Career Descriptions:

With the skills they acquire in writing, speaking, analysis, critical thinking and leadership, political science majors are able to pursue a wide variety of career options (some of which require additional education).

A sample of typical occupations include:

Attorney — represents clients in private practice, in small or large law firms; represents corporations, labor unions, trade associations or governments as a salaried employee; serves as a prosecutor or public defender; serves as a judge. Requires the completion of a law degree following college.

Government Employee — works for government agencies at the federal, state or provincial, or local level, or for international organizations, such as the United Nations.

Political Professional — works as a campaign manager; staff assistant to legislators; elected office holder; or as a political liaison for professional, trade, business or other interest groups.

Journalist — serves as reporter, editorial writer, editor or newscaster for newspapers, news magazines, or on radio or television.

Teacher — teaches government and politics at the high school or college level.

Business Executive — works in management, human resources, public relations or other areas in business.

Other Opportunities — includes preparation for graduate or professional schools in other fields such as business.

Bachelor of Science

Bachelor of Arts

Tracks:

General

Pre-Law

Public Administration

Secondary Teaching

Career Choices:

Attorney

Government Employee

Political Professional

Journalist

Teacher

Business Executive

Student Profile:

Do you ...

enjoy debating current issues?

enjoy leadership?

have an interest in public affairs?

work well with people?

Political Science

Political Science General Track Bachelor of Arts or Bachelor of Science

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. 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 government, politics, teaching, journalism and business.

Political Science Courses

PS110	Introduction to American Government and Politics	4
PS211	Political Science Research and Statistics	4

A minimum of one course in each of four political science fields, and two courses in one of the fields:

American Politics (PS325, 364, 367, 467)	3-4
Comparative Politics (PS160, 331, 333, 334, 335, 340)	3-4
International Relations (PS241, 411, 413, 420)	3-4
Political Philosophy (PS351, 352)	4
PS491 Senior Seminar I	4
PS492 Senior Seminar II	4

Additional political science electives to reach 42 credits 6-10
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

CS101	Intro. to Microcomputer Applications	3
EC201	Principles of Macroeconomics	3
EN220	Advanced Composition	3
EN221	Creative Writing	3
HS	Full-year history sequence (usually HS101-102 or HS131-132)	8
PL204	Introduction to Philosophy	3
PL205	Logic	3
SD302	Argumentation and Advocacy	3-4
SD320	Public Relations	3-4

Bachelor of Arts or Bachelor of Science Cognates

Bachelor of arts cognates:
One year of a foreign language 8
or

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

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	EN111 First-Year Composition II	3
PS110	Intro. to American Government and Politics	4	Pol Sci Elective	4
Nat Sci	Elective	4	HS History Sequence Elective	4
HS	History Sequence Elective	4	Nat Sci Elective	4
UN101	University Seminar	1		15
		15		
Second Year				
SD101	Fund. of Speech Communication	3	BA/BS Cognate	3
HU251	Humanities I	4	HU252 Humanities II	4
Pol Sci	Elective	3	Pol Sci Elective	4
CS101	Intro. to Microcomputer Appl. General Education Math	3	PS211 Political Science Research and Statistics	4
		3		15
		16		
Third Year				
Pol Sci	Field Elective	3	Pol Sci Field Elective	3
PL204	Introduction to Philosophy	3	Pol Sci Field Elective	3
EC201	Principles of Macroeconomics	3	EN220 Advanced Composition	3
BA/BS	Cognate Elective	4	SD302 Argumentation and Advocacy	3
		3	BA/BS Cognate	3
		16		15
Fourth Year				
PS491	Senior Seminar I	4	PS492 Senior Seminar II	4
Pol Sci	Field Elective	4	Pol Sci Field Elective	4
	Elective	4	Elective	4
	Elective	4	Elective	3
		16		15

Bachelor's Degrees

Political Science Pre-Law Track Bachelor of Arts or Bachelor of Science

The pre-law concentration is designed to provide students 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.

Political Science Courses

PS110	Introduction to American Government and Politics	4
PS120	Introduction to Legal Processes	3
PS130	Introduction to State and Local Government	4
PS211	Political Science Research and Statistics	4
PS222	Introduction to the Legal Profession	2
A minimum of one course in each of three political science fields:		
	Comparative Politics (PS160, 331, 333, 334, 335, 340)	3-4
	International Relations (PS241, 411, 413, FALL)	

First Year

EN420)	3-4	
	Political Philosophy (PS351, 352)	4
PS467	Constitutional Law and Civil Liberties	4
PS491	Senior Seminar I	4
PS492	Senior Seminar II	4

Additional political science electives to reach 42 credits 1-3
A minimum of 21 credits must be at the 300/400 level. Of these, at least nine must be at the 400 level.

Pre-law Cognates

AC230	Fundamentals of Accounting (or AC132 or OA119)	4
CS101	Intro. to Microcomputer Applications	3
EN220	Advanced Composition	3
EN221	Creative Writing	
HS	Full-year history sequence (usually HS 101-102 or HS 131-132)	8
LA102	Legal Research and Case Analysis	3
LA202	Legal Writing and Analysis	3
PL205	Logic	3
SD302	Argumentation and Advocacy	3
Two law courses from the following:		
LA	Any legal assistant courses	2-4
CJ202	Canadian Criminal Law	3
CJ319	Substantive Criminal Law	3
CJ406	Advanced Canadian Jurisprudence	3
CJ409	Procedural Criminal Law	3

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
PS110	Intro. to American Government and Politics	4	PS120	Intro. to Legal Processes	3
Nat Sci	Elective	4	HS	History Sequence Elective	4
HS	History Sequence Elective	4	Nat Sci	Elective	4
UN101	University Seminar	1		Elective	1
		<u>15</u>			<u>15</u>
Second Year					
SD101	Fund. of Speech Communication	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	BA/BS	Cognate	4
BA/BS	Cognate	3			<u>16</u>
		<u>15</u>			
Third Year					
PS	Field Elective	3	Pol Sci	Field Elective	4
LA102	Legal Research & Case Analysis	3	Pol Sci	Elective	3
EN220	Advanced Composition	3	SD302	Argumentation & Advocacy	3
AC230	Fundamentals of Accounting	4	PL205	Logic	3
	General Education Math	4	BA/BS	Cognate	3
		<u>16</u>			<u>16</u>
Fourth Year					
PS491	Senior Seminar I	4	PS492	Senior Seminar II	4
LA202	Legal Writing & Analysis	3		Law Elective	3
PS467	Constitutional Law and Civil Liberties	4	Pol Sci	Field Elective	4
	Law Elective	4		Elective	4
		<u>15</u>			<u>15</u>

BA254	Business Law I	3
BA255	Business Law II	3

Bachelor of Arts/Bachelor of Science Cognates

Bachelor of arts cognates:
One year of a foreign language 8
or

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
S0101	Introduction to Sociology	3
S0213	Introduction to Anthropology	3

Political Science

Political Science Public Administration Track Bachelor of Science

The public administration concentration is most appropriate for students who plan 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.

Political Science Courses

PS110	Introduction to American Government and Politics	4
PS130	Introduction to State and Local Government	4
PS201	Intro. to Public Administration	3
PS211	Political Science Research and Statistics	4
PS301	Policy Analysis and Evaluation	4
PS401	Principles of Public Administration	3
PS491	Senior Seminar I	4
PS492	Senior Seminar II	4
PS499	Public Administration Internship	3

A minimum of one course in each of three political science fields:

Comparative Politics (PS160, 331, 333, 334, 335, 340)	3-4
International Relations (PS241, 411, 413, 420)	3-4
Political Philosophy (PS351, 352)	4

Public Administration Cognates

AC230	Fundamentals of Accounting (or AC132 or OA119)	4
CS101	Intro. to Microcomputer Applications	3
EC201	Principles of Macroeconomics	3
EC305	Public Finance	3
EN220	Advanced Composition	3
EN221	Creative Writing	3
HS	Full-year history sequence (usually HS101-102 or HS131-132)	8
MN360	Principles of Management	3
MN365	Human Resource Management	3
PY228	Organizational Behavior	3
S0313	Work and Organization	3
SD302	Argumentation and Advocacy	3-4
SD320	Public Relations	3-4

FALL			SPRING		
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
PS110	Intro. to American Government and Politics	4	PS130	Intro. to State and Local Government	4
HS	History Sequence Elective	4	HS	History Sequence Elective	4
Nat Sci	Natural Science Elective	4	Nat Sci	Natural Science Elective	4
UN101	University Seminar	1			15
		<u>16</u>			
Second Year					
SD101	Fund. of Speech Communication	3	HU252	Humanities II	4
HU251	Humanities I	4	Pol Sci	Field Elective	4
PS201	Intro. to Public Administration	3	PS211	Political Science Research and Statistics	4
CS101	Intro. to Microcomputer Appl. General Elective Math	3		Elective	3
		<u>16</u>			15
Third Year					
Pol Sci	Field Elective	3	PS301	Policy Analysis & Evaluation	4
AC230	Fundamentals of Accounting	4	SD320	Public Relations	4
EC201	Intro. to Macroeconomics	3	MN360	Principles of Management	3
PY228	Organizational Behavior	3		elective	4
	Elective	3			15
		<u>16</u>			
Fourth Year					
PS491	Senior Seminar I	4	PS492	Senior Seminar II	4
PS401	Prin. of Public Administration	3	PS499	Political Science/Public Administration Internship	3
EC305	Public Finance	3	Pol Sci	Field Elective	4
MN365	Human Resource Management	3		Elective	4
	Elective	3			15
		<u>16</u>			

Political Science

Political Science Secondary Teaching Bachelor of Arts Bachelor of Science

The secondary teaching concentration in political science is designed to provide a broad education in political science that will prepare students to teach high school courses in government and politics.

General Education	25
Political Science Courses	42
PS110 Introduction to American Government and Politics	4
PS130 Intro. to State and Local Government	4
PS160 Intro. to Canadian Government and Politics	3
PS241 Intro. to International Relations	4
PS211 Political Science Research and Statistics	4
A minimum of one course in each of the following four political science fields:	
American Politics (PS325, 364, 367, 467)	3-4
Comparative Politics (PS331, 333, 334, 335, 340)	3-4
International Relations (PS342, 411, 413, 420)	3-4
Political Philosophy (PS351, 354)	4
PS491 Senior Seminar I	4
PS492 Senior Seminar II	4
Additional political science electives to reach 42 credits:	0-2

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

Secondary Teaching Political Science Cognates	36
CS101 Intro. to Microcomputer Appl.	3
EC201 Principles of Macroeconomics	3
HS101-102 History of World Civilization I & II	8
or	
HS131-132 United States History I & II	
TE150 Reflections on Learning and Teaching	3
TE250 Student Diversity and Schools	3
TE301 Learning Theory and Teaching Practice	4
TE430 General Methods for Secondary Teachers	3
TE431 The Secondary Learner	3
TE440 Reading in the Content Area	3
TE444 Content Area Methods for Secondary Teachers	3

Following graduation, students complete a full-year intern teaching experience at an approved secondary school. This experience is supported by six required courses: TE491, 492, 601, 602, 603, 604.

Minor 20-28
Complete the requirements of a certifiable teaching minor

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	SD101 Fund. of Speech Communication	3
PS110	Intro. to American Government and Politics	4	PS130 Intro. to State and Local Government	4
CS101	Intro. to Microcomputer Applications	3	TE150 Reflections on Learning & Teaching	3
HS101	History of World Civilization I	4	HS102 History of World Civilization II	4
or			or	
HS131	United States History I	4	HS132 United States History II	3
UN101	University Seminar	1	EN111 First-Year Composition II	3
		<u>15</u>		<u>17</u>
Second Year				
	Minor Requirement	3	Natural Science Elective	4
HU251	Humanities I	4	PS Field Elective	4
PS160	Intro. to Canadian Government and Politics	3	BA/BS General Education Math	3
BA/BS	Cognate	4	BA/BS Cognate	4
TE250	Student Diversity and Schools	3	Minor Requirement	3
		<u>17</u>		<u>18</u>
Third Year				
PS	Field Elective	3	PS Field Elective	4
Nat Sci	Natural Science Elective	4	PS211 Political Science Research and Statistics	4
EC201	Intro. to Macroeconomics	3	Humanities Elective	4
	Minor Requirement	4	TE301 Learning Theory and Teaching Practice	4
	Minor Elective	3		<u>16</u>
		<u>18</u>		
Fourth Year				
PS491	Senior Seminar I	4	PS492 Senior Seminar II	4
PS	Field Elective	4	Minor Requirement	4
	Minor Requirement	3	PS Elective	4
TE430	General Methods for Secondary Teachers	3	TE431 The Secondary Learner	3
TE440	Reading in the Content Area	3	TE441 Content Area Methods for Secondary Teachers	3
		<u>17</u>		<u>18</u>

Bachelor of Arts or Bachelor of Science Cognates	8-9
<i>Bachelor of Arts Cognates</i>	
One year of a foreign language	8
<i>Bachelor of Science Cognates</i>	
Three courses (minimum nine credits) from the following:	
EC202 Principles of Macroeconomics	3
PY101 Introduction to Psychology	4
SO101 Introduction to Sociology	3
SO213 Introduction to Anthropology	3
Total Required Credits	124-140
Depending upon minor chosen	

Bachelor's Degrees

Pre-Pharmacy *(transfer program)*

See College of Natural and Health Sciences, page 281.

Program Description:

Most pharmacy schools require students to take two years of pre-pharmacy preparation prior to being admitted to their four-year professional program. Admission into the professional pharmacy programs is very competitive and is based, to a large extent, on grades in specific required courses. Many pharmacy colleges also require applicants to take the Pharmacy College Admission Test (P.C.A.T.). This exam is generally taken mid-way through your second pre-pharmacy year.

Pre-pharmacy requirements vary greatly between different colleges that offer professional programs in pharmacy. In general, most require a pre-pharmacy program that emphasizes math and science as well as strong communication skills. Recently, a majority of the nation's schools began to move toward awarding the doctor of pharmacy (Pharm.D.) as the only professional degree in pharmacy. Because many pharmacy curricula are currently being modified, pre-pharmacy requirements are also subject to change.

The modifications in professional pharmacy curricula, combined with the variability in pre-pharmacy requirements, make it imperative for a pre-pharmacy student to determine the requirements for admission at the schools he or she desires to attend. A pre-pharmacy curriculum at Lake Superior State University can then be designed to help you obtain your goals. It is your responsibility to contact the directors of admissions at the pharmacy schools to which you are planning to apply so you can remain informed of their most recent requirements for admission.

Career Descriptions:

Community Pharmacist — practices in local pharmacies, professional health centers, hospitals, nursing homes or neighborhood health centers.

Government Supervisory Posts — USPHS, USDA, DVA employ pharmacists for technical writing, science reporting, directing manufacturing firms or overseeing cultivation of medicinal plants.

Research Pharmacist — within the pharmaceutical industry, conduct research to develop prescription and non-prescription drugs and other health products.

University Faculty — teach students, conduct research, act as consultants for local, state, national and international agencies and organizations.

Following is an example of typical minimum requirements for admission to many pharmacy programs:

Biology (with lab)	1 year
General Chemistry (with lab)	1 year
Organic Chemistry (with lab)	1 year
Physics (with lab)	1 year
Economics	1 course
Calculus	at least 1 course
English Composition	1 year
Speech	1 course
Social Science	1 year

In addition, several schools have specific pre-pharmacy requirements that are not on this list.

Career Choices

Community Pharmacist

Government Supervisory Posts

Research Pharmacist

University Faculty

Student Profile:

Do you...

enjoy math and science?

assume responsibility?

have good communication skills?

work well with people?

Psychology

See College of Arts, Letters and Social Sciences, page 246.

Program Description:

A comprehensive four-year program with emphasis on research, experimentation, computer applications and a senior-research sequence. Excellent preparation for graduate work at the master's or Ph.D. level in a wide variety of psychology disciplines.

Other Qualifications — A master's degree in psychology usually is the minimum requirement for the sample careers shown. The Ph.D. is essential for most senior-level positions and is required for appointment to permanent teaching and research positions in colleges and universities.

Career Descriptions:

Psychologist — studies human behavior and mental processes to understand, explain and change people's behavior. Psychologists conduct research or work in applied fields as counselors, industrial psychologists, trainers and market researchers. Other areas of concentration include medical, surgical and mental health.

Research/Statistical Assistant — assists researchers with their data collection and analysis.

University Professor — teaches undergraduate and graduate courses; conducts research; provides consulting services to the community and industry.

Elementary/Secondary Teacher — teaches elementary, middle or high school students; becomes educational administrator.

Other Opportunities — includes preparation for graduate or professional schools such as business or law.

Bachelor of Arts

Bachelor of Science

**Elementary Teacher
Education**

Secondary Teacher

Career Choices:

Psychologist

Research/Statistical Assistant

University Professor

Elementary/Secondary Teacher

Student Profile:

Are you...

curious about people?

a critical thinker?

interested in why people behave
the way they do?

Bachelor's Degrees

Psychology

Psychology

Bachelor of Arts

Bachelor of Science

Required Psychology Credits (36 credits)

PY101	Introduction to Psychology	4
PY210	Statistics	3
PY212	Experimental Psychology	4
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	3
<i>or</i>		
PY259	Abnormal Psychology	3
<i>or</i>		
PY265	Child & Adolescent Behavior	3

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.

Elementary Education*

Complete the planned program for elementary teachers and complete 25 credits in teacher education courses including TE150, TE250, TE301, TE330, TE410, TE411, TE421 and TE422.

Secondary Education*

Complete a minor approved for teacher education and complete 22 hours in teacher education courses including TE150, TE250, TE301, TE430, TE431, TE440 and TE444.

*You earn a bachelor's degree and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

Bachelor of Arts

FALL

First Year

EN110	First-Year Composition I	3
	Foreign Language	4
PY101	Introduction to Psychology	4
PY210	Statistics	3
BL105	Function of the Human Body	4
		<u>18</u>

Second Year

SD101	Fund. of Speech Communication	3
	Minor Course	3
PY311	Learning & Motivation	3
PY357	Personality Theory	3
NS	Elective	4
		<u>16</u>

Third Year

PY459	Physiological Psychology	3
	HU or elective	4
	Minor Courses	6
CS101	Intro. to Microcomputer Applications	3
		<u>16</u>

Fourth Year

PY498	Senior Research I	3
PY456	History & Systems of Psychology	3
	Minor Course	3
	General Elective Math	3
	Elective	3
		<u>15</u>

SPRING

EN111	First-Year Composition II	3
PY212	Experimental Psychology	4
	Foreign Language	4
	Physical Science	4
	Elective	2
		<u>17</u>

PY	Elective	3
	Minor Course	3
PY396	Tests & Measurements	3
	Minor Course	3
PY	Designated Elective	3
		<u>15</u>

PY457	Cognition	3
	HU or Elective	4
	Minor Courses	6
	Elective	3
		<u>16</u>

PY499	Senior Research II	4
	Electives	10
		<u>14</u>

Bachelor of Science

FALL

First Year

EN110	First-Year Composition I	3
PY101	Introduction to Psychology	4
PY210	Statistics	3
BL105	Function of the Human Body	4
	Psychology Elective	3
		<u>17</u>

Second Year

SD101	Fund. of Speech Communication	3
	Minor Course	3
PY311	Learning & Motivation	3
PY357	Personality Theory	3
	Cognate Course	3
		<u>15</u>

Third Year

PY459	Physiological Psychology	3
HU	Humanities	4
	Minor Courses	6
	Cognate Course	3
		<u>16</u>

Fourth Year

PY498	Senior Research I	3
PY456	History & System of Psychology	3
	Minor Course	3
	Electives	6
		<u>15</u>

SPRING

EN111	First-Year Composition II	3
PY	Elective	3
PY212	Experimental Psychology	4
	Natural Science	4
MA	Elective 100+ level	3-4
		<u>17-18</u>

	Cognate Course	3
	Minor Course	3
PY396	Tests & Measurements	3
	Electives	3
	Physical Science	3
		<u>15</u>

PY457	Cognition	3
HU	Humanities	4
	Minor Courses	6
	Elective	3
		<u>16</u>

PY499	Senior Research II	4
	Electives	11
		<u>15</u>

*May be taken fall or spring semester.

Recreation Management

See College of Natural
and Health Sciences, page 281.

Program Description:

The bachelor of science/bachelor of arts in recreation management is a professional degree which focuses on leading, planning, managing and directing athletic, recreation and leisure opportunities for all ages of clientele, in a variety of public, private and commercial settings. A business minor is included in the degree to enhance management knowledge and skills. Career specialization can be achieved through additional minors or concentrations. A bachelor of arts includes eight hours of foreign language requirements.

The bachelor of science degree in recreation management, with a concentration in parks and recreation management, combines an associate's degree in natural resources technology with additional course work relative to human resource management in the outdoor environment. Many jobs can be found in the public, private and commercial settings.

A one-semester internship is required for both degrees.

Career Descriptions:

Recreation Management

Recreation Director — plans, implements and administers recreation/leisure programs.

Facility Manager — manages sports/recreation facilities, including program development, scheduling, marketing, budgeting, public relations and human resource management.

Sports Manager — manages youth sports, school-sponsored athletic programs, intramurals, sports associations, recreational sports, and semi- and professional sports. Specializations in marketing, public relations, and ticket and merchandise sales.

Activity Programmers/Leaders — plans and/or provides recreation leisure services in the form of activities to specific or diverse age groups.

Entrepreneur — owns and manages recreation/leisure business.

Recreation Management-Parks

Park Ranger — provides back country or front country assistance and information to visitors. Enforces rules and regulations of the park.

Outdoor Educator — provides information, instruction, presentations and interactive opportunities relative to preserving, protecting and enhancing the natural environment.

Interpreter — provides information to the visitor regarding natural and cultural history and phenomena of the area.

Recreation Technician — plans, develops, implements/manages recreation projects, programs and facilities that are affiliated with the natural resources.

Instructor/Guide — provides outdoor recreation that is adventure based. Serves as an instructor for extreme sports.

Bachelor of Science

Bachelor of Arts

Recreation Management

Bachelor of Science

Recreation Management

concentration in

Parks and Recreation

Management

Career Choices:

Recreation Director

Sports Manager - Athletic Director

Recreation Facility Manager

Activity Programmers

Entrepreneur

Park Ranger

Recreation Technician

Outdoor Educator

Instructor/Guide

Interpreter

Student Profile:

Are you ...

people oriented?

a team leader and player?

a good communicator?

flexible and creative?

a decision maker/problem solver?

interested in athletic, recreation,
leisure, or park services?

Bachelor's Degrees

Recreation Management

Recreation Management Bachelor of Science

Department Requirements (33 credits)

RC101	Introduction to Recreation & Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC270	Sports Management	3
RC295	Practicum	1
RC375	Commercial Recreation	3
RC390	Recreation Leader Apprenticeship	1
RC397	Recreation Studies Junior Research Seminar	1
RC435	Problems, Issues and Research in Therapeutic Recreation and Leisure Sciences	3
RC437	Recreation Studies Senior Research Seminar	1
RC450	Philosophy of Leisure and Human Performance	3
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492*	Internship	6

**It is recommended that RC492 be completed during the summer of the student's senior year.*

Business Requirements (25 credits)

AC230	Fundamentals of Accounting	4
BA231	Business Communications	3
BA254	Business Law I	3
EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
FN245	Principles of Finance	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3

Cognate Requirements (17-19 credits)

BL105	Function of the Human Body	4
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 (12 credits)

ES140	Health and 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
RC212	Instructional Methods in Adapted Aquatics	2
RC220	Methods of Arts & Crafts	3
RC240	Found. of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC280	Readiness in Games, Activities and Sports	3

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition I	3
RC101	Introduction to Recreation & Leisure Services	3	RC105	Program Development and Leadership	3
BL105	Functions of Human Body	4	NS	Natural Science	4
SD101	Fund. of Speech Communication	3	HE181	First Aid	1
	General Education Math	3	PY101	Introduction to Psychology	4
		<u>16</u>			<u>15</u>
Second Year					
MK281	Marketing Principles and Strategies	3	AC230	Fundamentals of Accounting	4
	Social Science Diversity	3	PS130	Intro. to State & Local Government	4
BA231	Business Communications	3	RC270	Sports Management	3
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
RC	Department Elective	3	RC295	Practicum	1
		<u>15</u>			<u>15</u>
Third Year					
BA254	Business Law I	3	MN360	Principles of Management	3
HU251	Humanities I	4	RC397	Recreation Studies Junior Research Seminar	1
FN245	Principles of Finance	3	RC375	Commercial Recreation	3
RC	Departmental Elective	3		Humanities Elective	3-4
PY210	Statistics	3		General Elective	3
		<u>16</u>	RC390	Recreation Leader Apprenticeship	1
Fourth Year					
RC435	Problems, Issues and Research in Therapeutic Recreation and Leisure Sciences	3	RC437	Recreation Studies Senior Research Seminar	1
RC481	Professional Development Seminar	1	RC450	Philosophy of Human Performance and Leisure	3
RC482	Administration of Recreation and Leisure Services	4	RC	Department Elective	3
RC	Department Elective	3		General Elective	3
	General Elective	3	HM480	Grantwriting	3
		<u>14</u>			<u>13</u>
Summer					
RC492	Internship	6			

RC295	Practicum	1-3
RC320	Dance and Rhythmic Activities for Recreation	3
RC340	Program Development in Therapeutic Recreation	3
RC344	Adapted Sports and Recreation	3
RC362	Land Management for Recreation Purposes	3
RC365	Expedition Management	3
RC367	National Parks, National Monuments and National Culture	3
RC370	Recreation for Elderly	3
RC390	Recreation Leader Apprenticeship	1
RC496	Selected Research Topics	1-3

Elective credits and general education requirements (see page 72) must be completed so that at least 124 semester credits have been earned.

Recreation Management

Recreation Management Bachelor of Arts

Department Requirements (35 credits)

RC101	Introduction to Recreation and Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC270	Sports Management	3
RC295	Practicum	1
RC375	Commercial Recreation	3
RC390	Recreation Leader Apprenticeship	1
RC397	Recreation Studies Junior Research Seminar	1
RC435	Problems, Issues and Research in Therapeutic Recreation and Leisure Sciences	3
RC436	Therapeutic Recreation and Leisure Science Research	2
RC437	Recreation Studies Senior Research Seminar	1
RC450	Philosophy of Leisure and Human Performance	3
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492*	Internship	6

*It is recommended that RC492 be completed during the summer of the student's senior year.

Business Requirements (25 credits)

AC230	Fundamentals of Accounting	4
BA231	Business Communications	3
BA254	Business Law I	3
EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
FN245	Principles of Finance	3
MK281	Marketing Principles and Strategy	3
MN360	Principles of Management	3

Cognate Requirements (19 credits)

BL105	Functions of the Human Body	4
HE181	First Aid	1
HM480	Grantwriting	3
	Foreign Language	8
PY210	Statistics	3

Department Electives (12 credits)

ES140	Health and 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
RC212	Instructional Methods in Adapted Aquatics	2

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	EN111 First-Year Composition II	3
RC101	Introduction to Recreation and Leisure Services	3	RC105 Program Development and Leadership in Recreation and Leisure Services	3
BL105	Function of the Human Body	4	NS Natural Science	4
SD101	Fund. of Speech Communication Math/Philosophy Course	3	PY101 Introduction to Psychology	4
		<u>3</u>	HE181 First Aid	<u>1</u>
		16		15
Second Year				
MK281	Marketing Principles & Strategies	3	AC230 Fundamentals of Accounting	4
BA231	Business Communication	3	RC Department Elective	3
EC201	Principles of Macroeconomics	3	EC202 Principles of Microeconomics	3
RC	Department Elective	3	RC270 Sports Management	3
	Foreign Language	4	RC270 Foreign Language	<u>4</u>
RC295	Practicum	<u>1</u>		17
		17		
Third Year				
	Elective	4	Elective	4
PY210	Statistics	3	MN360 Principles of Management	3
HU251	Humanities I	4	Humanities Elective	3-4
FN245	Principles of Finance	3	RC375 Commercial Recreation	3
RC390	Recreation Leader Apprenticeship	<u>1</u>	RC397 Recreation Studies Junior Research Seminar	<u>1</u>
		15		14-15
Fourth Year				
RC435	Problems, Issues and Research in Therapeutic Recreation and Leisure Sciences	3	RC437 Recreation Studies Senior Research Seminar	1
RC481	Professional Development Seminar	1	RC450 Philosophy of Human Performance and Leisure	3
RC482	Administration of Recreation and Leisure Services	4	HM480 Grantwriting	3
RC	Department Elective	3	RC Department Elective	3
BA254	Business Law I	<u>3</u>	General Elective	<u>1-3</u>
		14		11-13
Summer				
RC492	Internship	6		

Elective credits and general education requirements (see page 72) must be completed so that at least 124 semester credits have been earned.

Bachelor's Degrees

Recreation Management

Recreation Management Parks and Recreation Management Concentration Bachelor of Science

General education requirements and sufficient electives must also be completed so that at least 126 credits have been earned.

Parks and Recreation Requirements (105 credits)

AC230	Fundamentals of Accounting	4
BL102	Careers in Natural Resources	1
BL140	Intro. to Fish and Wildlife	1
BL230	Introduction to Soils	4
BL240	Natural History of Vertebrates	3
BL284	Principles of Forestry	3
BL286	Watershed Management	3
CH108	Applied Chemistry	4
CS101	Introduction to Microcomputer Applications	3
EN205	Technical Report Writing	3
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
EV128	Geographic Information	1
EV226	Geospatial Analysis I	1
EV227	Geospatial Analysis II	1
HE181	First Aid	1
HM480	Grantwriting	3
HU251	Humanities I	4
MA111	College Algebra	3
NS103	Environmental Science	3
NS104	Environmental Science Lab	1
PS130	Introduction to State and Local Government	4
PY101	Introduction to Psychology	4
PY210	Statistics	3
MA207	Principles of Statistical Methods	3
MN360	Principles of Management	3
RC101	Introduction to Recreation	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC262	Outdoor Recreation	3
RC295	Recreation Practicum	1
RC362	Land Management for Recreation Purposes	3
RC365	Expedition Management	3
RC390	Recreation Leader Apprenticeship	1
RC397	Recreation Studies Junior Research Seminar	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC437	Recreation Studies Senior Research Seminar	1
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492*	Recreation Internship	6
SD101	Fund. of Speech Communication	3
TC140	Outdoor Construction/Landscaping	3
TC111	Small Engine Mechanics	2

*RC492 may be completed during the summer of the student's junior or senior year, in accordance with academic prerequisites.

FALL		SPRING			
First Year					
BL102	Careers in Natural Resources	1	EN111	First-Year Composition II	3
EN110	First-Year Composition I	3	BL140	Introduction to Fish and Wildlife	1
EV125	Geospatial Basics	1	CH108	Applied Chemistry	4
EV126	Air Photo Interpretation	1	EV127	Global Positioning Systems	1
NS103	Environmental Science	3	EV128	Geographic Information	1
NS104	Environmental Science Lab	1	HE181	First Aid	1
PY101	Introduction to Psychology	4	MA111	College Algebra	3
RC101	Introduction to Recreation and Leisure Services	3	RC105	Program Development and Leadership in Recreation and Leisure Services	3
		<u>17</u>			<u>17</u>
Second Year					
BL230	Introduction to Soils	4	BL284	Principles of Forestry	4
BL240	Natural History of Vertebrates	3	BL286	Watershed Management	3
EV226	Geospatial Analysis I	1	SD101	Fund. of Speech Communication	3
EV227	Geospatial Analysis II	1	HU251	Humanities I	4
RC262	Outdoor Recreation	3	TC111	Small Engine Mechanics	2
	Elective	3			<u>16</u>
		<u>15</u>			
Third Year					
CS101	Intro. to Microcomputer Applications	3	AC230	Accounting	4
HM480	Grantwriting	3	MA207	Principles of Statistical Methods	3
TC140	Outdoor Construction/Landscaping	3		or	3
	Humanities	4	PY210	Statistics	3
	Elective	3	PS130	Intro. to State and Local Government	4
		<u>16</u>	RC295	Recreation Practicum	1
			RC397	Recreation Studies Junior Research Seminar	1
				Elective	3
					<u>16</u>
Fourth Year					
RC390	Recreation Leader Apprenticeship	1	MN360	Principles of Management	3
RC435	Problems and Issues in Therapeutic Recreation	3	RC362	Land Management for Recreation Purposes	3
RC481	Professional Development Seminar	1	RC365	Expedition Management	3
RC482	Administration of Recreation and Leisure Services	4	RC437	Recreation Studies Senior Research Seminar	1
	Social Science Diversity	3		Elective	3
	Elective	3			<u>13</u>
		<u>15</u>			
Summer					
RC492	Internship	6			

Social Science

See College of Arts, Letters and
Social Sciences, page 246.

Program Description:

The social science degree helps prepare students to be effective citizens and develops skills useful in various employment areas, both in the public and private sectors. Both degree programs allow you to take a large number of electives, providing flexibility in accommodating a number of career plans.

Career Descriptions:

Urban and Regional Planner — develops comprehensive plans and programs for the use of land for industrial and public sites.

Government Worker — works for a variety of local, state and federal agencies as operational-level personnel and managers.

Bachelor of Science

Bachelor of Arts

Career Choices

Urban and Regional Planner

Government Worker

Student Profile:

Do you...

like to make things happen?

want to change people for the
better?

like to work with other people?

Bachelor's Degrees

Social Science

Social Science Bachelor of Arts Bachelor of Science

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 Major 9
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 Major 21
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 one course from List A and one course from List B:

List A: Statistics (choose one)

SO302	Statistics for Social Science
PY210	Statistics
PS211	Political Science Research and Statistics

List B: Methods (choose one)

SO202	Social Research Methods
PY212	Experimental Psychology
HS496	Historical Methods

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's Degrees

Bachelor of Arts					
FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	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
		<u>16-18</u>			<u>16-18</u>
Second Year					
SD101	Fund. of Speech Communication	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		General Education Math	3
		<u>13-14</u>			<u>15-17</u>
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
		<u>16</u>			<u>16-19</u>
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
		<u>15-16</u>			<u>15-18</u>

Bachelor of Science					
FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	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
		<u>16-19</u>			<u>16-19</u>
Second Year					
SD101	Fund. of Speech Communication	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		General Education Math	3
		<u>13-14</u>			<u>16-17</u>
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
		<u>16</u>		Elective	3-6
					<u>16-19</u>
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
		<u>15-16</u>			<u>15-18</u>

Social Studies

See College of Arts, Letters and Social Sciences, page 246.

Program Description:

A passion for history, political science or economics will help enable you to successfully complete a bachelor of arts or bachelor of science in elementary or secondary education.

If you are preparing for elementary school teaching you will complete course work in the areas of language arts, mathematics and natural sciences as well as courses in Teacher Education.

Preparation for teaching at the secondary level includes completing the social studies major and also a minor program of study in one of many teaching areas.

Both the elementary and secondary teaching degrees require completion of the sequence of teacher education courses and a fifth-year student internship.

You will also complete courses to meet the general education requirements for both elementary and secondary education.

Basic knowledge in history, geography, political science and economics, plus more extensive study in two or more of these areas, is required for this major.

After successfully completing the first two years of the Teacher Education Program, you will apply for admission to the Teacher Education Program. There are a number of requirements for admission as a junior. These are designed to assure that students who wish to become teachers have an intellectually and professionally sound preparation. Among these requirements is an overall grade point average of 2.70.

Career Description:

Elementary or Secondary Teacher — teaches at the elementary, middle, or secondary school level. Nurtures the intellectual growth and development of young people. Teaching offers you the opportunity to expand your own knowledge and skills.

Bachelor of Science

Bachelor of Arts

Elementary Education

Secondary Education

Career Choices

Elementary or Secondary
Teacher

Student Profile:

Do you...

enjoy learning about history, political science, economics or geography?

enjoy using your mind?

wish to make a commitment to lifelong learning?

want to contribute to children's intellectual and personal growth?

Bachelor's Degrees

Social Studies

Social Studies Bachelor of Arts Bachelor of Science Elementary Education

Planned Program (37 credits)

Language Arts:

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
EN235	Survey of Native Literature of North America	3
<i>or</i>		
EN236	Literature and Culture	3

Science:

BL107	Field Biology	3
NS101	Conceptual Physics	4
NS102	Introduction to Geology	4
NS110	Chemistry in Society	4

Mathematics:

MA103	Number Systems and Problem Solving	4
MA104	Geometry and Measurement	4
MA110	Explorations in Mathematics	3
<i>or</i>		
MA111	College Algebra	3

General Education and Electives: Students must complete all the general education requirements and electives to total 124 semester credits.

Major Area Requirements for both Elementary and Secondary Education

Introductory Sequences (29 credits)

EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
GG201	World Regional Geography	4
<i>or</i>		
GG302	Economic Geography	3
GG306	Cultural Geography	3
HS101	History of World Civilization I	8
<i>and</i>		
HS102	History of World Civilization II	8
<i>or</i>		
HS131	United States History I	8
<i>and</i>		
HS132	United States History II	8
PS110	Intro. to American Government and Politics	4
PS130	Intro. to State and Local Government	4

Upper-Level Courses (17 credits)

Students must choose five additional courses from 300/400-level offerings in two or more of these disciplines: economics, geography, history, political science. No more than 12 of the 17 credits may be in any one discipline.

Bachelor of Arts/Science

FALL

First Year

EN110	First-Year Composition I	3
HS101	History of World Civilization I	4
<i>or</i>		
HS131	United States History I	4
PS110	Intro. to American Government and Politics	4
TE150	Reflection on Learning	3
MA110	Explorations in Mathematics	3
		<u>17</u>

Second Year

SD101	Fund. of Speech Communication	3
EN222	English Grammar	3
HU251	Humanities I	4
NS110	Chemistry in Society	4
TE250	Student Diversity and Schools	3
		<u>18</u>

Summer

NS102	Introduction to Geology	4
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Third Year

EC201	Princ. of Macroeconomics	3
GG306	Cultural Geography	3
300/400-Level EC, GG, HS or PS		4
TE301	Learning Theory and Teaching Practices	4
TE330	Reading in the Elementary Classroom	3
		<u>17</u>

Fourth Year

TE410	Corrective Reading in the Classroom	3
TE411	Elementary Language Arts and Methods Across the Curriculum	3
300/400-Level EC, GG, HS or PS		7
TE422	Social Sciences Methods Course	2-4
		<u>15-17</u>

Fifth Year

TE491	Internship in Teaching Diverse Learners I	6
TE601	Professional Roles and Teaching Practice I	3
TE602	Reflection and Inquiry in Teaching Practice I	3
		<u>12</u>

Methodology Courses

Select one course from the following methods classes:

HS496	Historical Methods	2
PY212	Experimental Psychology	4
SO202	Social Research Methods	3

Select one course from the following statistics classes:

PS211	Political Science Research and Statistics	4
PY210	Statistics	3
SO302	Statistics for Social Science	4

Teacher Education Sequence

To earn a bachelor of arts degree, students must take eight credits of a foreign language.

SPRING

BL107	Field Biology	3
CS101	Intro. to Microcomputer Applications	3
HS102	History of World Civilization II	4
<i>or</i>		
HS132	United States History II	4
PS130	Intro. to State & Local Government	4
SD101	Fund. of Speech Communication	3
		<u>17</u>
EN/NA	Literature Course	3
MA103	Number Systems and Problem Solving	3
NS102	Introduction to Geology	4
PY265	Child and Adolescent Psychology	3
HU	Humanities	3-4
		<u>16-17</u>

EC202	Prin. of Microeconomics	3
EN335	Children's Literature in the Classroom	3
GG201	World Regional Geography	4
<i>or</i>		
GG302	Economic Geography	3
MA104	Geometry and Measurement	4
NS101	Conceptual Physics	4
		<u>18</u>

TE420	Math Methods for Elementary Teachers	2
TE421	Science Methods for Elementary Teachers	2
TE422	Social Studies Methods for Elementary Teachers	2
300/400-Level EC, GG, HS or PS		6
TE422	Social Sciences Methods Course	3
		<u>16</u>

TE492	Internship in Teaching Diverse Learners II	6
TE603	Professional Roles and Teaching Practice II	3
TE604	Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>

Social Studies Bachelor of Arts Bachelor of Science Secondary Education

Minor (21 credits)

Students are encouraged to select a 21-credit teaching minor in economics, geography, history, political science, psychology or sociology. Courses counted for the major may be counted for the minor.

General Education and Electives

Students must complete all the general education requirements and electives to total 124 semester credits.

Bachelor of Arts/Science

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	EN111 First-Year Composition II	3
HS101	History of World Civilization I	4	CS101 Intro. to Microcomputer Applications	3
	or		HS102 History of World Civilization II	4
HS131	United States History I		HS132 United States History II	
PS110	Intro. to American Government and Politics	4	NS General Education	4
TE150	Reflection on Learning	3	Course for Teaching Minor	4
	General Education Math	3		15
		17		
Second Year				
CS101	Intro. to Microcomputer Applications	3	PS130 Intro. to State and Local Government	4
HU251	Humanities I	4	Courses for Teaching Minor	6
NS	General Education	4	Elective	3
TE250	Student Diversity and Schools	3	Humanities	3-4
	Course for Teaching Minor	3		16-17
		17		
Third Year				
EC201	Prin. of Macroeconomics	3	EC202 Prin. of Macroeconomics	3
GG306	Cultural Geography	3	GG201 World Regional Geography	4
TE301	Learning Theory and Teaching Practices	4	GG302 Economic Geography	
	Course for Teaching Minor	3	Courses for Teaching Minor	7
300/400-Level EC, GG, HS or PS		4	Elective	3
		17		17
Fourth Year				
TE430	General Methods for Secondary Teachers	3	TE431 The Secondary Learner	3
TE440	Reading in the Content Area	3	TE444 Social Science Methods for Secondary Teachers	3
300/400-Level EC, GG, HS or PS		7	300/400-Level EC, GG, HS or PS	6
	Social Sciences Methods Course	2-4	Course for Teaching Minor	3
		15-17	Social Sciences Methods Course	3
				18
Fifth Year				
TE491	Internship in Teaching Diverse Learners I	6	TE492 Internship in Teaching Diverse Learners II	6
TE601	Professional Roles and Teaching Practice I	3	TE603 Professional Roles and Teaching Practice II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604 Reflection and Inquiry in Teaching Practice II	3
		12		12

Major Area Requirements for both Elementary and Secondary Education

Introductory Sequences (29 credits)

EC201	Principles of Macroeconomics	3
EC202	Principles of Macroeconomics	3
GG201	World Regional Geography	4
	or	
GG302	Economic Geography	
GG306	Cultural Geography	3
HS101	History of World Civilization I	8
	and	
HS102	History of World Civilization II	
	or	
HS131	United States History I	8
	and	
HS132	United States History II	
PS110	Intro. to American Government and Politics	4
PS130	Intro. to State and Local Government	4

Upper-Level Courses (17 credits)

Students must choose five additional courses from 300/400-level offerings in two or more of these disciplines: economics, geography, history, political science. No more than 12 of the 17 credits may be in any one discipline.

Methodology Courses

Select one course from the following methods

classes:		
HS496	Historical Methods	2
PY212	Experimental Psychology	4
S0202	Social Research Methods	3

Select one course from the following statistics

classes:		
PS211	Political Science Research and Statistics	4
PY210	Statistics	3
S0302	Statistics for Social Science	4

Teacher Education Sequence

To earn a bachelor of arts degree, students must take eight credits of a foreign language.

Sociology

See College of Arts, Letters and Social Sciences, page 246.

Bachelor of Arts

Bachelor of Science

Double Major in Sociology and Human Services*

Elementary Education

Secondary Education

Career Choices:

Social Service Worker

Public Relations Worker

Human Resources Manager

Politician

Elementary/Secondary Teacher

College Professor

Survey Researcher

Urban Planner

Student Profile:

Are you...

curious about people and how social systems work?

a critical thinker?

imaginative?

ready to make things happen in organizations?

**Because curriculums in the human services area vary with each student, please see your advisor to set up a schedule that meets your needs for the double major in sociology and human services.*

Program Description:

For students planning a career in sociology, teaching or conducting research, the bachelor of arts or bachelor of science provides the undergraduate preparation for graduate work in sociology.

Many other careers require a solid foundation of knowledge about social structure and human behavior. The sociology program is flexible, allowing you to combine the Sociology major with a number of other concentrations, enhancing career preparations in a number of fields. The broad liberal arts base provided by the sociology degree will help you prepare to negotiate changes in career paths commonly experienced over the course of a work life.

Other Qualifications — an advanced degree may be required for some of the positions shown.

Preparation for professions — you can gain long-term advantage by beginning your studies for a professional career in such areas as business, law or medicine with the liberal arts foundation and understanding of people which the sociology degree provides. With a sociology major, you will have ample room in your academic schedule to take classes to prepare for entrance exams for professional school.

Other Opportunities — include preparation for graduate or professional schools such as business or law.

Career Descriptions:

Social Service Worker — provides counseling, administers programs, coordinates services in public or private agencies assisting individuals, families, groups or communities. You can best prepare for this type of work by combining your sociology major with a human service minor or by seeking a dual major in sociology and human service.

Public Relations Worker — assists an institution or corporation in presenting itself before the public, often working with the media.

Human Resources Manager — administers and helps develop policies for hiring, training, promotion and personnel management of employees in private firms or public agencies.

Politician — develops or administers laws and policies through an elected or appointed position.

Elementary/Secondary Teacher — teaches elementary, middle or high school students; becomes educational administrator.

College Professor — teaches undergraduate and graduate courses, conducts research, provides consulting services to the community and industry. An advanced degree, a master's or Ph.D., is required for this work.

Survey Researcher — conducts sociological studies for government agencies, businesses or political groups. An advanced degree, usually the Ph.D., is required.

Urban Planner — works with city government to develop policies and design programs. Academic work beyond the bachelor's degree is required for this work.

Sociology Bachelor of Arts Bachelor of Science

Required Sociology Credits (35 hours)

The sociology major consists of 26 credit hours of core courses and nine credit hours of sociology electives.

Core (26 hours)

Major courses required in sociology are:

SO101	Introduction to Sociology	3
SO238	Social Psychology	4
SO202	Social Research Methods	3
SO302	Statistics for Social Science	4
SO303	Contemporary Sociological Theory	3
SO304	Development of Sociological Theory	3
SO401	Sociological Research I	3
SO402	Sociology Research II	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.

Minor or other Cognate (20 hours)

Choose one of the following alternatives. At least six credit hours must be at the 300/400 level.

Minor: Students may complete an approved minor. This minor could be in sociology, giving you 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: You may develop an approved concentration in one or more disciplines in consultation with your advisor.

Elementary Education

Complete the planned program for elementary teachers and complete 25 credits in teacher education courses including TE150, TE250, TE301, TE330, TE410, TE411, TE420, TE421 and TE422.

Secondary Education

Complete a minor approved for teacher education and complete 22 hours in teacher education courses including TE150, TE250, TE301, TE430, TE431, TE440 and TE444.

You earn a bachelor's degree, and then participate in a fifth-year teaching internship with accompanying graduate course work in order to become certified to teach.

General Education: All bachelor's degree students must complete the general education requirements.

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).

Students must take sufficient electives to total 124 semester credits.

Bachelor of Arts

FALL		SPRING		
First Year				
EN110	First Year Composition I	3	SO102 Social Problems	4
SO101	Introduction to Sociology	3	NS Elective	4
NS	Elective	4	EN111 First-Year Composition II	3
	General Education Math	3	SO Cognate or Elective	3
SO103	Cultural Diversity	3	SO Elective	3
		<u>16</u>		<u>17</u>
Second Year				
SD101	Fund. of Speech Communication	3	SO202 Sociological Research Methods	3
	Sociology Course	3	SO238 Social Psychology	4
	Cognates or Electives	6	Cognate or Elective	4
HU251	Humanities I	4	Humanities	4
		<u>16</u>		<u>15</u>
Third Year				
SO302	Statistics for Social Sciences	4	SO303 Contemporary Sociological Theory	3
SO304	Development of Sociological Theory	3	Cognates or Electives	6
	Cognates or Electives	5	First Year Foreign Language I	4
	First Year Foreign Language I	4	Sociology Course	3
		<u>16</u>		<u>16</u>
Fourth Year				
SO401	Sociological Research I	3	SO402 Sociological Research II	3
	Cognates or Electives	4	Cognates or Electives	4
		<u>17</u>		<u>17</u>

Bachelor of Science

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	SO102 Social Problems	4
SO101	Introduction to Sociology	3	Elective	4
NS	Elective	4	EN111 First-Year Composition II	3
	General Education Math	3	SO Elective	3
SO103	Cultural Diversity	3		<u>14</u>
		<u>16</u>		
Second Year				
SD101	Fund. of Speech Communication	3	SO202 Sociological Research Methods	4
	Sociology Course	3	SO238 Social Psychology	4
	Cognates or Electives	6	Cognates or Electives	4
HU251	Humanities I	4	Humanities	4
		<u>16</u>		<u>16</u>
Third Year				
SO302	Statistics for Social Sciences	4	SO303 Contemporary Sociological Theory	3
SO304	Development of Sociological Theory	3	Cognates or Electives	6
	Cognates or Electives	6	Sociology Course	3
	Electives	4	Elective	4
		<u>17</u>		<u>16</u>
Fourth Year				
SO401	Sociological Research I	3	SO402 Sociological Research II	3
	Cognates or Electives	4	Cognates or Electives	4
		<u>17</u>		<u>15</u>

Therapeutic Recreation

See College of Natural
and Health Sciences, page 281.

Bachelor of Science

Career Choices:

Therapeutic Recreation Specialist
Activities Director

Student Profile:

Are you...

proactive, multi-dimensional and organized?

a believer in the benefits of a quality leisure life-style?

able to work well within an interdisciplinary team?

committed to ensuring equal access and opportunities for those with illness and disabilities in all facets of society?

Program Description:

A multidisciplinary degree program which prepares graduates for national certification. Theoretical applications and practical experiences prepare you for careers in hospital clinical settings, community placement and residential treatment centers.

Career Descriptions:

Therapeutic recreation specialists, often referred to as recreational therapists, work with individuals who have mental, physical or emotional disabilities. Select activity modalities are utilized to treat or maintain the physical, mental and emotional well-being of consumers served. These interventions help individuals remediate the effects of illness or disability and achieve an optimal level of personal independence. The goals of interventions include improving physical, cognitive and social functioning.

Therapeutic Recreation Specialist — with a degree in therapeutic recreation, you can work in a wide variety of organizations and jobs. These are just a sample of the many possible types of employment: nursing homes, psychiatric facilities, rehabilitation hospitals, recovery centers, acute care hospitals, health clubs, Special Olympics, community recreation, pediatrics, group homes, adult day care centers, centers for independent living, non-profit recreational facilities, private consulting, access specialists, colleges/universities, private schools/centers, correctional facilities.

Activities Director — Therapeutic recreation specialists are often employed in long-term residential settings, such as nursing/retirement homes or long-term care wards of general hospitals. In many of these settings, the title "activities director" is the standard used for those who provide both diversional recreational activities and those with a therapeutic focus.

Therapeutic Recreation

Therapeutic Recreation Bachelor of Science

Therapeutic Recreation Requirements (49 credits)

ES140	Health and Fitness	3
ES141	Introduction to Movement	3
ES262	Exercise Physiology I	3
RC101	Introduction to Recreation and Leisure Services	3
RC105	Program Development and Leadership	3
RC240	Foundations of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC295	Practicum in Recreation	1
RC340	Program Development in Therapeutic Recreation	3
RC344	Adapted Sports and Recreation	3
RC346	Clinical Issues and Practice in Therapeutic Recreation	3
RC397	Recreation Studies Junior Research Seminar	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC437	Recreation Studies Senior Research Seminar	1
RC440	Disabilities Seminar	3
RC450	Philosophy of Human Performance and Leisure	3
RC481	Professional Development Seminar	1
RC492	Internship in Recreation	6

Cognate Requirements (40 credits)

BL121	Human Anatomy and Physiology I	4
BL122*	Human Anatomy and Physiology II	4
CS101	Intro. to Computer Science	3
HE101	Medical Terminology	2
HE185	Basic Pre-Nursing Competency Skills	1
HE328*	Multicultural Approaches to Health Care	3
HM480	Grantwriting	3
NS110*	Chemistry in Society	4
PY101*	Introduction to Psychology	4
PY210	Statistics	3
PY155	Lifespan Development	3
PY201	Communication Skills in Counseling	3
PY259	Abnormal Psychology	3

*also used as general education

Departmental Electives (6 credits)

ES349	Orthopedic Assessment	3
ES428	Psychological Aspects of Exercise and Athletic Rehabilitation	3
RC212	Adapted Aquatics	2
RC220	Methods in Arts and Crafts	3
RC270	Sports Management	3
RC280	Readiness for Games, Activities and Sports	3
RC295	Practicum in Recreation	1-2
RC320	Dance and Rhythmic Activity	3

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	HE101	Introduction to Medical Terminology	2
RC101	Introduction to Recreation and Leisure Services	3	CS101	Intro. to Computer Science	3
PY101	Introduction to Psychology	3	BL122	Human Anatomy and Physiology II	4
	Social Science	3	ES140	Health and Fitness	4
BL121	Human Anatomy and Physiology I	4	EN111	First-Year Composition II	3
		16			16
Second Year					
HE185	Basic Pre-Nursing Competency Skills	1	SD101	Fund. of Speech Communication	3
RC240	Found. of Therapeutic Recreation	3	ES141	Introduction to Movement	3
NS110	Chemistry in Society	3	RC105	Program Development and Leadership in Recreation Services	3
RC262	Outdoor Recreation	3	MA110	Explorations in Mathematics	3
RC295	Recreation Practicum	1	PY155	Lifespan Development	3
HU251	Humanities I	4			15
		15			
Third Year					
RC340	Program Development in Therapeutic Recreation	3	PY259	Abnormal Psychology	3
	Humanities	4	RC397	Recreation Studies Junior Research Seminar	1
HE328	Multicultural Approaches to Health Care	3	RC344	Adapted Sports and Recreation Cognate Elective	3
PY210	Statistics	3	RC346	Clinical Issues and Practice in Therapeutic Recreation	3
ES262	Exercise Physiology I	3	PY201	Communication Skills in Counseling	3
		16			16
Fourth Year					
RC435	Problems and Issues in Therapeutic Recreation	3	RC437	Recreation Studies Senior Research Seminar	1
RC481	Professional Development Seminar	1	HM480	Grantwriting	3
	Department Elective	3	ES/RC450	Philosophy of Leisure and Human Performance	3
RC440	Disabilities Seminar	3		Department Elective	3
	General Elective	3		General Elective	3
		13			13
Summer					
RC492	Internship	6			

RC370	Recreation for the Elderly	3
RC482	Administration of Recreation and Leisure Services	4
RC496	Selected Research Topics	1

Cognate Electives (3 credits)

HE232	Pathophysiology	3
PY212	Experimental Psychology	3
PY240	Behavior Management	3
PY291	Group Counseling	3
PY301	Child and Adolescent Development	3
PY311	Learning and Motivation	3
PY357	Personality Theory	3
PY385	Health Psychology	3
PY391	Family Therapy	3
SQ326	Sociology of Aging and Aged	3
SQ327	Sociology of Death and Dying	3

Elective credits and general education requirements must be completed so that at least 126 semester credits have been earned.

Bachelor's Degrees

Business Administration

See College of Business and Economics, page 266.

Associate's Degree

Career Choices:

Marketing Manager

Management Trainee

Program Description:

This program prepares you 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.

Career Descriptions:

Marketing Manager — entry-level positions, requiring a two-year degree in a marketing manager trainee program leading to retail or wholesale management positions.

Management Trainee — entry-level position, requiring a two-year degree, into a management trainee position in manufacturing or the retail trade.

Associate's Degrees

Student Profile

Are you...

a people person?

enthusiastic and eager to learn about business from the roots up?

General Education Requirements

EC202	Principles of Microeconomics	3
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
MA110	(or higher) Explorations in Math	3
	<i>or</i>	
PL205	Logic	3
PY101	Introduction of Psychology	4
SD101	Fundamentals of Speech	3

Departmental Requirements

AC132	Principles of Accounting I	4
	<i>or</i>	
AC230	Fundamentals of Accounting	4
BA105	Business Mathematics	3
BA231	Business Communications	3
BA254	Business Law I	3
BA255	Business Law II	3
	<i>Choose one from:</i>	3
DP225	Word Processing	
DP231	Database	
DP235	Spreadsheets	
DP250	Desktop Publishing	
DP121	Computer Applications for Business	3
FN245	Principles of Finance	3-4
	<i>or</i>	
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

Sufficient elective credits must be completed so that at least 62 semester credits have been earned.

FALL		SPRING	
First Year			
AC132	Principles of Accounting I	SD101	Fund. of Speech Communication
	<i>or</i>	4	MK283 Marketing Principles & Strategy
AC230	Fundamentals of Accounting	3	MK285 Retail Management
EN110	First-Year Composition I	3	EC202 Principles of Microeconomics
PY101	Introduction to Psychology	3	EN111 First-Year Composition II
BA105	Business Mathematics	3	
DP121	Computer Applications for Business	3	
		17	
Second Year			
MK283	Principles of Selling	3	
BA254	Business Law I	3	
	<i>Choose one from:</i>	3	
DP225	Word Processing		MN365 Human Resource Management
DP231	Database		MK387 Advertising Theory and Practice
DP235	Spreadsheets		BA255 Business Law II
DP250	Desktop Publishing		BA231 Business Communications
FN245	Principles of Finance	3	Elective
	Elective	3	
		15	15-16

Chemical Technology

See College of Natural and Health Sciences, page 281.

Program Description:

The associate of applied science degree prepares students to work as chemical technicians. It also easily fits within any of a number of existing baccalaureate degrees, providing the student a stepping stone to an advanced degree, as well as increased marketability for summer jobs and internships.

Chemical technicians and technologists conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analysis of solids, liquids and gaseous materials for purposes such as maintenance of environmental standards, and other work involving experimental, theoretical or practical application of chemistry and related sciences. Nationally, the mean hourly wage is \$15.46 (National Occupational Employment and Wage Estimates <http://stats.bls.gov>). Chemical technicians work in a variety of jobs for manufacturing companies, testing labs, government labs, for public utilities, and for universities.

Career Descriptions:

Laboratory Chemist — has knowledge of EPA methods for volatile and semi-volatile analysis; works with other chemists to perform laboratory analysis.

Field Chemist — applies chemical knowledge to environmental and health issues; supervises field technicians; and packages chemicals for transport and disposal. Customer relations skills are essential.

Physical Science Technician — performs the chemical analysis of plant and animal tissues, soils, sediments, and waters for environmental contamination, including sample receipt, storage, extraction cleanup and digestion analysis.

Associate of Applied Science

Career Choices:

Laboratory Chemist

Field Chemist

Physical Science Technician

Student Profile

Do you...

enjoy chemistry?

work independently and on a variety of tasks?

have an aptitude for problem solving and teamwork?

enjoy classes in math and science?

have strong writing, listening and speaking skills?

Associate's Degrees

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
EN110	First-Year Composition I	3	BA211	Business Statistics	3
MA140	Precalculus Mathematics	5	EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3		Elective	3
		<u>16</u>			<u>13</u>
Summer					
ID399	Internship in Chemistry	2-4			
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4	CH332	Instrumental Analysis	4
PH221	Elements of Physics I	4	FS312	Hazardous Material Management	4
	Elective	3	PH222	Elements of Physics II	4
		<u>15</u>			<u>16</u>

Degree requirements (31-33 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
FS312	Hazardous Material Management	4
ID399	Internship in Chemistry	2-4

Other Departments (11 credits)

BA211	Business Statistics	3
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

Free Electives (4-6 credits)

General Education (14 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA140	Precalculus Mathematics	5

Total Credits: 62

Chemistry

See College of Natural and Health Sciences, page 281.

Associate's Degree

Career Choices:

- Physical Science Technician
- Laboratory Chemist
- Field Chemist

Student Profile:

Do you have...

an interest in the environment and environmental protection?

an aptitude in natural sciences, particularly chemistry and mathematics?

skills in planning, organization and problem solving?

an ability to communicate effectively in writing?

an ability to effectively organize and present information verbally?

an ability to communicate and work with a broad array of people?

Program Description:

Graduates of the two-year associate's degree in chemistry may find employment as chemical laboratory technicians or proceed on to complete bachelor's degrees in an area of chemistry. This program transfers directly into the bachelor's degree in environmental chemistry.

Career Descriptions:

Physical Science Technician — performs a variety of technical procedures related to the chemical analyses of plant and animal tissues, soils, sediments and waters for environmental contaminants, including sample receipt, storage, homogenization, extraction, cleanup, digestion analysis and reporting; assists analytical chemists in routine maintenance of analytical instruments.

Laboratory Chemist — knowledge of EPA methods for volatile and semi-volatile analysis, A.A.S. (Flame/Graphite a plus) and/or I.C.P., instrument maintenance.

Field Chemist — supervises field technicians; packages chemicals for transportation and disposal, loads and unloads supply trucks; customer relation skills are essential.

Associate's Degrees

Chemistry		(25 credits)
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
Other Departments		(19 credits)
BA211	Business Statistics	3
MA151	Calculus I	4
MA152	Calculus II	4
PH231	Applied Physics I	4
PH232	Applied Physics II	4
General Education		(9 credits)
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
Free Electives		(9 credits)

Students are required to take a total of 62 semester credits.

FALL		SPRING			
<i>First Year</i>					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
MA151	Calculus I	4	MA152	Calculus II	4
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3	Free Elective		<u>3</u>
	Free Elective	<u>3</u>			14
		18			
<i>Second Year</i>					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4	CH332	Instrumental Analysis	4
PH231	Applied Physics for Engineers and Scientists I	4	PH232	Applied Physics for Engineers and Scientists II	4
	Free Elective	<u>3</u>	BA211	Business Statistics	<u>3</u>
		15			15

Computer Science

See College of Engineering and Mathematics, page 268.

Program Description:

This degree provides an initial framework in computer science which allows you to branch into many career paths. Students complete a capstone "real-world" project in their sophomore (CS290) year. You will often choose a project that relates to your specific interests, such as Web page design, database administration, and applications or systems programming.

Career Descriptions:

Entry-level Computer Programmer — designs, writes and tests programs as part of a programming team. Programs could be at the application or system level.

Systems Analyst — works in an IT group at a large company, research institute or school.

Database Administrator — analyzes, designs, and updates the database needs of an organization.

Associate's Degree

Career Choices:

Entry-level Computer Programmer
Information Technology Assistant
Database Administrator

Student Profile:

Do you...

like working with computers?

enjoy the challenge of problem-solving?

Associate's Degrees

FALL		SPRING			
First Year					
CS103	Survey of Computer Science	3	CS121	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3	MA207	Principles of Statistical Methods	3
EN110	First-Year Composition I	3	BA121	Introduction to Business	3
PY101	Introduction to Psychology	4		General Education Course	3
	Free Elective	3	EN111	First-Year Composition II	3
		<u>16</u>			<u>15</u>
Second Year					
CS201	Data Structures and Algorithms	3	CS221	Computer Networks	3
CS205	Computer Organization and Architecture	3	CS290	Computer Science Project	4
CS211	Database Applications	3	SD101	Fund. of Speech Communication	3
	General Education Elective	3		General Education Course	3
	Free Elective	3		Free Elective	3
		<u>15</u>			<u>16</u>

Departmental Courses (28 credits)

CS103	Survey of Computer Science	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	4
MA207*	Principles of Statistical Methods	3

Support Courses (7 credits)

BA121	Introduction to Business	3
PY101*	Introduction to Psychology	4

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA110 (or higher)	Explorations in Mathematics	3
	or	
PL205	Logic	3
	General Education Electives	6

Free Electives 16

Total Credits in Program 62

*May be used for general education credit.

Construction Technology

See College of Engineering and Mathematics, page 268.

Associate of Applied Science

Career Choices:

- Rough Carpenter/Foreman
- Rofer
- Finish Carpenter
- General Laborer
- Remodeling Carpenter

Student Profile:

Do you ...
like to build?
take pride in quality work?

Program Description:

The future looks very bright for the construction industry throughout the state of Michigan, the Midwest and the entire nation. New home construction and commercial construction are both experiencing a great deal of growth.

Laborers in the construction industry may focus on a particular specialty, but are also likely to work in a broad range of activities. Program graduates may find themselves performing a variety of home construction tasks, such as remodeling, rough carpentry and framing, roofing and interior finishing. Commercial construction is also an option, offering more experience with concrete and large-scale construction techniques.

As a "1 + 1" program, it allows you to complete a significant proportion of your course work while still enrolled at the Sault Area Career Center.

Career Descriptions:

Rough Carpenter/Foreman — cuts and assembles floor joists, stud walls, rafters; builds and installs floor and roof trusses, beams and headers; fastens floor, wall and roof sheathing.

Roofer — installs flashing for vents, chimneys and valleys; applies tar paper, roll roofing, shingles and shakes; works with hot tar and elastomers.

Finish Carpenter — performs fine carpentry; hangs doors and installs locksets; trims out windows and doors; installs base and cove moldings; hangs kitchen and bath cabinets.

General Laborer — provides materials and muscle as needed; keeps work site free of debris; sets up safety barriers and scaffolding; mixes mortar and supplies block and brick to masons; strips form from concrete work.

Remodeling Carpenter — involves demolition and rebuilding of portions of existing structures; i.e., bathrooms, kitchens, basements. Remodeling also deals with retrofitting for energy efficiency such as installing thermal windows, doors and skylights.

FALL		SPRING	
First Year (common)			
TC191	Class Internship	4	TC191 Class Internship 4
TC192	On-Site Internship	2	TC192 On-Site Internship 2
MA	Industrial Math (or equivalency)	4	TC118 Drafting 3
TC110	Industrial Safety	2	CS101 Intro. to Microcomputer Applications 3
		<u>12</u>	12
Summer			
TC192	On-Site Internship	6	
Second Year			
TC101	Construction I	3	TC105 Construction III 3
TC121	Construction Documents	4	TC103 Surveying 3
TC132	Construction Drawing	3	TC125 Construction Estimating 4
TC210	Graphical Problem Solving	2	EN110 First-Year Composition I 3
SS	Social Science Elective	3	TC102 Construction II 3
HE181	First Aid	1	16
		<u>16</u>	

Associate's Degrees

Criminal Justice

See College of Arts, Letters
and Social Sciences, page 246.

Program Description:

The associate's degree in corrections will prepare you to work in correctional facilities as corrections officers. The degree contains the five courses required by the Michigan Corrections Officers Training Council (MCOTC). Associate's degree graduates may also find paraprofessional jobs in other areas of corrections. This degree is compatible with the bachelor of science degree in criminal justice/corrections.

The associate's degree in law enforcement will prepare you for work in local law enforcement agencies provided you attend a police academy after graduation. This associate's degree is also compatible with the bachelor of science degree in criminal justice/law enforcement. Graduates may also find positions with private security agencies.

Career Descriptions:

Corrections Officer — works in secure correctional facilities; performs custodial services; acts as assistant resident unit manager; assists prisoners with their transition back to society.

Police Officer — works for local or state agencies; has broad arrest powers; is responsible for the safety of his/her respective communities; investigates crimes; provides a variety of related services.

Loss Control Officer — provides many of the same services that the police do only in the private sector; maintains perimeter security in industrial settings; performs retail shoplifting investigations.

Associate's Degree

Emphasis in:

Corrections

Law Enforcement

Career Choices:

Corrections Officer

Police Officer

Loss Control Officer

Student Profile:

Are you...

interested in people?

curious about human behavior?

able to work without supervision?

Associate's Degrees

Criminal Justice

Criminal Justice Corrections Emphasis Associate's Degree

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA110	(or higher) Explorations in Math	3
	or	
PL205	Logic	3
	General Education Electives	6

Major Requirements (30 credits)

CJ101	Intro. to Criminal Justice	3
CJ110	Introduction to Corrections	3
CJ130	Client Relations in Corrections	3
CJ140	Correctional Client Growth & Development	3
CJ220	Institutional Corrections	3
CJ240	Community Based Corrections	3
CJ250	Correctional Law	3
CJ319	Substantive Criminal Law	3
	or	
CJ202	Canadian Criminal Law	3
CJ330	Correctional Casework	3
CJ355	Juvenile Justice	3

Support Courses (6 credits)

PS120	Introduction to Legal Process	3
	or	
PS160	Intro. to Canadian Government and Politics	3
S0214	Criminology	3

Electives (8 credits)

FALL		SPRING			
First Year					
CJ101	Intro. to Criminal Justice	3	SD101	Fund. of Speech Communication	3
CJ110	Introduction to Corrections	3	CJ130	Client Relations in Corrections	3
CJ140	Correctional Client Growth and Development	3	EN111	First-Year Composition II	3
EN110	First-Year Composition I	3	PS120	Introduction to Legal Process	3
	General Education Math	3	or		
		<u>3</u>	PS160	Intro. to Canadian Government and Politics	3
		15	General Education Elective		<u>3</u>
					15
Second Year					
CJ240	Community Based Corrections	3	CJ220	Institutional Corrections	3
CJ250	Correctional Law	3	CJ330	Correctional Casework	3
CJ319	Substantive Criminal Law	3	S0214	Criminology	3
	or		CJ355	Juvenile Justice	3
CJ202	Canadian Criminal Law	3		Electives	<u>4</u>
	General Education Elective	3			16
	Electives	<u>4</u>			
		16			

Associate's Degrees

Criminal Justice Law Enforcement Emphasis Associate's Degree

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA110	(or higher) Explorations in Math	3
	or	
PL205	Logic	3
	General Education Electives	6

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
	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
S0103	Cultural Diversity	3
S0214	Criminology	3
PY101	Introduction to Psychology	4

Electives (17 credits)

FALL		SPRING			
First Year					
CJ101	Intro. to Criminal Justice	3	PY101	Introduction to Psychology	4
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
EN110	First-Year Composition I	3	SD101	Fund. of Speech Communication	3
S0214	Criminology	3	S0103	Cultural Diversity	3
	General Education Math	3	EN111	First-Year Composition II	3
		<u>3</u>			<u>3</u>
		15			17
Second Year					
CJ201	Firearms Training	1	CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3	PS120	Introduction to Legal Process	3
CJ243	Investigation	3		Electives	<u>9</u>
	Electives	<u>8</u>			15
		15			

Canadian students may substitute PS160 for PS110.

Early Childhood Education

See School of Education, page 251.

Program Description:

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

Graduates also matriculate into the four-year bachelor's degree program in early childhood education at the University or pursue a degree in human services or elementary education. A total of 62 credits is required.

Career Descriptions:

Graduates of this program normally seek position 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.

Child Care Provider — involvement with children in educational games and learning activities; supervises children at play; and provides general care of children.

Early Childhood Teacher/Head Start Teacher — involvement with children in educational games and learning activities; supervises children at play; maintains records or files.

Administrative Position — oversees a center's operation including budgetary, staffing and equipment needs.

Associate's Degree

Career Choices:

Child Care Provider
Early Childhood Teacher/
Head Start Teacher
Administrative Position

Student Profile:

Are you ...
interested in working with infants, toddlers and pre-school children?
patient and understanding?
interested in helping to mold the children of our future?

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA110	(or higher) Explorations in Math	3
	or	
PL205	Logic	3
	General Education Electives	6

Degree Requirements:

BL105	Function of the Human Body	4
ED101	Foundation of Early Childhood Education	3
ED105	Child Guidance & Welfare	3
ED110	Curriculum Development and Teaching Practice	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
HE104	Nutrition for Early Childhood	3
HE181	First Aid	1
SO103	Cultural Diversity	3
	or	
SO225	Native Cultures of North America	3
SO113	Sociology of the American Family	3
Cognate Required:		
PY155	Lifespan Development	3
	or	
PY265	Child & Adolescent Development	3
PY228	Organizational Behavior	3
	or	
PY301	Exceptional Child & Adolescent	3

FALL	SPRING
First Year	
EN110 First-Year Composition I	EN111 First-Year Composition II
BL105 Function of the Human Body	SO113 Sociology of the American Family
PY155 Life-Span Development	HE104 Nutrition for Early Childhood
or	HE181 First Aid
PY265 Child & Adolescent Development	ED111 Infants & Toddlers: Developmentally Appropriate Practices
ED101 Foundation of Early Childhood Education	ED105 Child Guidance and Welfare
ED110 Curriculum Development and Teaching Practice	
Second Year	
SD101 Fund. of Speech Communication	ED270 Administration of Early Childhood Programs
ED220 Early Childhood Literature	Electives
ED260 Practicum I	ED261 Practicum II
PY* or SO** Elective	General Education Math
	PY* or SO**

*Choose one of the following:
PY301 Exceptional Child & Adolescent or PY228 Organizational Behavior
**Choose one of the following:
SO225 Native Cultures of North America or SO103 Cultural Diversity

Associate's Degrees

Fire Science

See College of Arts, Letters and Social Sciences, page 246.

Associate's Degree

Career Choices:

Firefighter

Fire Safety Officer

Student Profile:

Are you...

interested in the safety of others?

physically fit?

Program Description:

The associate's degree in fire science degree prepares you for entry-level positions with fire departments and some government agencies. You may also be eligible for Michigan Firefighter Certification through the Michigan Firefighters Training Council (MFFTC). Students in this program will have the opportunity to experience a "hands-on" approach by practicing with up-to-date equipment and experiencing live fire training in the burn training center located adjacent to campus. This degree is also compatible with the bachelor of science degrees in fire science and public safety.

Career Descriptions:

Firefighter — works for local and federal fire departments; works for the armed forces; suppresses structural and other types of fire using a variety of methods; acts as emergency medical technician or paramedic.

Fire Safety Officer — works in industry and for the government as fire inspector and safety officer; conducts safety and fire surveys; assists fire professionals in their duties.

Associate's Degrees

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA110	(or higher) Explorations in Math	3
	or	
PL205	Logic	3
	General Education Electives	6

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 (23 credits)

HE190	Prehospital Emergency Care & Crisis Intervention I	4
HE191	Prehospital Emergency Care & Crisis Intervention II	4
SO, PY or PS Electives		9
TC101	Construction I	3
TC102	Construction II	3

Electives (6 credits)

(FS197 and FS220 required for MFFTC certification)

FALL		SPRING			
<i>First Year</i>					
FS101	Introduction to Fire Science	3	HE191	Prehospital Emergency Care and Crisis Intervention II	4
FS111	Hazardous Materials	3	SD101	Fund. of Speech Communication	3
EN110	First-Year Composition I	3	TC102	Construction II	3
TC101	Construction I	3	SO, PY or PS Electives		3
HE190	Prehospital Emergency Care and Crisis Intervention I	4	EN111	First-Year Composition II	3
		<u>16</u>			<u>16</u>
<i>Second Year</i>					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems Equipment	3
SO, PY or PS General Education Electives		6	FS211	Tactics & Strategy	3
General Education Math		3	FS321	Industrial Fire Protection	3
Electives		3	CJ341	Fire Cause & Arson Investigation	3
		<u>15</u>	Electives		<u>3</u>
					<u>15</u>

General Engineering

See College of Engineering
and Mathematics, page 268.

Program Description:

You should enroll in this program if you want to major in engineering but have not yet selected a specific field. You also should enroll in this program if you plan to transfer to an engineering program at another university after two years at Lake Superior State University.

Associate's Degree

63-Hour Program

Associate's Degrees

Departmental Requirements

Engineering Courses

EE105	Fabrication Fundamentals	1
EG101	Intro. to Engineering	2
EG140	Numerical Applications for Engineers	1
EG265	"C" Programming	3
EG340	Advanced Numerical Applications for Engineers	1
ME141	Parametric Modeling	2
ME142	Descriptive Geology	2

Mathematics and Science Courses

CH115	General Chemistry I	5
MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA243	Calculus & Linear Algebra for Engineers	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

	Approved Economics Elective*	3
HU251	Humanities I**	4
	Designated Electives*	7

*Requires advisor approval

**May be used for general education requirement.

General Education Requirements

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD110	Fund. of Speech Communication	3
MA110 (or higher)	Explorations in Mathematics or	3
PL205	Logic	
	General Education Electives	6

FALL		Spring		
First Year				
CH115	General Chemistry I	5	EE105 Fabrication Fundamentals	1
EG101	Intro. to Engineering	2	EG140 Numerical Applications for Engineers	1
EN110	First-Year Composition I	3	MA144 Calculus for Engineering II	4
MA143	Calculus for Engineering I	4	EN111 First-Year Composition II	3
		<u>14</u>	ME141 Parametric Modeling	2
			ME142 Descriptive Geology	2
			Designated Elective*	<u>4</u>
				17
Second Year				
EG265	"C" Programming	3	Approved Economics Elective	3
SD101	Fund. of Speech Communication	3	EG340 Advanced Numerical Applications for Engineers	3
MA243	Calculus & Linear Algebra for Engineers	4	HU251 Humanities I	4
PH231	Applied Physics for Engineers and Scientists I	4	MA310 Differential Equations	3
	Designated Elective*	<u>3</u>	PH232 Applied Physics for Engineers and Scientists II	<u>4</u>
		17		15

General Engineering Technology

See College of Engineering and Mathematics, page 268.

Associate's Degree

62-Hour Program

Program Description:

You should select this program if you are interested in engineering technology but have not decided upon a specific program. You will receive extra advising and schedule courses in different areas to assist in determining career interests. As soon as you choose an engineering technology major, you will transfer to that program.

Associate's Degrees

Departmental Requirements

Engineering and Engineering Technology Courses

EG101	Introduction to Engineering	2
ET110	Applied Electricity & PLC	4
MT225	Statics and Strength of Materials	3
	Technical Electives	20

Mathematics and Science Courses

MA140	Precalculus Mathematics	5
MA143	Calculus for Engineers I	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

Support Course

CS101	Intro. to Microcomputer Applications	3
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Choose Tech Electives from:

CH108	Applied Chemistry	3
	<i>and</i>	
CH109	Applied Chemistry Lab	1
ET175	Applied Electronics	4
MA207	Statistics	3
MA208	Statistical Applications for Quality Control	1
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME141	Parametric Modeling	2
ME142	Descriptive Geology	2
MT215	Design for Manufacturing	4

General Education Requirements

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD110	Fund. of Speech Communication	3
MA110 (or higher)	Explorations in Mathematics	3
	<i>or</i>	
PL205	Logic	3
	General Education Electives	6

FALL		SPRING			
<i>First Year</i>					
EG101	Intro. to Engineering	2	CS101	Intro. to Microcomputer Appl.	3
EN110	First-Year Composition I	3	MA143	Calculus for Engineers I	4
MA140	Precalculus Mathematics	5		Social Science	3
	Tech Elective	3-4	EN111	First-Year Composition II	3
		<u>13-14</u>			<u>13</u>
<i>Second Year</i>					
ET110	Applied Electricity & PLC	4	SD101	Fund. of Speech Communication	3
PH221	Elements of Physics I	4	MT225	Statics & Strength of Materials	4
	Tech Electives	9-11	PH222	Elements of Physics II	4
		<u>17-19</u>		Tech Electives	<u>6-7</u>
					<u>17-18</u>

Health Care Provider

See College of Natural and Health Sciences, page 281.

Program Description:

The associate of applied science degree program serves the community by providing students with the necessary skills and training to provide safe and competent care to patients. Students wishing to obtain an associate of applied science degree would be able to complete the required course work in four semesters. The general education courses required for the associate of applied science degree would apply to the baccalaureate degree in nursing, allowing for a smooth articulation between the two programs if students wish to continue their education.

Career Descriptions:

Hospital Nurse — works in hospital settings providing direct patient care to clients of all ages.

Office Nurse — works in physician offices or outpatient clinics assisting in the direct patient care of clients.

Extended Care — works in long-term care facilities providing care to the elderly.

Mental Health Nurse — works in community mental health centers or group homes providing care for the mentally ill.

Associate of Applied Science

Career Choices:

- Hospital Nurse
- Extended Care Nurse
- Office or Clinical Nurse
- Mental Health Nurse

Student Profile:

Do you ...
like working with people?
like challenges?
want to make a difference in people's lives?

Students wishing to complete this associate of applied science degree must have completed the following: MA086 Introduction to Algebra; BL105 Function of the Human Body or successful completion of two semesters of high school human biology within the past three years.

Nursing	(32 credits)
PN101	Practical Nursing I 4
PN102	Drugs and Dosages 3
PN103	Nursing Care Issues Across the Lifespan 3
PN201	Practical Nursing II 10
PN202	Ethical/Legal Issues Aspects of Practical Nursing 2
PN203	Practical Nursing III 5
PN204	Practical Nursing IV 5
Health Science	(10 credits)
HE186	Basic Nursing Skills 7
HE207	Nutrition Application in Health Care 1
HE208	Nutrition 2
General Education	(6 credits)
EN110	First-Year Composition I 3
SD101	Fund. of Speech Communication 3
Other Disciplines	(15 credits)
PY101	Introduction to Psychology 4
BL121	Human Anatomy and Physiology I 4
BL122	Human Anatomy and Physiology II 4
NS110	Chemistry in Society 3
	<i>or</i>
CH104	Life Chemistry 4
Electives	(3 credits)
Total Degree Credits	(66)

FALL			SPRING		
First Year					
EN110	First-Year Composition I	3	HE207	Nutrition Application in Health Care	1
BL121	Anatomy and Physiology	4	HE208	Nutrition	2
SD101	Fund. of Speech Communication	3	BL122	Anatomy and Physiology	4
PY101	Introduction to Psychology	4	NS110	Chemistry in Society	3
		<u>14</u>	<i>or</i>		
			CH104	Life Chemistry I	3
				Elective	<u>3</u>
					13
Second Year					
HE186	Basic Nursing Skills	7	PN201	Practical Nursing II	10
PN101	Practical Nursing I	4	PN202	Ethical/Legal Aspects of Practical Nursing	2
PN102	Drugs and Dosages	3			<u>12</u>
PN103	Nursing Care Issues Across the Lifespan	3			
		<u>17</u>			
Summer					
PN203	Practical Nursing III	5			
PN204	Practical Nursing IV	5			

Associate's Degrees

Health Fitness Specialist

See College of Natural and Health Sciences, page 281.

Associate's Degree

Career Choices:

Personal Fitness Trainer
Exercise Test Technologist

Student Profile:

Are you...
people oriented?
attracted to the study of human physiology and nutrition?
willing to learn best with hands-on experiences?

Program Description:

This degree prepares you for entry-level positions in the health and fitness industry. Specific course work and experiences prepare you to be certified by the American College of Sports Medicine as an Exercise LeaderSM or an Exercise Test TechnologistSM, as well as certification by the National Strength and Conditioning Association as a Certified Personal Trainer. Students develop fitness assessment skills with current technologies employed for anthropometric, cardiovascular and metabolic functioning.

Career Descriptions:

Personal Fitness Trainer — employed in the fitness industry to assess fitness status of clients and prescribe physical activity and exercise to improve fitness parameters.

Exercise Test Technologist — employed in clinical settings to assist in administering fitness testing activities with individuals suffering from a medical condition under the direction of medical staff.

Associate's Degrees

General Education Requirements (19 credits)	
EN110	First-Year Composition I 3
EN111	First-Year Composition II 3
MA110	(or higher) Explorations in Math 3
	<i>or</i>
PL205	Logic 1
SD101	Fund. of Speech Communication 3
PY101	Introduction to Psychology 4
	Elective 3

Departmental Requirements (31 credits)	
ES140	Health Fitness 3
ES141	Introduction to Movement 3
ES230	Athletic Training I 3
ES248	Psychology of Sport and Performance and Coaching 3
ES262	Exercise Physiology I 3
ES268	Fitness Evaluation I - Field Tests 2
ES275	Nutrition for Sport and Exercise Performance 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
ES	Elective 2

Required Support (12 credits)	
BL121	Human Anatomy & Physiology I 4
BL122	Human Anatomy & Physiology II 4
CH104	Life Chemistry I 3
HE181	First Aid 1
Minimum Credits for Degree 62	

FALL		SPRING	
First Year			
EN110	First-Year Composition I 3	EN111	First-Year Composition II 3
BL121	Human Anatomy & Physiology I 4	BL122	Human Anatomy & Physiology II 4
PY101	Introduction to Psychology 4	CH104	Life Chemistry I 3
MA110	(or higher) Explorations in Math 3	ES141	Introduction to Movement 3
	<i>or</i>	ES295	Practicum 1
PL205	Logic 1	RA150	Individual Physical Fitness 1
ES140	Health Fitness 3	HE181	First Aid 1
	17		16
Second Year			
ES268	Fitness Evaluation I — Field Tests 2	RC280	Readiness in Games, Activities and Sports 3
ES248	Psychology of Sport and Performance and Coaching 3	SD101	Fund. of Speech Communication 3
ES262	Exercise Physiology I 3	ES295	Practicum 1
ES230	Athletic Training I 3	ES275	Nutrition for Sport and Exercise Performance 2
ES	Elective 2	RC105	Program Development and Leadership in Recreation and Leisure Services 3
	Elective 3	ES390	Recreation Leader Apprenticeship 1
	16		3
			16

Internet/Network Specialist

See College of Engineering and Mathematics, page 268.

Program Description:

This degree provides you with knowledge in the use of computer networks as they apply to commercial and industrial enterprises. You will be prepared to analyze the needs of a user, to design a computer network system to satisfy those needs, and to modify and maintain the network environment relative to both hardware and software.

Most organizations make use of the Internet and the World Wide Web. You will use state-of-the-art software tools to prepare you to meet the growing needs of the business world.

One of the main objectives in this program is to develop an understanding of the business world so that you can effectively communicate with all levels of management.

Career Descriptions:

Information Technology Specialist — works in an IT group at a large company, research institute or school.

Network Analyst — designs, installs, maintains, troubleshoots and administers local area network systems.

Webmaster — designs and creates Web pages, manages Web server software and consults with clients about WWW needs.

Associate's Degree

Career Choices:

Information Technology Specialist

Network Analyst

Webmaster

Student Profile:

Do you ...

like working with computers?

enjoy the challenge of problem-solving?

Departmental Courses (25 credits)

CS103	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3
CS106	Advanced Web Page Design and Web Site Administration	3
CS211	Database Applications	3
CS221	Computer Networks	3
CS271	Network Hardware and Software	3
CS281	Network Design and Implementation	3
CS290	Independent Study in Computer Science	4

Support Courses (12 credits)

DP163	Troubleshooting and Repair of Personal Computers	3
BA105	Business Math	3
BA121	Introduction to Business	3
BA231	Business Communications	3
	Free Electives	7

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD110	Fund. of Speech Communication	3
MA110 (or higher)	Explorations in Mathematics	3
	or	
PL205	Logic	3
	General Education Electives	6

Free Electives (7 credits)

Total Credits: 62

FALL		SPRING			
<i>First Year</i>					
CS103	Survey of Computer Science	3	CS106	Advanced Web Page Design and Web Site Administration	3
CS105	Intro. to Computer Programming	3	DP163	Troubleshooting and Repair of Personal Computers	3
EN110	First-Year Composition I	3	BA121	Introduction to Business	3
BA105	Business Math	4	SD101	Fund. of Speech Communication	3
	Free Elective	3	EN111	First-Year Composition II	3
		<u>16</u>			<u>15</u>
<i>Second Year</i>					
CS211	Database Applications	3	CS221	Computer Networks	3
CS271	Network Hardware & Software	3	CS290	Independent Studies in CS	4
CS281	Network Design and Implementation	3	BA231	Business Communications	3
	General Education Elective	3		Gen. Ed. Elective	3
MA110 (or higher)	Explorations in Math	3		Free Elective	3
	or				<u>16</u>
PL205	Logic	<u>18</u>			

Associate's Degrees

Legal Assistant Studies

See College of Arts, Letters
and Social Sciences, page 235.

Associate's Degree

Career Choices*:

Litigation Legal Assistant
Corporate Legal Assistant
Criminal Law Legal Assistant
Governmental Legal Assistant
Real Estate Legal Assistant

Student Profile:

Do you have ...

- an interest in the law?
- a desire and commitment to help others?
- a good work ethic?
- good verbal and written communication skills?
- detail orientation and good organizational skills?
- a well-established set of ethics?
- self-motivation, initiative and a positive outlook?
- good human relation skills?
- an ability to think logically?
- a willingness to learn new skills and to be challenged?

Program Description:

The legal assistant profession is one of the occupations projected to grow the fastest through the year 2010 according to the U.S. Department of Labor. A legal assistant (or paralegal) is a valued member of the legal team and works under the supervision of attorneys.

This program is designed to train qualified legal assistants capable of working in a variety of areas of the law and in a variety of work environments. Consequently, the role and job duties of a legal assistant vary depending on the areas of law and work environment in which a legal assistant is employed. Such diversity, varied challenges, and employment possibilities are what makes the legal assistant profession so interesting and rewarding.

There are four different degrees or offerings in legal assistant studies. They are as follows: (1) a four-year baccalaureate degree in legal assistant studies with an 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; (2) a two-year associate's degree in legal assistant studies; (3) a post-baccalaureate (one-year) certificate in legal assistant studies (which is available to students who already have a bachelor's degree in some other discipline and wish to make a career change or advancement); or (4) a minor in legal assistant studies which can complement various majors (and may also be helpful to students who are planning on attending law school). The requirements for these programs are based upon the guidelines of the National Association of Legal Assistants.

Career Descriptions*:

Litigation Legal Assistant - conducts legal, factual and computerized research; drafts legal pleadings and documents; interviews clients and witnesses; investigates, gathers and organizes case information; assists at trial.

Corporate Legal Assistant - drafts and/or analyzes various legal documents; attends meetings, negotiations or closings; performs legal and factual research; monitors compliance with applicable industry regulations; assists attorneys with preparation for collective bargaining, contract negotiations, administrative hearings or trials.

Criminal Law Legal Assistant - conducts comprehensive interviews of defendants, law enforcement, victims, and/or witnesses; performs case and field investigations; locates and coordinates usage of applicable experts; prepares motions, briefs or other legal documents; acts as a litigation assistant during trial and any appeal.

Governmental Legal Assistant - works as an immigration specialist; civil rights analyst; environmental protection specialist; mediation specialist; legislative analyst; workers compensation claims examiner, etc. (even the White House has employed legal assistants).

Real Estate Legal Assistant - conducts title searches; drafts real estate closing documents; monitors compliance with title, survey, disclosure and/or regulatory requirements; schedules and participates in real estate closings.

**Note: The above career descriptions are only a sampling of the numerous avenues available to legal assistants. See next page for additional employment listings.*

Legal Assistant Studies

Legal Assistant Studies Associate's Degree

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

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

Required Courses (47 credits)

BA254	Business Law I	3
BA255	Business Law II	3
CJ319	Substantive Criminal Law	3
LA102	Legal Research and Case Analysis	3
LA125	Civil Litigation and Procedure	4
LA140	Personal Injury Litigation & Investigative Techniques	3
LA150	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
OA119	Accounting Procedures	4
PS110*	Intro. to American Government & Politics	4
SD101*	Fund. of Speech Communication	3

Cognate Required (2-3 credits)

Choose two to three credits from:

CS101	Intro. to Microcomputer Appl.	3
DP160	Personal Computers Work-Station Operating Systems	1-3
DP225	Word Processing Techniques	3
DP231	Database	3
DP235	Spreadsheets	3
DP250	Desktop Publishing & Presentation Design	3

General Education Requirements (15 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
MA110	(or higher) Explorations in Math	3
PL205	Logic	3
	General Education Electives	6

Electives (3-4 credits)**

Electives are to be chosen in consultation with advisor.

*PS110 and SD101 also meet general education requirements.

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

FALL		SPRING		
First Year				
EN110	First-Year Composition I	3	LA125 Civil Litigation & Procedure	4
LA102	Legal Research & Case Analysis	3	LA140 Personal Injury Litigation & Investigative Techniques	3
LA150	Legal Assistant Profession & Ethical Considerations	3	PS110 Intro. to American Government and Politics	4
SD101	Fund. of Speech Communication	3	Cognate - Computer	2-3
OA119	Accounting Procedures	4	EN111 First-Year Composition II	3
UN101	University Seminar	1		
		17		16-17
Second Year				
	General Education Math	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	Gen. Ed.	3
BA254	Business Law I	3	Electives	3-4
CJ319	Substantive Criminal Law	3		
		17		15-16

Employment:

Legal assistants are employed with ...

- private law firms
- corporations
- financial institutions
- government (federal, tribal, state or local)
- courts and mediation systems
- real estate offices and title companies
- insurance companies
- special interest groups
- prosecutor and public defender offices
- educational institutions
- financial service organizations
- credit and collection agencies
- service, consulting or publishing companies

Associate's Degrees

Liberal Arts

See General Education Requirements, page 72.

Associate of Arts

Career Choices:

Computer Operator

Manager

Supervisor

Student Profile:

Are you ...

undecided about your future career choice?

in need of an associate's degree for employment purposes?

Program Description:

This degree is offered to students who complete general education requirements, any minor* presently offered by the University, and free electives for a total of 62 credits hours (minimum). 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.

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.

**See minors section.*

Career Descriptions:

Computer Operator — oversees operation of computer hardware systems; anticipates problems before they occur as well as repair problems; maintains security; troubleshoots; networks; and maintains large databases.

Manager — maintains efficiency and profitability; implements programs for budgeting; sets goals and objectives; and oversee general managers and other staff.

Supervisor — performs administrative tasks; supervises staff; sets standards; meets deadlines; conducts performance evaluations; and interviews prospective employees.

Liberal Arts Associate of Arts

General education requirements for the liberal arts associate's degree include classes in communication skills, mathematics, humanities, social science and natural science.

Communication Skills

EN110	First-Year Composition I	3
EN111	First-year Composition II	3
SD101	Fund. of Speech Communication	3

Humanities

HU251	Humanities I	4
-------	--------------	---

Choose one from:

AT250	Art History and Appreciation I	4
AT251	Art History and Appreciation II	4
HU240	Native Art and Culture	3
HU252	Humanities II	4
HU255	World Mythology	4
MU220	History and Appreciation of Music I	4
MU221	History and Appreciation of Music II	4
NA240	Native Art and Culture	3
PL302	Ancient Western Philosophy	3
	Second Year Foreign Language	8

Mathematics

(3-5 credits)

MA110	(or higher) Explorations in Math or	3
PL205	Logic	

Natural Science

Choose two (8 credits) from:

BL105	Function of the Human Body	4
BL109	General Biology	4
BL122	Human Anatomy & Physiology II	4
BL204	General Microbiology	4
CH105	Life Chemistry II	4
CH108/109	Applied Chemistry & Lab	4
CH115	General Chemistry I	5
CH116	General Chemistry II	4
GE115	Field Excursions in Earth Science	4
GE121	Physical and Historical Geology I	4
GE122	Physical and Historical Geology II	4
GG106	Physical Geography: Landforms	4
GG108	Physical Geography: Meteorology and Climatology	4
NS101	Conceptual Physics	4
NS102	Introduction to Geology	4
NS103/104	Environmental Science & Lab	4
NS110	Chemistry in Society	4
NS116	Introduction to Oceanography	4
NS119	Descriptive Astronomy	4
PH221	Elements of Physics I	4
PH231	Applied Physics for Engineers	

FALL			SPRING		
First Year					
EN110	First-Year Composition I	3	SD101	Fund. of Speech Communication	3
	Social Science Elective	3-4		Social Science Elective	3-4
	Mathematics or PL205	3-5		Natural Science Elective	4
	Minor Course	3		Minor Course	3
	Minor Course	4	EN111	First-Year Composition II	3
		16-18			16-17
Second Year					
HU251	Humanities	4		Humanities	3-4
	Natural Science Elective	4		Soc. Sci. Diversity	3-4
	Minor Course	3		Minor Course	3
	Minor Course	3		Elective	1
	Minor Course	3			13-15
		17			

and Scientists I

4

Social Science

Choose two from different disciplines (6-8 credits):

EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
EC208	Honors Prin. of Microeconomics	3
EC209	Honors Prin. of Macroeconomics	3
EC302	Managerial Economics	4
GG201	World Regional Geography	4
GG302	Economic Geography	4
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
PS110	Intro. to American Government and Politics	4
PS160	Intro. to Canadian Government and Politics	4
PS241	Intro. to International Relations	4
PY101	Introduction to Psychology	4
PY155	Lifespan Development	3
SO101	Introduction to Sociology	3
SO102	Social Problems	4
SO113	Sociology of the American Family	3

Social Science - Diversity

Choose one class (3-4 credits) from:

BA308	Managing Cultural Differences	3
GG306	Cultural Geography	3
HE328	Multicultural Approaches to Health Care	3
NA225	Native Cultures of North America	3
PS333	Human Rights and World Politics	4
SO103	Cultural Diversity	3
SO213	Introduction to Anthropology	3
SO225	Native Cultures of North America	3
SO226	Races and Minorities	3
SO321	Sociology of Women	3
TE250	Student Diversity and Schools	3

Machine Tool Technology

See College of Engineering and Mathematics, page 259.

Associate of Applied Science

Career Choices:

- Tool Room Machinist
- Shop Floor Machinist
- Production Machinist
- Job Shop Machinist
- Machine Repair Mechanic
- Entry-level CAD-CAM Operator
- Entry-level Quality Technician

Student Profile:

- Do you ...
- like to work with machinery?
 - enjoy working with your hands?
 - like to build equipment?

Program Description:

The machine tool technology program prepares you for entry-level positions in a wide range of manufacturing fields. It combines a strong hands-on component, technical skills training, and applied problem solving. In addition, students develop the writing and communication skills necessary in the field. As a "1+1" program, it allows you to complete a significant proportion of your course work while still enrolled at the Sault Area Career Center.

Career Descriptions:

Tool Room Machinist — Specializes in sharpening cutters, operating drills, mills, and lathes and building small fixtures and dies.

Shop Floor Machinist — Sets up and operates drills, mills, lathes, shapers and other manufacturing equipment.

Production Machinist — Sets up and operates specialized equipment for mass production.

Job Shop Machinist — Makes drawings from sketches, determines customer needs and produces parts for customers.

Machine Repair Mechanic — Sets up and repairs broken equipment, performs preventive and scheduled maintenance, and calibrates equipment after repairs.

Entry-level CAD-CAM Operator — Runs CNC equipment,

Entry-level Quality Technician — Performs initial quality audits.

Associate's Degrees

FALL		SPRING		
First Year (common)				
TC191	Class Internship	4	TC191 Class Internship	4
TC192	On-Site Internship	2	TC192 On-Site Internship	2
MA	Industrial Math (or equivalency)	4	TC118 Drafting	3
TC110	Industrial Safety	2	CS101 Intro. to Microcomputer Applications	3
		<u>12</u>		<u>12</u>
Summer				
TC192	On-Site Internship	6		
Second Year				
ME140	Computer-Aided Drafting and Geometric Dimensioning and Tolerancing (CAD and GD&T)	4	ME115 Manufacturing Processes II	3
ME110	Manufacturing Processes I	3	MT215 Design for Manufacturing	3
TC210	Graphical Problem	2	MT265 Quality Engineering	3
SS	Social Science Elective	3	TC135 Assembly Drawing	3
HE181	First Aid	1	Elective	4
EN110	First-Year Composition I	3		<u>16</u>
		<u>16</u>		

Manufacturing Engineering Technology

See College of Engineering and Mathematics, page 259.

Program Description:

The manufacturing engineering technology associate's degree program prepares you to work with traditional and modern manufacturing equipment and methods in today's high-tech manufacturing environment. Graduates will have theoretical and practical knowledge in traditional manufacturing processes such as turning, milling, foundry and welding along with newer technologies such as robotics, CAD (computer-aided drafting), and CAM (computer-aided manufacturing).

Throughout the program, students acquire cross-discipline skills in manufacturing, computer applications, electronics and mechanical technology that are in high demand in industry.

Career Description:

The manufacturing industry is experiencing high growth while becoming more scientific or "high-tech." Both factors have resulted in a high demand for individuals with modern, computer-based manufacturing skills. Typical job categories for graduates of this program are robot programmer, manufacturing technician, systems programmer, mechanical technician, CAD draftsman, CAM programmer/operator, and electro-mechanical maintenance engineer.

Departmental Requirements (54 Credits)

Engineering and Engineering Technology Courses		
EE125	Digital Fundamentals	4
ET110	Applied Electricity	4
ET175	Applied Electronics	4
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME141	Parametric Modeling	2
ME142	Descriptive Geometry	2
ME275	Engineering Materials	3
MT225	Statics and Strength of Materials	3
RS280	Robotics Technology	2
RS281	Robotics Technology Lab	1

FALL			SPRING		
First Year					
MA092	Intermediate Algebra	(4) ¹	ME115	Manufacturing Processes II	3
	or		EN111	First-Year Composition II	3
	Social Science Elective	3	MA140	Precalculus Mathematics	5
ME110	Manufacturing Processes I	3	MA207	Prin. of Statistical Methods	3
ME141	Parametric Modeling	2	CS101	Intro. to Microcomputer Applications	3
ME142	Descriptive Geometry	2			17
EN110	First-Year Composition I	3			
EG101	Introduction to Engineering	2			
		15-16			
Second Year					
PH221	Elements of Physics I	4	MT225	Statics & Strength of Materials	3
CH115	General Chemistry I	5	ME275	Engineering Materials	3
ET110	Applied Electricity	4	SD101	Fund. of Speech Communication	3
MA208	Statistical Applications for Quality Control ²	1	ET175	Applied Electronics	4
RS280	Robotics Technology	2	EE125	Digital Fundamentals	4
RS281	Robotics Technology Lab	1			17
		17			

Total credits required to complete associate's degree = 66.

¹Students placed in MA092 should take the social science elective in the summer or later in the curriculum.

Associate's Degree

Career Choices:

- Robot Programmer
- Manufacturing Technician
- Systems Programmer
- Mechanical Technician
- CAD Draftsman
- CAM Programmer/Operator
- Electro-Mechanical Maintenance Engineer

Student Profile:

- Do you have...*
- a good work ethic and ability to think logically?
 - a willingness to learn new manufacturing skills?
 - an interest in computer applications and electrical-mechanical topics?
 - a willingness to learn additional math topics?
 - verbal and written communication skills?

Mathematics and Science Courses

CH115	General Chemistry I	5
MA140	Precalculus Mathematics*	5
MA207	Principles of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1
PH221	Elements of Physics I*	4
Support Course		
CS101	Intro. to Microcomputer Applications	3
General Education Requirements (18 credits)		
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD110	Fund. of Speech Communication	3
MA110	(or higher) Explorations in Mathematics	3
	or	
PL205	Logic	6
	General Education Electives	6

*May be used as general education requirement.

Associate's Degrees

Natural Resources Technology

See College of Natural and Health Sciences, page 273.

Associate's Degree

Career Choices:

Natural Resource Technician
Forestry, Wildlife, Parks

Student Profile:

Do you ...

enjoy the outdoors and are you willing to work under all weather conditions?

have an awareness of and respect for the environment?

have a strong work ethic?

work cooperatively?

have strong oral and written communication skills?

Students are required to take sufficient elective credits to reach the minimum of 62 semester credits needed for graduation.

Biology, Chemistry and Environmental Science Requirements (29 Credits)

BL102	Careers in Natural Resources	1
BL140	Introduction to Fisheries & Wildlife	1
BL230	Introduction to Soils	4
BL240	Natural History of Vertebrates	3
BL284	Principles of Forestry	4
BL286	Watershed Management	3
CH108	Applied Chemistry	3
CH109	Applied Chemistry Lab	1
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
EV128	Geographic Information Systems	1
EV226	Geospatial Analysis I	1
EV227	Geospatial Analysis II	1
NS103	Environmental Science	3

Other Departments (12 Credits)

CS101	Intro. to Microcomputer Applications	3
HE 181	First Aid	1
RC101	Introduction to Recreation and Leisure Services	3
TC140	Outdoor Construction/Landscaping	3
TC111	Small Engine Mechanics	2

General Education (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
	General Education Electives	6
MA111	College Algebra	3

Program Description:

The natural resources technology program stresses the acquisition of field skills necessary for success in a natural resources center, as well as the theoretical foundations for these skills. This practical knowledge is enriched by course materials which emphasize communication skills along with the links between society, economics, policy and the natural resource base. This program can be taken as a stand alone two-year program, can constitute the first half of the bachelor of science in parks and recreation management, or it can be used in conjunction with a three-year criminal justice program to prepare a student for a career in conservation law. The natural resource technology program can also serve as a convenient stepping stone into the Fisheries & Wildlife program.

All natural resource technology students are strongly encouraged to participate in at least one summer of work or volunteer experience in the natural resource field to gain the professional experience and contacts they will need to begin their careers.

Continuing education to bachelor's degree program — The high degree of competition in the natural resource field makes the pursuit of a bachelor's degree highly desirable. Programs which join well with the NRT degree are the parks and recreation management degree, the fisheries & wildlife degree and the 2+3 criminal justice degree programs. These programs lead to careers such as conservation officer, park naturalist, expedition leader, guide or recreation specialist.

Career Description:

Natural Resource Technician — Forestry, wildlife, fisheries and park technicians are responsible for data collection and other hands-on work in either the public or private sector.

FALL		SPRING		
First Year				
BL140	Intro. to Fisheries & Wildlife	1	CH108 Applied Chemistry	3
EN110	First-Year Composition I	3	CH109 Applied Chemistry Lab	1
EV125	Geospatial Basics	1	EV127 Global Positioning Systems	1
EV126	Air Photo Interpretation	1	EV128 Geographic Information Systems	1
NS103	Environmental Science	3	EN111 First-Year Composition II	3
BL102	Careers in Natural Resources	1	HE181 First Aid	1
CS101	Intro. to Microcomputer Applications	3	MA111 College Algebra	3
RC101	Intro. to Recreation & Leisure Services	3	Elective	3
		16		16
Second Year				
BL230	Introduction to Soils	4	BL286 Watershed Management	3
BL240	Natural History of Vertebrates	3	BL284 Principles of Forestry	4
EV226	Geospatial Analysis I	1	Elective	3
EV227	Geospatial Analysis II	1	TC111 Small Engine Mechanics	2
TC140	Outdoor Construction/Landscaping	3	Elective	3
SD101	Fund. of Speech Communication	3		15
		15		

Associate's Degrees

Office Administration

See College of Business and Economics, page 257.

Program Description:

This program is designed for those seeking careers in an office setting.

Students are trained on a variety of computer application software packages and formats. Strong personal skills are emphasized. Good basic writing skills are required. The majority of computer-based classes are taught in the School of Business and Economics computer lab using current computer technology.

Career Descriptions:

Office Administrator/Administrative Assistant — provides support services in keyboarding, transcribing, collecting, preparing and recording report information; operating office business machines; and a variety of office duties.

Secretary — performs and coordinate office duties; schedules appointments; maintains files, takes dictation; types letters; makes travel arrangements; contacts clients; and operates office equipment.

Office Manager — maintains efficiency and profitability; implements budgets; motivates workers; sets goals and objectives.

Clerk — performs many duties including payroll, auditing, accounts receivable and payable; maintains files; types correspondence; operates office equipment.

Associate's Degree

Career Choices:

Office Administrator
Administrative Assistant
Secretary
Office Manager
Clerk

Student Profile:

Do you...

enjoy working with people?

have detail orientation and flexibility?

like to work in a fast-paced environment?

enjoy performing routine office duties?

like working with databases, spreadsheets and word processing?

Associate's Degrees

Degree Requirements (64 credits)

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
	General Education Electives	6
MA110	(or higher) Explorations in Math	3-5
	or	
PL205	Logic	

Departmental Requirements (42-44 credits)

BA226	Records Management	3
BA231	Business Communications	3
BA121	Introduction to Business	3
BA105	Business Mathematics	3
DP121	Computer Applications for Business	3
DP231	DataBase	3
DP235	Spreadsheets	3
DP250	Desktop Publishing	3
DP225	Word Processing Techniques	3
OA111	Keyboarding/Document Formatting I	3
OA112	Keyboard Skillbuilding	2-4
OA113	Document Formatting II	3
AC132	Principles of Accounting I	4
	or	
OA119	Accounting Procedures	4
OA235	Automated Office Systems	3

Business Electives (4-6 credits)

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

FALL		SPRING			
First Year					
OA111	Keyboarding/Document Formatting I	3	OA112	Keyboard Skillbuilding	2
EN110	First-Year Composition I	3	OA113	Document Formatting II	3
BA105	Business Mathematics	3	EN111	First-Year Composition II	3
DP121	Computer Applications for Business	3	SD101	Fund. of Speech Communication	3
	General Education Elective	3	BA121	Introduction to Business	3
		15		Designated Business Elective	3
					17
Second Year					
DP225	Word Processing Techniques	3	BA231	Business Communications	3
OA119	Accounting Procedures	4	OA235	Automated Office Systems	3
	or		BA226	Records Management	3
AC132	Principles of Accounting I			General Education elective	3
DP250	Desktop Publishing and Presentation Design	3	DP235	Spreadsheets	3
		3	DP231	DataBase	3
MA110	Explorations in Mathematics	3			18
	Designated Business Elective	2-3			
		15-16			

Paramedic Technology

See College of Natural and Health Sciences, page 281.

Associate's Degree

Career Choices

- Emergency Paramedic
- Firefighter-Paramedic
- Public Safety Officer
- Hospital Technician

Student Profile:

Are you...

action-oriented, seeking a challenging and rewarding career?

interested in medicine?

good at working with people?

highly motivated with good leadership qualities?

Paramedic Technology (26 credits)

HE211	Emergency Pharmacology I	2
HE212	Emergency Pharmacology II	2
HE251	Advanced Emergency Care I	4
HE252	Advanced Emergency Care II	4
HE261	Emergency Cardiology I	2
HE262	Emergency Cardiology II	2
HE284	Advanced Skills and Situations I	3
HE285	Advanced Skills and Situations II	3
HE297	Paramedic Clinical I	2
HE298	Paramedic Clinical II	2

Health Science (13 credits)

HE101	Intro. to Medical Terminology	2
HE190	Prehospital Emergency Care I	4
HE191	Prehospital Emergency Care II	4
HE232	Pathophysiology	3

General Education (16-17 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA110	(or higher) Explorations in Math	3
PL105	Logic	3
NS110	Chemistry in Society	3
	General Education Electives	3

Other Disciplines (8 credits)

BL121	Human Anatomy and Physiology I	4
BL122	Human Anatomy and Physiology II	4

Total Degree Credits **63**

Program Description:

Paramedics are trained to aggressively manage all types of emergency situations by providing scene control, emergency medical care and patient transport to a medical facility or trauma center. The paramedic is an integral part of the health care team, serving as an extension of the hospital emergency department. Paramedics provide a variety of skilled functions in the pre-hospital phase of patient care, often the most critical period of care. The professional paramedic is highly motivated and qualified by education and certification to provide pre-hospital care under the supervision of a physician director of the Emergency Medical Service System.

This program is designed to allow current fire science and public safety students to earn a minor and obtain their paramedic certification; it also allows students to obtain paramedic certification without committing to a four-year degree. Students can be certified as an Emergency Medical Technician-Basic after the first year with little or no previous training; and as a Paramedic at the end of the second year. Graduates will be eligible to challenge state and/or national licensure examination for both EMT-Basic and paramedic license.

Career Descriptions:

Emergency Paramedic — works in the pre-hospital setting, providing emergency care and scene management in all types of emergency situations.

Firefighter-Paramedic — works in civilian or private setting, providing fire suppression, rescue operations and emergency care.

Public Safety Officer — works in the community, providing emergency care, fire/rescue and law enforcement services to the general public.

Hospital Technician — works in the hospital or trauma center setting, providing staff support services in critical care areas including the emergency department and critical care/intensive care units.

FALL		SPRING			
First Year					
EN110	First-Year Composition I	3	EN111	First-Year Composition II	3
BL121	Human Anatomy and Physiology I	4	BL122	Human Anatomy and Physiology II	4
HE101	Intro. to Medical Terminology	2	SD101	Fund. of Speech Communication	3
NS110	Chemistry in Society	4	MA110	Explorations in Mathematics	3
HE190	Prehospital Emergency Care I	4	HE191	Prehospital Emergency Care II	4
		<u>17</u>			<u>17</u>
Second Year					
HE211	Emergency Pharmacology I	2	HE212	Emergency Pharmacology II	2
HE251	Advanced Emergency Care I	4	HE252	Advanced Emergency Care II	4
HE261	Emergency Cardiology I	2	HE262	Emergency Cardiology II	2
HE284	Advanced Skills and Situations I	3	HE285	Advanced Skills and Situations	3
HE297	Paramedic Clinical I	2	HE298	Paramedic Clinical II	2
HE232	Pathophysiology	3		General Education Elective	3-4
		<u>16</u>			<u>16-17</u>

Associate's Degrees

Personal Computer Specialist

See College of Business and Economics, page 266.

Program Description:

Personal computers of today outperform the mainframe computers of a generation ago at a fraction of the cost. This associate's degree trains individuals to assist personal computer users. They will be able to assemble, upgrade, maintain, troubleshoot, and repair personal computers. Computer skill courses are combined with general education business courses.

Career Descriptions:

Computer professionals are in demand by businesses of all sizes to assemble, upgrade, maintain and repair the personal computers which are on virtually on every office desk. The PC specialist is also working in the area of peer-to-peer and client-server local area networks as well as in configuring systems for maximum efficiency of the systems. PC specialists frequently install and operate user application software packages as well as train individuals in the use of these programs.

Computer Sales/Installer — sells and installs computers; maintains current knowledge in advancement of today's computers; installs hardware and software.

Network Installer and Maintenance Worker — installs hardware and software; provides networking capabilities; troubleshoots; maintains computers to prevent problems.

Associate's Degree

Career Choices

Computer Sales/Installer
Network Installer
and Maintenance Worker

Student Profile

Are you...

a people person?

enthusiastic and eager to learn about business from the roots up?

Required for Degree 62 credits

General Education Requirements 18 credits

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
MA110	(or higher) Explorations in Math	3
	<i>or</i>	
PL205	Logic	3
SD101	Fund. of Speech Communication	3
	General Education Electives	6

Department Requirements 37 credits

OA119	Accounting Procedures (or AC132 and AC133)	4
BA231	Business Communications	3
DP121	Computer Applications in Business	3
DP231	DataBase	3
DP235	Spreadsheets	3
DP160	Personal Computers Workstation Operating Systems	3
DP163	Troubleshooting & Repair of Personal Computers	3
OA111	Keyboarding/Document Formatting I <i>or</i>	3
DP225	Word Processing Techniques	3
DP250	Desktop Publishing and Presentation Design	3
DP260	Personal Computers Network Operating Systems	3
DP263	Storage, Protection & Recovery of PC	3

Business or Computer Science Electives 9

BA121	Introduction to Business	3
BA254	Business Law I	3
CS105	Intro. to Computer Programming	3
CS106	Advanced Web Page Design and Web Site Administration	3
CS271	Network Hardware and Software	3
CS281	Network Design and Implementation	3
FN242	Personal Finance	3
FN245	Principles of Finance	3
MK281	Marketing Principles and Strategy	3

FALL		SPRING	
First Year			
OA111	Keyboarding/Document Formatting I	3	
EN110	First-Year Composition I	3	
	Gen. Ed. Electives	3	
DP121	Computer Applications for Business	3	
BA/CS	Elective	3	
		15	
Second Year			
OA119	Accounting Procedures	4	
DP250	Desktop Publishing and Presentation Design	3	
DP235	Spreadsheets	3	
BA/CS	Elective	3	
MA110	Explorations in Math	3	
		16	
			16

Associate's Degrees

Skilled Trades Occupations

Contact the Great Lakes Academy
for additional information.

Associate of Applied Science

Career Choices:

Career Journeyman

Business Agent

Apprenticeship Coordinator

Program Description:

The skilled trades occupations program prepares apprentices and journeymen for a variety of positions within labor unions and enhances their skill levels in key subject areas. The program provides a solid core of general education courses supplemented by electives pertinent to their respective union.

Career Description:

The skilled trades industry has experienced unprecedented growth for the past 10 years and the need for skilled craftsmen will increase due to extensive retirements of current employees. Typical careers focus on the application of an individual's particular skilled trade and other positions within the labor arena.

Associate's Degrees

Student Profile:

Do you ...

like to work with your hands?

like operating equipment and machines?

like an active work environment?

Departmental Requirements		(40 credits)
Apprenticeship Training I		5
Apprenticeship Training II		5
Apprenticeship Training III		5
Apprenticeship Training IV		5
Apprenticeship Training V		5
Apprenticeship Training VI		5
Apprenticeship Training VII		5
Apprenticeship Training VIII		5
General Education/Support Courses		
CS101	Intro. to Microcomputer Appl.	3
EN105	Technical Writing for Skilled Trades	3
HS133	Labor History in the United States	4
MA101	Technical Mathematics for Skilled Trades	3
Electives		9
Total Credits		62

Substance Abuse Prevention and Treatment

See College of Arts, Letters and Social Sciences, page 246.

Program Description:

This associate's degree program provides training in substance abuse counseling to prepare you 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.

This associate's 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, outpatient 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's degree may apply to continue in the B.S. in human services program to qualify for entry-level counseling positions.

Students completing the associate's 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.

Career Descriptions:

Paraprofessional Worker — works in hospitals, treatment centers and prevention programs. Assists professionals in outpatient programs, assessment centers, detoxification units and residential programs. May develop educational presentations and materials.

Substance Abuse Worker — provides needed services for persons suffering from a pathological abuse of a variety of chemical substances.

Corrections Worker — operates as corrections officer within secure correctional facilities to provide clients with methods of changing criminal behavior.

Associate's Degree

Career Choices:

Paraprofessional Worker

Substance Abuse Worker

Corrections Workers

Student Profile:

Do you...

have patience?

understand people in trouble?

want to be a good role model?

view yourself as ethical and caring?

Associate's Degrees

Substance Abuse Prevention and Treatment

Substance Abuse Prevention and Treatment Associate's Degree

Required Courses (38 credits)

BL105	Function of the Human Body	4
HM204	Fundamentals of Drug Abuse	3
HM250	Human Services Practicum	9
HM292	Alcohol Abuse Prevention & Treatment	3
PY101	Introduction to Psychology	4
PY201	Communication Skills in Counseling	3
PY259	Abnormal Psychology	3
SO242	Sociology of Sex	3
SO341	Addiction	3
SO344	Social Welfare Systems	3

General Education Requirements (18 credits)

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD101	Fund. of Speech Communication	3
MA110	(or higher) Explorations in Math	3
	<i>or</i>	
PL205	Logic	3
	General Education Electives*	6
	<i>*met by BL105 and PY101</i>	

Cognates- Required (6 credits)

SO225	Native Cultures of North America	3
	<i>or</i>	
SO103	Cultural Diversity	3
PY291	Group Counseling	3
	<i>or</i>	
PY391	Family Therapy	3

Electives (8 credits)

General education requirements and sufficient electives must be completed to total a minimum of 64 semester credits.

Total Credits Required: 64

Fall		Spring			
First Year					
EN110	First-Year Composition I	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	EN111	First-Year Composition I	3
	General Education Math	3	SO341	Addiction	3
		<u>17</u>			<u>15</u>
Second Year					
SO242	Sociology of Sex	3	HM250	Human Services Practicum	9
SD101	Fundamentals of Speech	3	PY291	Group Counseling	3
SO225	Native Cultures of North America	3		<i>or</i>	
	<i>or</i>		PY391	Family Therapy	3
SO103	Cultural Diversity	3	SO344	Social Welfare System	3
	Electives	8			<u>3</u>
		<u>17</u>			<u>15</u>

Associate's Degrees

Technical Accounting

See College of Business
and Economics, page 266.

Program Description:

This program is designed for those who do not plan to go to college for four years but desire a working knowledge in the field of accounting. The program provides students with knowledge in the accounting techniques used in business as well as knowledge of economics, business law, data processing and business communication. After completing this program, you may transfer to the four-year program without loss of credits.

Career Descriptions:

Accounts Receivable/Payable Clerk — posts details of transactions; totals accounts and computes interest charge; monitors loans.

Payroll Clerk — distributes and collects time sheets; computes pay including calculations of taxes, insurances or payroll deductions; maintains backup files. Payroll clerks keep up with changes in tax and deduction laws.

Bookkeeper — handles all aspects of financial transactions; records debits and credits; compares current and past balance sheets; summarizes details of separate ledgers; and prepares reports for supervisors and managers.

Accounting Data Entry — enters data into computer; edits current information; proofreads new entries.

Cost Accounting Clerk — posts details of transactions; maintains ledgers; accounts payable and receivable; total, reconcile and compute interest charges.

Associate's Degree

Career Choices

Accounts Receivable/
Payable Clerk

Payroll Clerk

Bookkeeper

Accounting Data Entry

Cost Accounting Clerk

Student Profile:

Do you...

like system and order?

work well with numbers and
information?

work independently and have
good interpersonal skills?

Associate's Degrees

General Education Requirements (18 credits)

EC201	Prin. of Macroeconomics	3
	<i>or</i>	
EC202	Prin. of Microeconomics	
EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
MA111	College Algebra	3
SD101	Fundamentals of Speech	3
	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
AC421	Federal Taxation Accounting I	3
BA231	Business Communication	3
BA254	Business Law I	3
DP121	Computer Applications for Business	3
	<i>Choose one from:</i>	
DP225	Word Processing	3
DP231	Database	
DP235	Spreadsheets	
DP250	Desktop Publishing	
FN245	Principles of Finance	3-4
	<i>or</i>	
FN341	Managerial Finance	

Sufficient elective credits must be completed so that at least 64 semester credits have been earned.

FALL		SPRING		
<i>First Year</i>				
AC132	Principles Accounting I	4	BA254 Business Law I	3
EN110	First-Year Composition I	3	AC133 Principles of Accounting II	4
	Electives	3	SD101 Fund. of Speech Communication	3
MA111	College Algebra	3	EN111 First-Year Composition II	3
DP121	Computer Applications for Business	3		16
		16		
<i>Second Year</i>				
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	3
		3	<i>or</i>	
	<i>Choose one from:</i>		EC202 Prin. of Microeconomics	3
DP225	Word Processing		General Education Elective	3
DP231	Database		Electives	2
DP235	Spreadsheets			15
DP250	Desktop Publishing			
FN245	Principles of Finance	3		
		17		

Telecommunications Engineering Technology

See College of Engineering and Mathematics, page 268.

Associate's Degree

64-Hour Program

Career Choices:

- Computer technician
- Electronics technician
- Telecommunications technician

Program Description:

The telecommunications engineering technology program is a two-year, associate of science degree program. This program will prepare you to work in electronic and computer systems in the fast-growing telecommunications field. The program includes both technical lecture classes and "hands-on" laboratory sessions. The technical instruction includes specialized courses in electronics, computer programming, computer networks and modern communications systems.

- The specialized technical courses combine lecture courses with "hands-on" laboratory sessions.
- The laboratory courses use modern electronics and micro-processor laboratories.

Career Description:

This program prepares students for employment in the installation, operation and maintenance of electronic and data communications systems. Throughout the program, students gain practical skills with modern electronics, communications and computer network systems that are in demand in business and industry.

Program Focus — You will work with your faculty advisor to select appropriate elective courses based upon your career interests. Graduates of this program who are interested in applications of telecommunications in industry can easily transfer into the B.S. manufacturing engineering technology program. Graduates who are interested in management positions can pursue additional education in the B.S. engineering management program.

Associate's Degrees

Departmental Requirements

Engineering Technology

ET110	Applied Electricity & PLC	4
ET240	Communications I	4
EE125	Digital Fundamentals	4
ET175	Applied Electronics	4
ET255	Computer Networks	4
ET245	Communications II	4
MT265	Quality Engineering	2
	<i>or</i>	
MA207	Principles of Statistical Methods	3
	Technical Electives	10

Mathematics and Science Courses

MA140	Precalculus Mathematics	5
PH221	Elements of Physics I	4
MA143	Calculus for Engineering I	4

Support Course

CS101	Intro. to Microcomputer Applications	3
-------	--------------------------------------	---

General Education Requirements

EN110	First-Year Composition I	3
EN111	First-Year Composition II	3
SD110	Fund. of Speech Communication	3
MA110 (or higher)	Explorations in Mathematics	3
	<i>or</i>	
PL205	Logic	3
	General Education Electives	6

FALL

First Year

EN110	First-Year Composition I	3
ET110	Applied Electricity & PLC	4
MA140	Precalculus Mathematics	5
CS101	Intro. to Microcomputer Applications	3
		15

SPRING

EN111	First-Year Composition II	3
EE125	Digital Fundamentals	4
	Tech Elective*	3
SD101	Fund. of Speech Communication	3
ET175	Applied Electronics	4
		17

Second Year

	Technical Elective*	4		Natural/Social Science Elective	3
PH221	Elements of Physics I*	4		Technical Elective*	3
MA143	Calculus for Engineering I	4	ET255	Computer Networks	4
ET240	Communications I	4	ET245	Communications II	4
		16	MA207	Prin. of Statistical Methods	3
					16

*If you are seeking the engineering or manufacturing engineering technology track, replace the second year courses with appropriate courses for that degree.

Information Processing

See College of Business
and Economics, page 266.

Program Description:

This program prepares you for entry-level positions as a word processor or receptionist. The program develops other fundamental skills in communications, computer applications and records management. Requires minimum of 32 credits.

Career Descriptions:

Data Entry Clerk – provides data entry for any organization.

Word Processor — prepares documents.

Receptionist — a business front-desk position which involves greeting the public and performing routine office duties.

Secretary — performs routine office duties.

Computer Applications Specialist — installs, operates and upgrades various software applications; i.e., spreadsheet, database, graphs, word processing and special-use programs.

Certificate

Career Choices:

Data Entry Clerk

Word Processor

Receptionist

Secretary

Computer Applications Specialist

Certificates

FALL		SPRING		
EN110	First-Year Composition I	3	BA226 Records Management	3
BA105	Business Mathematics	3	OA112 Keyboard Skillbuilding	2
OA111	Keyboarding/Document Formatting I	3	OA113 Document Formatting II	3
DP225	Word Processing Techniques	3	DP231 Database	3
SD101	Fund. of Speech Communication	3	DP235 Spreadsheets	3
		<u>3</u>	DP121 Computer Applications for Business	<u>3</u>
		15		17

International Studies

See College of Art, Letters
and Social Sciences, page 246.

Certificate

Career Choices:

International Business Manager

International Sales Representative

Foreign Relations Officer

Choose at least one course from six of the following categories to total a minimum of 32 credits. Category 7, Foreign Language is required.

1. Cultural Diversity		
SO103	Cultural Diversity	3
BA308	Managing Cultural Differences	3
2. Business and Economics		
EC408	International Economics	3
MK486	International Marketing	3
BA400	Special Topics: International Strategic Management	
3. Geography		
GG302	Economics Geography	4
GG306	Cultural Geography	3
4. Political Science		
PS411	U.S. Foreign Policy	3
PS420	Politics of the World Economy	4
PS331	Comparative Politics of Western Europe and Russia	4
PS334	Middle East Politics	3
5. History		
HS310	Russia	4
HS316	Europe in the 20th Century	4
HS361	Latin America	4
HS371	Far East Civilization	4
HS442	Diplomatic History of the U.S.	4
6. Humanities		
HU261	World Literature I	3
HU262	World Literature II	3
FR353	Business French I	3
FR354	Business French II	3
FR360	French Cultural Perspectives	3-4
SP305	Spanish Literature in Translation I	3
SP306	Spanish Literature In Translation II	3
JS105	Intensive Introductory Japanese Language I	10
JS106	Intensive Introductory Japanese Language II	10
JS201	Culture and Society of Japan I	3
JS202	Culture and Society of Japan II	3
JS301	Japanese Art and Culture I	4
JS302	Japanese Art and Culture II	4
7. Foreign Language		
	A minimum of two semesters of a modern foreign language	8

Special Topics: study in a foreign country may be used for up to eight credits of the Humanities and/or Foreign Language credits.

Program Description:

This program can be completed in three ways:

- Concurrently with a B.S. or B.A. degree program
- Post-baccalaureate program
- Minor

The purpose of the certificate program is to better prepare a person to work with a more-diverse work force. The program is designed to begin preparing students for potential foreign work assignments and improved multicultural relations.

The international studies certificate/minor is an interdisciplinary program. Course substitutions to meet your objectives in international studies may be approved by your academic advisor. As an example, Canadian or American courses might be approved as a substitute for students from countries other than Canada or the U.S. Also, special topics courses listed in the certificate curriculum may change with future development and additional international courses.

The listed courses may be taken throughout a student's baccalaureate program or as a one-year, post graduate certificate. This program features opportunities for students to study in foreign countries and in classes at Lake Superior State University with international faculty.

Career Descriptions:

International Business Manager — Negotiates contracts and joint ventures with foreign supplies and buyers; works as a manager in a foreign plant/office or in establishing an operation in a foreign country.

International Sales Representative — Represents suppliers and buyers for the purpose of selling products and/or services; may involve importing and exporting, joint ventures or foreign sales operations.

Foreign Relations Officer — Works in a variety of governmental or private-sector positions; negotiates international programs and international agreements; promotes organizational interests in foreign countries.

Paramedic Training

See College of Natural and Health Sciences, page 281.

Program Description:

This program provides advanced life support skills to assess and treat the sick and injured. It will allow graduates to qualify to write the state licensing examination for paramedic and possess advanced life support skills to assess and treat the sick and injured.

Admission requirements are:

- 18 years of age by September of year entering program.
- evidence of high school diploma or equivalent.
- evidence of valid, current Michigan driver's license.
- evidence of valid, current Michigan EMT-basic certification or National Registry EMT certification.
- evidence of current CPR or CPR instructor certification.
- evidence of completion of EN110 Freshman Composition I, three credits.

Career Descriptions:

Emergency Paramedic — works in the pre-hospital setting, providing emergency care and scene management in all types of emergency situations.

Firefighter-Paramedic — works in civilian or private setting, providing fire suppression, rescue operations and emergency care.

Public Safety Officer — works in the community, providing emergency care, fire/rescue and law enforcement services to the general public.

Hospital Technician — works in the hospital or trauma center setting, providing staff support services in critical care areas including the emergency department and critical care/intensive care units.

Certificate

Career Choices:

Emergency Paramedic
Firefighter-Paramedic
Public Safety Officer
Hospital Technician

Certificates

Department Requirements

HE211	Emergency Pharmacology I	2
HE212	Emergency Pharmacology II	2
HE251	Advanced Emergency Care I	4
HE252	Advanced Emergency Care II	4
HE261	Advanced Cardiology I	2
HE262	Advanced Cardiology II	2
HE284	Advanced Skills and Situations I	3
HE285	Advanced Skills and Situations II	3
HE297	Paramedic Clinical I	2
HE298	Paramedic Clinical II	2

Support Courses

BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4

FALL		SPRING			
BL121	Anatomy and Physiology I	4	BL122	Anatomy and Physiology II	4
HE211	Emergency Pharmacology I	2	HE212	Emergency Pharmacology	2
HE251	Advanced Emergency Care I	4	HE252	Advanced Emergency Care II	2
HE261	Emergency Cardiology I	2	HE262	Emergency Cardiology II	2
HE284	Advanced Skills and Situations I	3	HE285	Advanced Skills & Situations II	3
HE297	Paramedic Clinical I	2	HE298	Paramedic Practicum II	2
		<u>17</u>			<u>17</u>

Personal Computer Specialist

See College of Business
and Economics, page 266.

Certificate

Career Choices:

Computer Repair Technician
Network Technician
Applications Specialist

Program Description:

This program provides the skills necessary to assist personal computer users with the assembly, upgrade, maintenance and repairing of personal computers. With the additional courses in general education and business, holders of this certificate can obtain the associate's degree. Requires a minimum of 32 credits.

Career Descriptions:

A variety of entry-level technical positions serve the personal computer user.

Computer Repair Technician — works on computers, peripheral equipment and word processing systems; installs equipment; works closely with electricians.

Network Technician — assists in installation of computers; provides networking capabilities; troubleshoots.

Applications Specialist — provides assistance with computer programs/software; installs software.

Certificates

FALL		SPRING		
DP160	Personal Computers Workstation Operating Systems	3	DP260 Personal Computers Network Operating Systems	3
DP163	Troubleshooting and Repair of Personal Computers	3	DP263 Storage, Protection and Recovery of Personal Computers	3
EN110	First-Year Composition I	3	OA119 Accounting Procedures	4
OA111	Keyboarding/Document Formatting I		DP231 Database	3
	or	2-3	DP235 Spreadsheets	3
DP225	Word Processing Techniques			<u>16</u>
DP121	Computer Applications for Business Elective	3		
		<u>3</u>		
		17-18		

Practical Nursing

See College of Natural and Health Sciences, page 281.

Program Description:

The certificate of practical nursing provides students with the necessary skills and training to provide safe and competent care to patients and qualifies students to write the required licensure examinations for practical nursing. Course work can be completed in 12 months of full-time study, or in 24 months of part-time study.

Career Descriptions:

Hospital Nurse — works in a hospital setting providing direct patient care to clients of all ages.

Office Nurse — works in a physician's office or outpatient clinic assisting in the direct patient care of clients.

Extended Care — works in a long-term care facility providing care to the elderly.

Mental Health Nurse — works in community mental health centers or group homes providing care for the mentally ill.

Certificate

Career Choices:

Hospital Nurse

Extended Care Nurse

Office or Clinical Nurse

Mental Health Nurse

Student Profile:

Do you ...
 like working with people?
 like challenges?
 want to make a difference in people's lives?

Certificates

Students wishing to acquire this certificate must first have successfully completed these prerequisites: MA083 Pre-Algebra*; and BL105 Function of the Human Body or comparable course(s) within the past three years.

FALL			SPRING		
HE186	Basic Nursing Skills	7	PN201	Practical Nursing II	10
PN101	Practical Nursing I	4	PN202	Ethical/Legal Aspects of Practical Nursing	2
PN102	Drugs and Dosages	3	HE207	Nutrition Application in Health Care	1
PN103	Nursing Care Issues Across the Lifespan	3	HE208	Nutrition	2
		<u>17</u>			<u>15</u>
SUMMER					
PN203	Practical Nursing III	5			
PN204	Practical Nursing IV	5			

Minors

At least six semester hours of the required courses must be taken at LSSU for a student to obtain these minors. The grade point average for minors must be a C or better. Teaching minors must be a 2.70 or higher.

Accounting — Finance

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

Accounting — Teaching

Total Credits Required: 23

Required Courses:

AC232	Intermediate Accounting I	4
AC233	Intermediate Accounting II	4
AC334	Accounting Information Systems	3
AC431	Federal Taxation I	3
DP231	Database	3
DP235	Spreadsheets	3
FN242	Personal Finance	3

Only business education majors are eligible to take this teachable minor endorsement.

Anishinaabemowin/Ojibwe Language and Literature

Total Credits Required: 30

Required Courses:

NA141	Anishinaabemowin/Ojibwe I	4
NA142	Anishinaabemowin/Ojibwe II	4
NA201	Second Year Anishinaabemowin/Ojibwe Conversation I	4
NA202	Second Year Anishinaabemowin/Ojibwe Conversation II	4
NA301	Anishinabe Oral and Recorded Literature I	3
NA302	Anishinabe Oral and Recorded Literature II	3
NA401	Seminar in Advanced Language Studies I	4
NA402	Seminar in Advanced Language Studies II	4

This is an approved teaching minor.

Art

Total Credits Required: 20

Required Courses:

AT110	Fundamentals of Drawing and Composition	3
AT111	Introduction to Painting Media and Techniques	3
AT210	Principles of Design and Color	3
AT211	Mixed Media Explorations	3
AT250	Art History & Appreciation I	4
AT251	Art History & Appreciation II	4

Biology

Total Credits Required: 21 credits

Required Courses:

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4

BL337	General Ecology	3
BL	Biology Electives (200+ level)	6

This is an approved secondary teaching minor.

Business French

Total Credits Required: 28

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
FR353	Business French I	3
FR354	Business French II	3

Chemistry

Minimum Total Credits Required: 21

CH115	General Chemistry I	5
CH116	General Chemistry II	4

And complete one of the following options:

a)		
CH220	Survey of Organic Chemistry	4
CH231	Quantitative Analysis	4
CH332	Instrumental Analysis	4
or		
CH361	Physical Chemistry I	4

b)		
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
or		
CH451	Introductory Biochemistry	4

This is an approved secondary teaching minor.

Child Development

Total Credits Required: 29

Required Courses:

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

Communication

Total Required Courses: 21

Required Courses:

SD201	Small Group Communication	3
or		
SD225	Interpersonal Communication	3

SD211	Advanced Public Speaking	3
or		
SD210	Business & Professional Speaking	3
SD302	Argumentation & Advocacy	3
SD307	Classical/Contemporary Rhetoric	3
or		
EN321	Rhetoric & Composition Theory	3
SD308	Communication Theory	3
SD325	Organizational Communication	3
SD416	Communication in Leadership	3

Students must complete 21 semester hours of credit in addition to basic requirements of composition and speech (SD101). This is an approved teaching minor.

Computer Science

Total Credits Required: 21

Courses Required:

CS105	Intro. to Computer Programming	3
CS121	Principles of Programming	3
CS201	Data Structures and Algorithms	3
CS205	Computer Organization and Architecture	3
CS211	Database Applications	3
CS221	Computer Networks	3
Plus three additional CS credits at the 300- or 400-level		

Computer Science — Teaching

Total Credits Required: 21

Required Courses:

CS105	Intro. to Computer Programming	3
CS121	Principles of Programming	3
CS201	Data Structures and Algorithms	3
CS211	Database Applications	3
CS205	Computer Architecture and Organization	3
CS221	Computer Networks	3
TE445	Teaching Computer Science in the Secondary Classroom	3

Corrections

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 nine hours from: (At least one must be 300-400)

CJ130	Client Relations in Corrections	3
CJ140	Correctional Client Growth & Development	3
CJ250	Correctional Law	3
CJ330	Correctional Casework	3
CJ355	Juvenile Justice	3

Counseling

Total Credits Required: 21

Required Courses:

PY155	Lifespan Development	3
PY201	Communication Skills in Counseling	3

PY396	Tests and Measurements*	3
S0344	Social Welfare Systems	3
HM250	Human Services Practicum	3
BL105	Function of the Human Body**	4
PY259	Abnormal Psychology***	3
	or	
S0338	Deviance***	3
PY291	Group Counseling	3
	or	
PY391	Family Therapy	3
PY240	Behavioral Management	3
	or	
PY385	Health Psychology	3

**May count toward general education.
 ***May count toward SO/PY minor.

Note: PY396 has a prerequisite of one of these statistics courses: MA207, PY210 or SO302
 Note: Students seeking a BS degree in human services will notice that there is considerable overlap in the requirements for some of the skill minors. You must complete the minimum number of hours in each minor without counting a course twice. If additional courses must be taken to meet this requirement, select from the following:

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
S0214	Criminology	3
S0103	Cultural Diversity	3
S0242	Sociology of Sex	3
S0321	Sociology of Women	3
S0327	Sociology of Dying & Death	3
S0338	Deviance	3

Distributive Education — Teaching

Total Credits Required:	21	
<i>Required Courses:</i>		
BA105	Business Math	3
MK283	Principles of Selling	3
MK285	Retail Management	3
MK381	Consumer Behavior	3
MK387	Advertising Theory and Practice	3
MK483	Sales Force Management	3
MK486	International Marketing	3

Only business education majors are eligible to take this teachable minor endorsement.

Early Childhood Education — Teaching

Total Credits Required:	28	
<i>Required Courses:</i>		
ED101	Foundations of Early Childhood Education	3
ED110	Curriculum Development & Teaching Practices	3
ED220	Early Childhood Literature	3
ED260	Practicum I	4
	or	
ED261	Practicum II	3
ED270	Administration of Early Childhood Programs	3

ED420	Emergent Literacy	3
ED430	Directed Studies — Early Childhood Education	3
ED450	Internship in Teaching Infant/Toddler Preprimary Ed.	4

Economics

Total Credits Required:	21	
<i>Required Courses:</i>		
EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
EC308	Intermediate Microeconomics	3
EC309	Intermediate Macroeconomics	3
EC	Electives	9

Economics — Finance

Total Credits Required:	28	
<i>Required Courses:</i>		
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

Economics Teaching

Total Credits Required:	21	
<i>Required Courses:</i>		
EC201	Principles of Macroeconomics	3
ED202	Principles of Microeconomics	3
EC408	International Economics	3
FN242	Personal Finance	3
	<i>Electives from list below</i>	9
BA403	Business, Government & Society	3
EC304	Money, Banking & Monetary Policy	3
EC305	Public Finance	3
EC308	Intermediate Microeconomics	3
EC309	Intermediate Macroeconomics	3
MN451	Labor Law	4
MN469	Collective Bargaining	3
FN443	Insurance	4
FN448	Investment Strategy	4

English Language and Literature

Total Required Credits	21	
<i>Required Courses:</i>		
EN180	Introduction to Literary Studies	3
EN231	American Literature I	6
	and	
EN232	American Literature II	6
	or	
EN233	English Literature I	6
	and	
EN234	English Literature II	6
<i>One course (3-4 credits) from the following:</i>		
EN235	Survey of Native Literature of North America	3
EN236	Literature and Culture	3
EN340	Genre Studies	3
HU255	World Mythology	4
HU256	Introduction to Film: Images of Our Culture	3
HU261	World Literature I	3
HU262	World Literature II	3
SD309	Speech and Drama Productions	3
SD333	Studies in the Drama: the Genre and Theater in Context	3

<i>Three courses (9 credits) from the following:</i>		
EN306	Technical Writing	3
EN310	Advanced Writing	3
EN340	Genre Studies	3
EN401	Medieval Literature	3
EN402	Renaissance Literature	3
EN403	Restoration Literature	3
EN405	Romantic Literature	3
EN406	Nineteenth Century Literature	3
EN407	Twentieth Century Literature	3
EN410	The Children's Literary Tradition	3
EN420	History of the English Language	3
EN421	History of Literary Criticism	3
EN433	Topics in Literature and Composition	3
EN450	Directed Individual Study	3

English Teaching — Elementary

Total Credits Required:	21	
EN180	Introduction to Literary Studies	3
EN222	English Grammar	3
EN335	Children's Literature in the Classroom	3
EN410	The Children's Literary Tradition	3
EN231	American Literature I	6
	and	
EN232	American Literature II	6
	or	
EN233	English Literature I	6
	and	
EN234	English Literature II	6

<i>One course (3-4 credits) from the following:</i>		
EN235	Survey of Native Literature of North America	3
EN236	Literature and Culture	3
EN340	Genre Studies	3
HU255	World Mythology	4
HU256	Introduction to Film: Images of Our Culture	3
HU261	World Literature I	3
HU262	World Literature II	3
SD309	Speech and Drama Productions	3
SD333	Studies in the Drama: the Genre and Theater in Context	3

English Teaching — Secondary

Total Credits Required:	21	
<i>Required Courses:</i>		
EN180	Introduction to Literary Studies	3
EN222	English Grammar	3
EN320	Responding to Writing	3
EN231	American Literature I	6
	and	
EN232	American Literature II	6
	or	
EN233	English Literature I	6
	and	
EN234	English Literature II	6
<i>One course (3-4 credits) from the following:</i>		
EN235	Survey of Native Literature of North America	3
EN236	Literature and Culture	3
EN340	Genre Studies	3
HU255	World Mythology	4
HU256	Introduction to Film: Images of Our Culture	3
HU261	World Literature I	3
HU262	World Literature II	3
SD309	Speech and Drama Productions	3
SD333	Studies in the Drama: the Genre and Theater in Context	3

Minors

Three courses (9 credits) from the following:

EN306	Technical Writing	3
EN310	Advanced Writing	3
EN340	Genre Studies	3
EN401	Medieval Literature	3
EN402	Renaissance Literature	3
EN403	Restoration Literature	3
EN405	Romantic Literature	3
EN406	Nineteenth Century Literature	3
EN407	Twentieth Century Literature	3
EN410	The Children's Literary Tradition	3
EN420	History of the English Language	3
EN421	History of Literary Criticism	3
EN433	Topics in Literature and Composition	3
EN450	Directed Individual Study	3

Environmental Science

Total Credits Required: 45

Required Courses:

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL337	General Ecology	3
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH220	Survey of Organic Chemistry	4
CH231	Quantitative Analysis	4
NS103	Environmental Science	3
EV311	Environmental Law	3
<i>or</i>		
EV313	Solid and Hazardous Waste	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4
<i>or</i>		
CH342	Environmental Chemistry II: Air and Solid Wastes	4

Additional courses to total 45 credit hours:

BL204	General Microbiology	4
BL230	Introduction to Soils	4
CH341	Environmental Chemistry I: Water and Water Pollution Control	4
CH342	Environmental Chemistry II: Air and Solid Wastes	4
EV125	Geospatial Basics	1
EV126	Air Photo Interpretation	1
EV127	Global Positioning Systems	1
EV128	Geographic Information Systems	1
EV226	Geospatial Analysis I	1
EV227	Geospatial Analysis II	1
EV285	Principles of Epidemiology	3
EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
GE311	Principles of Hydrology	3

Fire Science

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 nine 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	3
TC101	Construction I	4
TC102	Construction II	3

French Language and Literature

Total Required Credits: 28

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

This minor may be used as a teaching minor.

General Business

Total Credits Required: 22-23

Required Courses:

AC132	Principles of Accounting I <i>or</i>	4
OA119	Accounting Procedures	3
MN360	Principles of Management	3
MK281	Marketing Principles & Strategy	3
EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
FN245	Principles of Finance <i>or</i>	3-4
FN341	Managerial Finance	3
BA231	Business Communication	3

Geography

Total Credits Required: 20

Geography (9-11 credits)

GG106	Physical Geography: Landforms <i>or</i>	4
GE121	Physical and Historical Geology I	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

It is strongly suggested that students pursuing professional careers complete MA207 Principles of Statistical Methods.

Geography Teaching

Total Required Courses: 21

Required Courses:

GG106	Physical Geography: Landforms <i>or</i>	4
GE121	Physical and Historical Geology I	4
GG108	Physical Geography: Meteorology and Climatology	4
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

Geology

Total Required Courses: 21

Required Courses:

GE121	Physical/Historical Geology I <i>or</i>	4
GE115	Field Excursions in Earth Science	4
GE122	Physical/Historical Geology II	4
GE218	Structural Geology and Tectonics	5
GE223	Mineralogy and Petrology	5
GE280	Introduction to Field Geology	3

Geology Earth Science

Total Credits Required: 23

Required Courses:

GE121	Physical/Historical Geology I <i>or</i>	4
GE115	Field Excursions in Earth Science	4
GE122	Physical/Historical Geology II	4
GG108	Physical Geography: Meteorology & Climatology	4
NS116	Introduction to Oceanography	4
NS119	Descriptive Astronomy	4
GE	Elective at 200 or above	3

This minor may be used as a secondary teaching minor.

Gerontology

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

Group Science — Elementary Education

This minor is limited to elementary education students completing a dual minor with education major or as a minor to an approved teacher education major.

Total Credits Required: 32

Required Courses:

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
CH108/109	Survey of General Chemistry	4
CH220	Survey of Organic Chemistry	4
GE121	Physical/Historical Geology I <i>or</i>	4
GE115	Field Excursions in Earth Science	4
NS101	Conceptual Physics	4
NS119	Astronomy	4

GG108	Meteorology & Climatology	4
	or	
NS116	Oceanography	

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

History

Total Credits Required: 21-22

Required Courses:

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

Total Required Credits: 22

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
GG106	Physical Geography: Land Forms	4
GG108	Physical Geography: Meteorology & Climatology	4
PS130	Intro. to State and Local Government	4

Human Resource Management

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	

Human Services Administration

Total Credits Required: 23

Required Courses:

S0344	Social Welfare Systems	3
MN365	Human Resource Management	3
DP	Elective	3
PS201	Intro. to Public Administration or	3
PY228	Organizational Behavior	3
HM250	Human Services Practicum	3
AC230	Fundamentals of Accounting	4
MK281	Marketing Principles and Strategy	4

Humanities

Total Credits Required: 24

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).

Institutional Loss Control

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.

International Studies

Total Credits Required: 32

Choose at least one course from six of the following categories to total a minimum of 32

credits. Category 7, foreign language, is required.

1. Cultural Diversity		
SO103	Cultural Diversity	3
BA308	Managing Cultural Differences	3
2. Business and Economics		
EC408	International Economics	3
MK486	International Marketing	3
BA400	Special Topics: International Strategic Management	
3. Geography		
GG302	Economics Geography	4
GG306	Cultural Geography	3
4. Political Science		
PS411	U.S. Foreign Policy	3
PS420	Politics of the World Economy	4
PS331	Comparative Politics of Western Europe and Russia	4
PS334	Middle East Politics	3
5. History		
HS310	Russia	4
HS316	Europe in the 20th Century	4
HS361	Latin America	4
HS371	Far East Civilization	4
HS442	Diplomatic History of the U.S.	4
6. Humanities		
HU261	World Literature I	3
HU262	World Literature II	3
FR353	Business French I	3
FR354	Business French II	3
FR360	French Cultural Perspectives	3-4
SP305	Spanish Literature in Translation I	3
SP306	Spanish Literature in Translation II	3
JS105	Intensive Introductory Japanese Language I	10
JS106	Intensive Introductory Japanese Language II	10
JS201	Culture and Society of Japan I	3
JS202	Culture and Society of Japan II	3
JS301	Japanese Art and Culture I	4
JS302	Japanese Art and Culture II	4

7. Foreign Language
A minimum of two semesters of a modern foreign language 8

Special Topics — study in a foreign country may be used for up to eight credits of the humanities and foreign language credits.

Japanese Study

Total Credits Required: 26-28

Required Courses:

JS105	Intensive Introductory Japanese Language I	10
JS106	Intensive Introductory Japanese Language II	10
<i>Two courses from:</i>		
JS201	Culture and Society of Japan I	3
JS202	Culture and Society of Japan II	3
JS301	Japanese Art and Culture I	4
JS302	Japanese Art and Culture II	4

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. Completion of this minor shall fulfill the one-year foreign language required for a bachelor of arts degree. Students are strongly advised to take GG323.

Minors

Law Enforcement

Total Credits Required: 21

Required Courses:

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
<i>Minimum of 15 hours from:</i>		
CJ202	Canadian Criminal Law	3
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
CJ406	Advanced Canadian Jurisprudence	3
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4

Legal Assistant Studies

Total Credits Required: 26

Required Core Courses:

LA102	Legal Research and Case Analysis	3
LA202	Legal Writing & Analysis	3
LA125	Civil Litigation and Procedure	4
LA150	Legal Assistant Profession & Ethical Considerations	3
OA119	Accounting Procedures	4
<i>or</i>		
PS110	Intro. to American Government and Politics	4

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 Management, Systems & Technology	3
LA300	Seminar in Legal Assistant Studies	1-4
LA301	Alternative Resolutions and Conflict Management	3
LA305	Tribal Law and Government	3
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

Loss Control

Total Credits Required: 21

Required Courses:

CJ212	Loss Control	3
CJ306	Security Systems	3
<i>Minimum of six hours from:</i>		
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 Applications	3
MN451	Labor Law	4
MK281	Marketing Principles & Strategy	3
MN360	Principles of Management	3

Marketing

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	Principles of Microeconomics	3

Mathematics

Total Credits Required: 22

Required Courses:

MA143	Calculus for Engineering I	and	8
MA144	Calculus for Engineering II		
M151	Calculus I	and	3
MA152	Calculus II		
MA207	Prin. of Statistical Methods	or	3
MA308	Probability and Mathematical Statistics		

Plus additional mathematics courses numbered 215 or higher for a minimum of 22 credits.

Mathematics Elementary Teaching

Minimum Credits Required: 21

Courses Required:

MA103	Number Systems and Problem Solving	4
MA104	Geometry & Measurement	4
MA112	Calculus for Business and Life Sciences	or
MA143	Calculus for Engineering I	or
MA151	Calculus I	4
MA207	Prin. of Statistical Methods	3
MA215	Fund. Concepts of Math	3
MA321	History of Mathematics	3

Mathematics Secondary Teaching

Minimum Credits Required: 23

Required Courses:

MA151	Calculus I	4
MA152	Calculus II	4
MA215	Fund. Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA207	Principles of Statistical Methods	or
MA308	Probability and Mathematical Statistics	3
MA321	History of Mathematics	3
MA325	College Geometry	3

Native Studies of the Americas

Minimum Credits Required 23

The Native Studies of the Americas minor is designed to provide valuable historical

and contemporary information about Native culture and society. The courses in the Native Studies of the Americas minor reflect the Native experience throughout North and South America, but focus on issues of importance to Native peoples in the Great Lakes region.

The Native Studies of the Americas minor is appropriate for students majoring in a wide variety of subjects who may or may not be Native themselves, but expect to work in a Native setting or in an area with a high Native population. Students who are simply interested in and wish to explore the Native cultures in our area will also benefit from this program.

Required Courses (10 credits)

NA/SO225	Native Cultures of North America	3
NA/HS230	Survey of Native History of North America	4
NA 310	Seminar in Native Studies of the Americas	3

Electives from the following (13 credits) (at least 3 credits must be 300 level)

SO103	Cultural Diversity	3
NA141	Ojibwe I, Anishinaabemowin	4
NA142	Ojibwe II, Anishinaabemowin	4
NA201	Second-Year Ojibwe I, Anishinaabemowin	4
NA202	Second-Year Ojibwe II, Anishinaabemowin	4
NA210	Indigenous Peoples of Central and South America	3
NA/EN235	Survey of Native Literature of North America	3
NA/HU240	Native Art and Culture	3
NA/LA/PS305	Tribal Law and Government	3
NA320	Contemporary Native Issues of North America	3

Office Administration

Total Credits Required: 22

Required Courses:

DP121	Computer Applications for Business	3
DP250	Desktop Publishing and Presentation Design	3
BA226	Records Management	3
BA121	Introduction to Business	3
OA119	Accounting Procedures	4
DP235	Spreadsheets	or
DP231	DataBase	3
DP225	Word Processing Techniques	3

Paramedic Technology

Current licensure as a Michigan Basic EMT and all course prerequisites must be met by the student prior to beginning this program.

Total Credits Required: 34

<i>Paramedic Technology (26)</i>		
HE211	Emergency Pharmacology I	2
HE212	Emergency Pharmacology II	2
HE251	Advanced Emergency Care I	4
HE252	Advanced Emergency Care II	4
HE261	Emergency Cardiology I	2
HE262	Emergency Cardiology II	2
HE284	Advanced Skills and Situations I	3
HE285	Advanced Skills and Situations II	3
HE297	Paramedic Clinical I	2
HE298	Paramedic Clinical II	2

Co-requisites

BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4

Personal Computer Specialist

Total Credits Required: 20

Required Courses:

DP160	Personal Computer Workstation 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

Political Science

Total Credits Required: 28

Required Courses:

PS110	Intro. to American Government & Politics	4
PS211	Political Science Research & Statistics	4

A minimum of one course in each of the following four fields: 13-16

American Politics (PS325, 364, 367, 467)	
Comparative Politics (PS160, 331, 333, 334, 335, 340)	
International Relations (PS241, 411, 413, 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

Total Credits Required: 21

Required Course:

PS110	Intro. to American Government & Politics	4
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Minimum of one course from each of the following four fields: 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
PS333	Human Rights and World Politics	4
PS335	European Union Politics	4
PS340	Politics in Multicultural Societies	3

International Relations:

PS241	Intro. to International Relations	4
PS247	Model United Nations	1
PS411	U.S. Foreign Policy	3
PS413	The International Legal Order	4
PS420	Politics of the World Economy	4

Electives to Total: 21

A minimum of nine credits must be at the 300/400 level.

Professional Communication

Total Credits Required: 21-22

Required Courses:

DP250	Desktop Publishing and Presentation Design	3
EN222	English Grammar	3
EN306	Technical Writing	3
ID399	Internship	3
SD308	Communication Theory	3

Elective Courses (6-7 credits)

EN221	Creative Writing	3
JR220	Photojournalism	3
EN310	Advanced Writing	3
EN320	Responding to Writing	3
HM480	Grantwriting	3
MK281	Marketing Principles & Strategy	3
MK387	Advertising Theory and Practice	3
SD210	Business and Professional Speaking	3
BA231	Business Communications	3
SD211	Advanced Public Speaking	3
SD302	Argumentation and Advocacy	3
SD320	Public Relations	3
SD325	Organizational Communication	3

Psychology

Total Credits Required: 22

Required Courses:

PY101	Introduction to Psychology	4
PY210	Statistics	3
PY212	Experimental Psychology	4
PY	Electives	6
PY	Elective at 300+ level	3
PY357	Personality Theory	3
PY396	Tests & Measurements	3
PY457	Cognition	3
PY459	Physiological Psychology	3

This is an approved teaching minor.

Public Administration

Total Credits Required: 28

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

Total Credits Required: 21

Required Courses (13 credits):

SD320	Public Relations	4
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SD210	Business and Professional Speaking	3
SD211	Advanced Public Speaking	3
SD302	Argumentation and Advocacy	3
SD308	Communication Theory	3

Elective Courses (8 credits):

ID399	Internship in Public Relations	1-4
SD307	Classical/Contemporary Rhetoric	3
EN321	Rhetoric and Composition Theory	3
SD325	Organizational Communications	3
EN220	Advanced Composition	3
JR210	Survey of Mass Media	3
JR211	Newswriting	3
JR220	Photojournalism	3
DP225	Word Processing Techniques	3
DP250	Desktop Publishing and Presentation Design	3
BA231	Business Communications	3
MK281	Marketing Principles and Strategy	3
MK387	Advertising Theory and Practice	3
PS325	Politics and Media	3

Recreation Studies

Total Credits Required: 24

Required Courses (16):

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 (8):

(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
RC340	Program Development 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
RC367	National Parks, National Monuments and National Culture	3
RC370	Recreation for the Elderly	3
RC375	Commercial Recreation	3
RC397	Recreation Studies Junior Research Seminar	1
RC437	Recreation Studies Senior Research Seminar	1
RC435	Problems & Issues in Therapeutic Recreation	3
RC440	Disabilities Seminar	3
RC450	Philosophy of Human Performance and Leisure	3
RC496	Selected Research Topics	1

Minors

Secretarial Science — Teaching

Total Credits Required: 24

Required Courses:

BA226	Records Management	3
DP225	Word Processing Techniques	3
DP231	Database	2
DP235	Spreadsheets	2
DP250	Desktop Publishing and Presentation Graphics	3
FN242	Personal Finance	3
OA113	Document Formatting II	3
OA235	Automated Office Systems	3

Only business education majors are eligible to take this teachable minor endorsement.

Social Work

Total Credits Required: 20

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
SW291	Group Counseling	
SW301	Alternative Dispute Resolution and Conflict Management	3
SW305	Tribal Law and Government	3
SW338	Deviance	3
SW341	Addiction	3
SW391	Family Therapy	3
SW480	Grantwriting	3

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.

Social Studies Teaching

Total Credits Required: 29

Required Courses:

EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
GG201	World Regional Geography	4
GG306	Cultural Geography	3
PS110	Intro. to American Government and Politics	4
PS130	Intro. to State and Local Government	4

Select one sequence:

HS101	History of World Civilization I and	4
HS102	History of World Civilization II or	4
HS131	United States History I and	4
HS132	United States History II	4

Students in the elementary teaching program may take this minor in combination with any other elementary teaching minor(s) or major(s).

Students in the secondary teaching program must be completing a major in history or political science to select the social studies minor.

Sociology — General

Total Credits Required: 20

Required Courses:

SO101	Introduction to Sociology	3
SO238	Social Psychology	4

Additional sociology courses to total a minimum of 20 hours, among which at least six hours are 300- or 400-level courses. 13

Sociology Teaching

Total Credits Required: 23-24

Required Courses:

SO101	Introduction to Sociology	3
SO103	Cultural Diversity	3
SO102	Social Problems	4
SO238	Social Psychology	4

Choose one of the following:

SO304	Development of Sociological Theory	3
SO325	Social Stratification	3
SO302	Statistics for Social Science	4

Additional sociology electives to total 23-24 semester hours. At least nine credits must be at the 300/400 level.

Spanish Language, Literature and Culture

Total Credits Required: 28

Required Courses:

SP161	First Year Spanish I	4
SP162	First Year Spanish II	4
SP261	Second Year Spanish I*	4
SP262	Second Year Spanish II*	4
SP361	Advanced Spanish I*	4
SP362	Advanced Spanish II*	4
SP365	Directed Study*	1-4

**With faculty approval, these courses may be substituted with courses taken abroad.*

This is an approved teaching minor.

Speech and Drama

Students must complete 21 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 that overlap both programs.

Substance Abuse Counseling

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	3
	or	3
PY391	Family Therapy	3
BL105	Function of the Human Body**	4

PY259	Abnormal Psychology***	3
	or	
SO338	Deviance***	3

***May count toward general education.
***May count toward SO/PY minor.*

Students must obtain a Michigan Apprentice Counseling Certificate by successfully completing the Michigan Office of Substance Abuse Counseling Examination before applying for a practicum.

Note: PY396 has a prerequisite of one of these statistics courses: MA207, PY210 or SO302.

Note: Students seeking a BS degree in human services will notice that there is considerable overlap in the requirements for some of the skill minors. You must complete the minimum number of hours in each minor without counting a course twice. If additional courses must be taken to meet this requirement, select from the following:

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 — Elementary

Total Credits Required: 25

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
TE330	Reading in the Elementary Classroom	3
TE410	Corrective Reading in the Classroom	3
TE411	Elementary Language Arts and Methods Across the Curriculum	3
TE420	Math Methods for Elementary Teachers	2
TE421	Science Methods for Elementary Teachers	2
TE422	Social Studies Methods for Elementary Teachers	2

Teaching — Secondary

Total Credits Required: 22

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
TE430	General Methods for Secondary Teachers	3
TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3

Choose one from:

TE441	Language Arts Methods for Secondary Teachers	3
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TE442	Math Methods for Secondary Teachers	3
TE443	Science Methods for Secondary Teachers	3
TE444	Social Studies Methods for Secondary Teachers	3

Theatre

Total Credits Required: 24

Required courses offered at LSSU

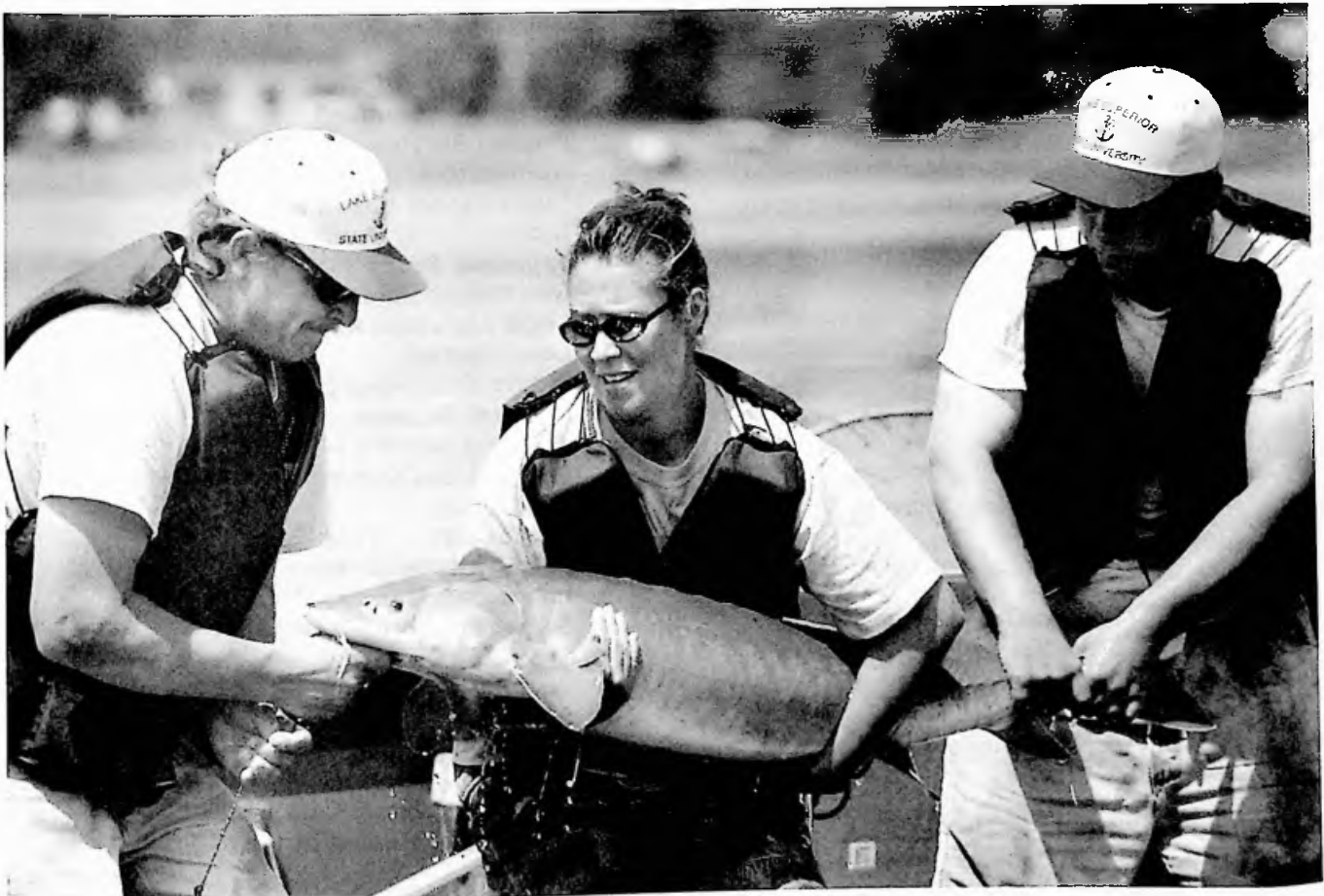
SD161	Problems in Speech/Drama	3
SD251	History of Drama and Theatre I <i>or</i>	3
SD252	History of Drama and Theatre II	3
SD309	Speech and Drama Production	3
SD333	Studies in the Drama: The Genre and Theatre in Context	3

Required courses offered at Algoma University

THEA2115	Acting I	3
THEA2167	Introduction to Stage Craft	3
THEA3417	Theatre Practicum	3

Select one course from the following:

EN402	Renaissance Literature	3
ENGL3475	Modern and Contemporary Drama	3
THEA2137	Theatre Movement	3
THEA2357	Canadian Theatre	3
THEA3115	Acting II	3
THEA3167	Basic Scene Design	3
THEA3187	Directing the Theatre	3
THEA3346	Theories of Drama	3



Minors

College of Arts, Letters and Social Sciences

Post-Baccalaureate Certificate

Legal Assistant Studies

Bachelor's Degrees

Criminal Justice

*Emphasis in Corrections, Criminalistics, Generalist,
Law Enforcement, Certification in Law Enforcement,
3-Year Plan for a BS Following NRT Degree, Loss
Control, Public Safety*

Early Childhood Education

Education

Elementary and Secondary Teaching

English Language and Literature

Elementary and Secondary Teaching

Fine Arts Studies

Fire Science

*Emphasis in Engineering Technology,
Generalist, Hazardous Materials*

French Studies

Elementary and Secondary Teaching

History

Elementary and Secondary Teaching

Human Services

Individualized Studies

Legal Assistant Studies

*Criminal Law, Labor Law, Legal Administration,
Legislative/Constitutional Law, Personal Injury*

Liberal Studies

Political Science

*Tracks in General, Pre-law, Public Administration - Secondary
Teaching*

Psychology

Elementary and Secondary Teaching

Social Science

Social Studies

Elementary and Secondary Teaching

Sociology

*Elementary and Secondary Teaching
Double Major in Sociology & Human Services*

Associate's Degrees

Criminal Justice

Concentrations in Corrections and Law Enforcement

Early Childhood Education

Fire Science

Legal Assistant Studies

Liberal Arts

Substance Abuse Prevention/Treatment

Certificate

International Studies

Minors

**Anishinaabemowin/Ojibwe Language
and Literature**

Art

Business French

Child Development

Communication

Corrections

Counseling

Early Childhood Education — Teaching

English Language and Literature

**English Language and Literature —
Elementary Teaching**

**English Language and Literature —
Secondary Teaching**

Fire Science

French Language and Literature

Geography

Geography — Teaching

Gerontology

History

History — Teaching

Human Services Administration

Humanities

Institutional Loss Control

International Studies

Japanese Study

Law Enforcement

Legal Assistant Studies

Loss Control

Native Studies of the Americas

Political Science

Political Science — Teaching

Professional Communication

Psychology

Psychology — Teaching

Public Administration

Public Relations

Social Studies — Teaching

Social Work

Sociology

Sociology — Teaching

Spanish Language, Literature and Culture

Speech and Drama

Substance Abuse Counseling

Teaching — Elementary and Secondary

Theatre

College of Arts, Letters and Social Sciences

Mission Statement:

The mission of the College of Arts, Letters and Social Sciences is to provide a quality educational experience to our students. Although the disciplines found within the college are quite diverse, all of our programs are concerned with the study of human behavior from the perspective of the liberal arts, the social sciences or from a professional approach.

Faculty

Mr. James Blashill, Dean
Associate Professor

Professors

Dr. Richard Conboy
Dr. Richard Crandall
Dr. Leslie Dobbertin
Dr. Terry Heyns
Dr. Gary Johnson
Mr. James Madden
Mr. Robert Money
Mr. James Moody
Dr. Marcel Pichot
Dr. Diana Pingatore
Dr. Susan Ratwik
Dr. Timothy Sawyer
Dr. Thomas Schirer
Dr. John Wilkinson

Associate Professors

Dr. Carol Andary
Dr. Gary Balfantz
Dr. George Denger
Dr. Polly Fields
Dr. Eric Gadzinski
Dr. Paige Gordier
Dr. Virginia Hines
Ms. Shirley Schoenemann
Mr. Robert Willey

Assistant Professors

Dr. Charlotte Amaro
Dr. Paulette Attie
Dr. Gerald Dobbertin
Dr. Amie Doughty
Ms. Elizabeth Foley
Mr. Philip Jones
Mr. Roger Land
Dr. Lillian Muofhe
Dr. Anthony Ndungu
Dr. Matthew Pifer
Dr. Lance Rivers
Mr. Ray Trouvé
Dr. James Zukowski

School of Criminal Justice and Fire Science

Faculty

Chair

Mr. Roger Land,
Asst. Professor

Professors

Dr. Terry Heyns
Mr. James Madden

Associate Professors

Dr. Paige Gordier

Assistant Professors

Ms. Elizabeth Foley

Staff

Ms. Janine Murray, Secretary,
Criminal Justice and Fire Science

Mission Statement:

It is the mission of the criminal justice/fire science program faculty and staff to provide an atmosphere where active learning may occur, to provide students with the highest quality educational experience, to continue to support the "professional model" as currently utilized, to become appropriate role models for students, to support the educational program by acquiring the appropriate equipment and supplies, to fulfill the advising role, and to assess the academic outcomes of the program.

Program Objectives:

- Provide students with a broad-based, liberal education.
- Provide students with the skills necessary to perform as 21st century criminal justice practitioners.
- Assist students with their development of a set of professional ethics.
- Assist students in the development of their critical thinking skills.
- Assist students with the development of their writing skills.
- Provide an educational atmosphere where active learning may occur.
- Assess the educational outcomes of the program.

The criminal justice and fire science programs allow you a unique opportunity to receive state certification in a number of areas. You may obtain Firefighter I and II Michigan certifiability, Wildland Firefighting certification (USFS S130, S190, and I220), and certifiability through the Michigan Commission on Law Enforcement Standards (MCOLES). The following certificates may also be awarded: the Michigan Corrections Officer Certificate, Incident Command System, Hazardous Material Awareness Level, Hazardous Material Operations Level, and the 40 hour Emergency Response Technician - HAZWOPER (29CFR 1910.120).

School of Criminal Justice and Fire Science

Program Description:

An option must be selected within criminal justice to prepare you for the career you have chosen.

General education requirements and sufficient elective credits must be completed so that at least 124 semester credits have been earned.

Corrections — probation, parole and corrections officers operate prison systems and help offenders become contributing members of society. This option has a four and two-year degree.

Criminalistics — combines law enforcement training with a chemistry minor. Careers are available in the science-based fields of criminal justice, such as laboratory or evidence technician.

Generalist — this program is ideal for some transfer students or those working in criminal justice agencies who want a bachelor's degree. Employment varies depending upon your specialization.

Law Enforcement — MCOLES-certified students have the best opportunities. Graduates are hired by local, state and federal agencies as police officers, sheriff deputies, federal investigators, customs and immigration inspectors, and conservation officers. Canadian graduates find careers with agencies such as the Royal Canadian Mounted Police and the Ontario Provincial Police.

Loss Control — with a growing private sector, job opportunities are good. Graduates may find jobs in security departments, in security equipment sales or in private security firms. Many graduates begin their careers as manager trainees.

Public Safety — graduates compete for jobs in local, state or federal agencies as public safety officers, police officers, sheriff deputies, conservation officers or fire fighters.

Criminal Justice/ Fire Science

Faculty

Chair

Mr. Roger Land
Asst. Professor

Professors

Dr. Terry Heyns
Mr. James Madden

Associate Professor
Dr. Paige Gordier

Assistant Professors
Ms. Elizabeth Foley

School of Criminal Justice and Fire Science

Criminal Justice/ Fire Science

Advisory Committee

Law Enforcement Members:

Chief Louis Murray,
Sault Ste. Marie
Lt. John Matchulat,
Michigan State Police
Dan Frazier, Cheboygan
Ralph Boudreau,
Michigan State Police
Harris Miller, Sault Ste. Marie
Jeff Moran,
Chippewa County Sheriff
Michael Roy,
Alpena Community College
Patrick Wyman,
Mackinaw City Police Department
Tim Matelski,
St. Ignace Police Department
Robert Davies, Sault Ste. Marie,
Ontario Police Department

Corrections Members:

Robert Kapture,
Kinross Correctional Facility
Steve Ewing, Wayne Fortin,
John Ferroni, Dave Jones,
Gary McLeod,
Sault Ste. Marie Probation/Parole
Doreen Howson, Peppler Shelter
Noreen Francescutti,
Sault Ste. Marie, Ontario,
Probation/Parole

Federal Members:

Robert McNamara, U.S. Border Patrol
Bruce Wagner, U.S. Immigration

Judiciary Members:

Brian Peppler, Marsha Teysen,
Prosecuting Attorney's Office
Susan Short,
Sault Ste. Marie Court Administrator

Security/Fire Science Members:

Kenneth Eagle,
Sault Ste. Marie Fire Chief
Wayne Francisco, Atlanta, Michigan
Lynn McCoy, Sault, Ont. Fire Chief
Pat McMahan, Fire Safety Inspector
Lou Schomberger, Michigan Fire
Fighters Training Council
Mr. Tim McKee, 911 Director

Michigan Commission on Law Enforcement Standards (MCOLES)

Certification:

Students enrolled in the emphasis in criminalistics, law enforcement or public safety in the criminal justice baccalaureate degree may be eligible for MCOLES 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.

MCOLES Mini-Academy:

Students enrolled in the MCOLES 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 fire-arms, driving and defense tactics. Only students who are enrolled in the MCOLES 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's 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.

Michigan Fire Fighters Training Council (FFTC) Certification:

Students enrolled in the associate's degree, bachelor's degree, or minoring in fire science may be eligible for certification as a Firefighter I and II.

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.

School of Education

Requirements for Formal Application

Candidates:

- Will have earned 45 semester credits the semester in which they apply.
- Are enrolled in or have successfully completed TE150 and TE250 with a grade of B- or better with each course.
- Will have successfully completed SD101, EN110 and EN111.
- Will have at least a 2.70 GPA in their major(s), their minor(s), and overall at the time of application. This average includes transfer credits.
- Will have completed CS101 (or its equivalent), with a C or better grade.
- Will have officially declared to the Registrar's Office a major and/or minor(s).
- Will have passed the MTTC (Michigan Test for Teacher Certification) Basic Skills Test.
- Will have no more than five repeats, with no more than one repeat in major and minor areas, teacher education courses, or the elementary planned program.
- Will have passed the Michigan Test for Teacher Certification in major and/or minor areas, along with BS or BA degrees that were completed at other universities or colleges before being admitted to the Teacher Education Program.

- Grade point average
- Passing score on the Michigan Test for Teacher Certification – (MTTC) - Basic Skills Test
- Satisfactory two-page, typed essay
- Satisfactory extemporaneous essay
- Satisfactory faculty interview
- The amount of prior experience related to teaching and/or working with children
- Absence of felony convictions for moral turpitude or any offense involving a minor.

In the event that more students qualify for admission to the program than University resources can accommodate, a selection system may be established. The criteria to be used in selecting students will include, by way of example but not by way of limitation, GPAs, faculty recommendations, representation from under-represented populations, teaching subject area demand, and availability of adequate numbers of K-12 collaborating teachers.

Teacher Educational Professional Component

Students seeking elementary or secondary teacher certification are required to complete 22 credits of the Teacher Education Professional component. Transfer credit may be awarded towards TE150 and TE250 if not more than five years old. All other course work (TE301 through TE604) must be taken at LSSU.

Prior to formal admission: All Teacher Education Students

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3

After formal admission to the program:

TE301	Learning Theory and Teaching Practice	4
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Faculty

Dr. Virginia Hines,
Chair, School of Education
Asst. Professor

Associate Professor
Ms. Shirley Schoenemann,
Child Development Lab

Assistant Professors
Dr. Paulette Attie
Dr. Lillian Muofhe

Staff
Vacant

Director of Field Experience

Ms. Donna White, secretary

Admission to LSSU Teacher Education Program

Admission to the program will be competitive and is based upon the following criteria:

School of Education

Elementary Program:		
TE330	Teaching Reading in the Elementary Classroom	3
TE410	Corrective Reading in the Classroom	3
TE411	Elementary Language Arts and Methods Across the Curriculum	3
TE420	Math Methods for Elementary Teachers	2
TE421	Science Methods for Elementary Teachers	2
TE422	Social Studies Methods for Elementary Teachers	2
Secondary Program:		
TE430	General Methods for Secondary Teachers	3
TE431	The Secondary Learner	3
TE440	Reading in the Content Area	3
<i>Plus one of the following methods courses:</i>		
TE441	Language Arts Methods for Secondary Teachers	3
TE442	Math Methods for Secondary Teachers	3
TE443	Science Methods for Secondary Teachers	3
TE444	Social Science Methods for Secondary Teachers	3
TE445	Teaching Computer Science in the Secondary Classroom	3
TE446	Business Education Methods for Secondary Teachers	3

Ontario Teacher Certification

The LSSU Elementary Teaching Program will give you the ability to teach all subjects in self-contained classrooms, grades K-6 (Primary/Junior).

The LSSU Secondary Teaching Program will give you the ability to teach in your major/minor areas, grades 7-OAC (intermediate/senior).

Ontario certification information is available in the School of Education Office.

Fifth-Year Teaching Internship

Following graduation, students must successfully complete a full-year intern teaching experience at an elementary or secondary school, and the following courses to be recommended for Michigan Teacher Certification.

Fall:		
TE491	Internship in Teaching Diverse Learners I	6
TE601	Professional Roles and Teaching Practice I	3
TE602	Reflection and Inquiry in Teaching Practice I	3
Spring:		
TE492	Internship in Teaching Diverse Learners II	6
TE603	Professional Roles and Teaching Practice II	3
TE604	Reflection and Inquiry in Teaching Practice II	3

School of English and Speech

Course Grid:

Annual Offerings in English (Tentative)

Fall		Spring	
EN180	Intro. to Literary Studies	EN180	Intro. to Literary Studies
EN221	Creative Writing	EN222	English Grammar
EN222	English Grammar	EN232	American Literature II
EN231	American Literature I	EN234	English Literature II
EN233	English Literature I	EN235	Survey of Native Literature of North America
EN236	Literature and Culture	EN306	Technical Writing
EN306	Technical Writing	EN310	Advanced Writing
EN320	Responding to Writing	EN340	Genre Studies
EN335	Children's Literature in the Classroom	EN410	The Children's Literary Tradition
EN421	History of Criticism	EN420	History of English
EN433	Topics in Literature and Composition	EN405	Romantic Literature
EN490	Senior Thesis		<i>or</i>
EN401	Medieval Literature	EN406	19th Century Literature
	<i>or</i>		<i>or</i>
EN402	Renaissance Literature	EN407	20th Century Literature
	<i>or</i>		
EN403	Restoration Literature		

Course Rotations for Speech Courses (Tentative)

Fall 2002		Spring 2002	
SD251	History of Drama & Theater I	SD225	Interpersonal Communication
SD302	Argumentation & Advocacy	SD252	History of Drama & Theater II
SD307	Classical and Contemporary Rhetoric	SD308	Communication Theory
		SD309	Speech & Drama Productions
		SD320	Public Relations

Fall 2003		Spring 2004	
SD201	Small Group Communication	SD211	Advanced Public Speaking
SD210	Business and Professional Speaking	SD309	Speech & Drama Productions
SD302	Argumentation & Advocacy	SD416	Communication in Leadership
SD325	Organizational Communication	SD320	Public Relations

Fall 2004		Spring 2005	
SD251	History of Drama & Theater I	SD252	History of Drama & Theater II
SD302	Argumentation & Advocacy	SD308	Communication Theory
SD307	Classical and Contemporary Rhetoric	SD320	Public Relations

Faculty

Chair

Dr. Eric Gadzinski
Associate Professor

Professors

Dr. Diana Pingatore

Associate Professors

Dr. Gary Balfantz

Dr. George Denger

Dr. Polly Fields

Assistant Professors

Dr. Charlotte Amaro

Dr. Amie Doughty

Dr. Matthew Pifer

Dr. Lance Rivers

Dr. James Zukowski

Staff

Ms. Laurie DeNeve-Ewing,
Secretary

School of Humanities and History

Fine Arts Studies

Faculty

Chair

Dr. Daniel Dorrity, Professor

Professors

Mr. Robert Money

Mr. James Moody

Dr. Marcel Pichot

Dr. Thomas Schirer

Dr. John Wilkinson

Staff

Ms. Laurie DeNeve-Ewing,
Secretary



School of Humanities and History

Fine Arts Studies

Classes at LSSU enclosed in [] are assigned numbers for classes at Sault College or Algoma University.

As classes are chosen from Sault College or Algoma University, numbers will be assigned at LSSU.

Final Project: FA405

Course	LSSU	Sault College	Algoma
Graphic Design Concentration			
Lettering	[FA100]	ADV100	AAGD1006
Graphic Design I	[AT104]	ADV104	AAGD1046
Graphic Design II	[FA113]	ADV113	AAGD2137
Typography	[AT230]	ADV230	AAGD2306
Introduction to Computer Graphics	[AT231]	ADV122	AAGD2316
Computer Graphics I	[AT235]	ADV237	AAGD2357
Computer Graphics II	[AT236]	ADV241	AAGD3406
Computer Graphics III	[AT237]	ADV315	AAGD3465
Computer Layout	[FA216]	ADV215	AAGD2156

MUSIC CONCENTRATION

Required Courses

Introduction to Music I	MU120	MUSC1101
Introduction to Music II	MU121 or [FA102]	MUSC1102
History & Appreciation of Music	[FA220] MU220 & MU221 [FA221]	MUSC1015

Select 21 additional credits in Music - no more than 12 credits at the first-year level including six credits from Group I and six credits from Group II and/or III.

Group I: History/Theory/Appreciation — at least six credits from Group I

History

Music of the Baroque Period		MUSC2006
Music of the Classical Period		MUSC2007
Music in Popular Culture: Blues & Jazz		MUSC2056
Music in Popular Culture: Rock & Roll		MUSC2057
History & Appreciation of Jazz	MU260	MUSC2606
History of the Opera	[FA305]	MUSC3005
Music of the Romantic Period	[FA316]	MUSC3016
Music of the Twentieth Century		MUSC3017
Native Music		NAAC2026
Music as Culture I - World Music		MUSC2066
Music as Culture II - Native Music		MUSC2067

Theory

Materials of Music I: Theory	[MU115]	MUSC1115
Materials of Music II: Theory	[MU215]	MUSC2115

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
<i>Appreciation</i>			
Music Appreciation: Listening Fundamentals			MUSC1021
Music Appreciation: Cultural Survey			MUSC1022
Group II: Applied/Studio — Select at least six credits from Group II and III			
Applied Music Proficiency I	MU210		MUSC1401
Applied Music Proficiency II	[MU402], MU210		MUSC1402
Applied Music for Non-Concentration Students I	[FA120], MU210		MUSC1420
Applied Music for Non-Concentration Students II	MU210		MUSC2420
Applied Music for Non-Concentration Students III	MU210 [FA240]		MUSC3420
Class Piano	MU170		MUSC1701
Class Piano II	MU171		MUSC2701
Class Guitar	MU180		MUSC1801
Class Guitar II	MU181		MUSC2801
Group III: Ensemble			
University Choir	MU140 & MU141 [FA161]		MUSC1611, 2611, 3611
Instrumental Chamber Ensemble	MU250 & MU251		MUSC1621, 2621, 3621
Sault Symphony Orchestra	MU110 & MU111		MUSC1631, 2631, 3631
Jazz Ensemble	MU160		MUSC1651, 2651, 3651
Concert Band	MU161		MUSC1671, 2671, 3671
Chamber Music	MU250 & MU251		
Vocal Chamber Ensemble			MUSC 1641, 2641, 3641
Native Arts and Culture Concentration			
Introductory Ojibwe	[FA105]	NSA118 & 120	OJIB1005
<i>Complete at least 18 credits from Group I and six more from Group I or Group II.</i>			
Group I: Core Courses			
Native Art History			NAAC2006
Native Literature	NA235		NAAC2016
Native Music	[FA226]		NAAC2026
Arts & Culture I: Dgwaagi			NAAC2036
Arts and Culture II: Biboon			NAAC2046
Arts and Culture III: Minookmi/Niibin			NAAC2056

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
Living Arts I: Dgwaagi			NAAC2066
Living Arts II: Biboon			NAAC2076
Living Arts III: Minookmi/Niibin			NAAC2086
Intermediate Ojibwe		NSA126 & 129	OJIB2005
Advanced Ojibwe			OJIB3005
Introduction to North American Native Art			VISA2026
Ojibwe Art and Culture	[FA207]		VISA2027
Music as Culture I: World Music			MUSC2067
Anishinaabe Culture and Civilization			OJIB2015
Seminar in Advanced Language Studies			OJIB3015
Anishinaabe Oral Literature			OJIB3105
Group II: Approved Native Arts and Culture Elective Courses			
Ethnology of North American Native Peoples			ANTR2035
Native Canadians: Heritage and Issues			ANTR2055
The Art of Ribbon Making			NAAC1001
The Art of Regalia Making			NAAC1011
Cradle Boards and Bandolier Bags			NAAC1021
Native Cultures of North America	NA225		NAAC2256
Seminar in Native American Studies	NA310		NAAC3106
Contemporary Native American Issues	NA320		NAAC3206
Theater Concentration			
Introduction to Theater	[FA115]		THEA1115
<i>Select 21 additional credits including at least six from each group</i>			
Group I: Theater History/Theory			
Drama to 1642			ENGL2465
Shakespeare I			ENGL2536
Shakespeare II			ENGL2537
Studies in Drama: The Genre & Theater in Context	SD333		ENGL3336
Modern & Contemporary Drama			ENGL3475
Shakespeare	EN432		ENGL4326
Contemporary Canadian Drama			ENGL4416
Medieval English Drama	[FA426]		ENGL4426
Le theatre classique			FREN3006
Le theatre franais moderne			FREN3326
Theater History I	SD251 & SD252		THEA2245
Canadian Theatre			THEA2357
Theories of Drama			THEA3346

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
Group II: Practical/Performance Theater			
Problems in Speech/Drama	SD161		THEA1616
Modern European Theater	[FA201]		THEA2015
Acting I	[FA215]		THEA2115
Theater Movement			THEA2137
Introduction to Stage Craft			THEA2167
Speech and Drama Production	SD309		THEA3096
Acting II			THEA3115
Basic Scenic Design	[FA367]		THEA3167
Directing in the Theater			THEA3187
Theater Practicum			THEA3417
Visual Arts Concentration			
Art History and Appreciation	AT250 & AT251	ART125 & 129 ART259 & 279	VISA1005
Drawing I	AT110	FA150	VISA1506
Design I	[FA151] AT210	FA151	VISA1516
Color Theory	[FA152]	FA152	VISA1526
<i>Select at least 12 credits from the classes below.</i>			
Medieval Art History			HIST3826
Aspects of Renaissance Art			HIST3836
Native Art History			NAAC2006
Philosophy of Art and Literature			PHIL2245
Painting, Composition and Design			VISA1116
Drawing, Painting, and Composition			VISA2107
Graphic Arts, Watercolor, Mixed Media	AT211		VISA2116
Modern Art	[FA200]		VISA2005
Introduction to North American Native Art			VISA2026
Ojibwe Art and Culture			VISA2027
Art of Canada			VISA3005
Special Topics I			VISA3026
Special Topics II			VISA3027
Design II	[FA171]	FA171	VISA2716
Drawing II		FA170	VISA2706
Drawing III	[FA251]	FA251	VISA3516
Drawing IV		FA271	VISA3716
Painting I	AT111	FA155	VISA2556
Painting II	[FA174]	FA174	VISA2746
Painting III		FA253	VISA3536
Painting IV		FA278	
Photography I		PHO100	VISA2056
Photography II		PHO115	VISA2156

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
Photography III		PHO215	VISA3006
Pottery I	[FA157]	FA157	VISA2576
Pottery II		FA176	VISA2766
Psychology of Art I	[FA159]	FA159	VISA2596
Psychology of Art II		FA178	VISA2786
Fabric Surface Design I		FA154	VISA2546
Printmaking I		FA158	VISA2586
Children's Illustrated Books			ENGL2166
Understanding Comics			ENGL2167
Textiles		FA160	VISA2606
Sculpture I			VISA2206
Sculpture II			VISA2207

Writing Concentration

Select six credits from the following three courses.*

British Literature from Chaucer to 20th Century	EN233 & EN234	ENGL1005
Introduction to Canadian Literature		ENGL1205
Introduction to Writing & English Studies		ENGL1705

**or equivalent introductory literature course*

Pick at least 18 additional credits in writing, including at least three credits from each of Groups I and II and additional credits in writing from Group III. A minimum of nine credits in applied rhetoric or writing courses must be completed. If writing is elected as a third discipline, ENGL1705 must be completed.

Approved Writing Courses

Group I: Practical Writing & Production Courses

Advanced Writing	EN310		ENGL2206
Practical Criticism			ENGL2306
Stylistics			ENGL2902
Technical Writing	EN306	ENG210, 300	WRIT2056
Writing for the Mass Media	JR210		WRIT2107
Print Newswriting	JR211		WRIT2117
Desktop Publishing	DP250		WRIT2416
Reading and Writing for the Out-of-Doors			WRIT3056
Electronic Editing and Production	JR310		WRIT3107
Advanced Reading and Writing		ENG315	WRIT3156

Group II - Creative Writing Courses

Composition & Rhetorical Theory			ENGL2515
Responding to Writing	EN320		ENGL3206
Rhetoric and Composition	EN321		ENGL3216

School of Humanities and History

Course	LSSU	Sault College	Algoma
Creative Writing	EN221		ENGL3516
Studies in Creative Writing			ENGL3517
The Writer's Voice I			ENGL3806
The Writer's Voice II			ENGL3807
Introduction to Creative Writing			ENGL2546
Group III - Senior Year Courses			
History & Structure of English Language	EN420		ENGL4206
History of Literary Criticism	EN421		ENGL4216
History of Literary Criticism			ENGL4605
History of the English Language			ENGL4925
Broadcast Newswriting	JR410		WRIT4106
Broadcast Editing and Production	JR411		WRIT4116



School of Social Sciences

Legal Assistant (Paralegal) Profession:

The legal assistant profession is one of the occupations projected to grow the fastest through the year 2010 according to the U.S. Department of Labor. A legal assistant (or paralegal) is a valued member of the legal team and works under the supervision of attorneys. The legal assistant profession is both challenging and offers many career advancement opportunities.

This program is designed to train qualified legal assistants capable of working in a variety of work environments. Consequently, the role and job duties of a legal assistant vary depending on the areas of law and work environment in which a legal assistant is employed. Such diversity, varied challenges and employment possibilities are what makes the legal assistant profession so interesting and rewarding. For instance, legal assistants are employed in law firms; corporations; financial institutions; government (federal, tribal, state or local); courts and mediation systems; real estate offices and title companies; insurance companies; special interest groups; prosecutor and public defender offices; educational institutions; financial service organizations; credit and collection agencies; and service, consulting or publishing companies.

Legal Assistant Program Offerings:

There are four different degrees or offerings in legal assistant studies. They are as follows:

1. a four-year baccalaureate degree in legal assistant studies with an 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;
2. a two-year associate's degree in legal assistant studies;
3. a post-baccalaureate (one-year) certificate in legal assistant studies (which is available to students who already have a bachelor's degree in some other discipline and wish to make a career change or advancement); or
4. a minor in legal assistant studies which can complement various majors (and may also be helpful to students who are planning on attending law school).

For further information on each of these programs, please see the appropriate curriculum description pages in this Catalog.

Legal Assistant Studies

Faculty

Program Coordinator
Carol S. Andary,
Associate Professor

Professor
Dr. Madan Saluja,
Business Law Professor

Adjunct Faculty
Anthony E. Andary
Elizabeth Bias
Eric G. Blubaugh
Elizabeth Church
Clayton Graham
Wm. Dyke Justin
Jennifer Miller

Staff
Ms. Jackie Perron, Secretary

School of Social Sciences

Legal Assistant Studies

Legal Assistant Studies Advisory Committee

Role: The advisory committee provides guidance regarding curriculum matters, program needs and professional trends and opportunities as it relates to the legal assistant studies program at LSSU.

Members:

Honorable Michael MacDonald,
Chippewa County District Court
Earl Kay, Chippewa County
Commissioner and Sault Business
Owner

Jeffrey T. Rogg,
Alpena County Asst. Prosecutor
Paul Hill, Dow Chemical Attorney
Gwen Worley, Michigan Works
Executive Director at Sault Branch
Patrick M. Shannon,
Assistant Superintendent of

Sault Schools and Former Prosecutor
James Blashill, Dean,
College of Arts, Letters and Social
Sciences

Dr. Leslie Dobbertin, Chair,
School of Social Sciences

Dr. Madan Saluja, Faculty
Vicki Voisin, CLAS, Charlevoix
Legal Assistant

Renee Jent, Alumni and Alpena
Legal Assistant

Lynn M. Trozzo, Alumni and Sault
Area Legal Assistant

Amy Perron, Alumni and Brimley/
Bay Mills Area Legal Assistant

Janice M. Van'tZelfde, Cheboygan
Legal Assistant

President, Student/Alumni
Legal Assistant Association

Carol S. Andary, Attorney and
Program Coordinator

University President and Provost,
ex-officio

Program Highlights:

The strengths or special features of the legal assistant studies program at LSSU include the following:

- numerous law courses are offered so that students gain substantial knowledge in various areas of the law
- law courses are practical "how to" courses taught by attorneys, judges and others who have expertise in the areas in which they teach
- an internship or practicum is available in a law office or other legal environment so that students gain valuable on-the-job experience which can lead to greater job opportunities (in fact, a number of graduates have obtained employment at their internship site)
- the program has been in existence at LSSU since 1983 and adheres to high educational standards
- the areas of ethics, legal research and legal writing (which are vital skills in the legal environment) are given particular emphasis
- recent employer survey (summer 1999) indicates that 61 percent of our alumni exceeded employer expectations and that 31 percent of our alumni met employer expectations
- annual alumni surveys demonstrate excellent job placement throughout the United States
- a legal assistant student/alumni association enhances the educational experience through its various activities (e.g., mock trials; guest speakers from the legal community; seminars; social events)
- the teaching emphasis is on preparing legal assistants to work within varied legal and related environments and to learn how to solve real-life legal problems
- an advisory committee consisting of judges, lawyers, legal assistants and various community members throughout northern Michigan (as well as faculty) provide guidance on curriculum, graduate placement, and other matters relating to the legal assistant program at LSSU
- LSSU is a member of the American Association for Paralegal Educators
- the program coordinator (an attorney) was on the Certifying Board for the National Association of Legal Assistants (and is also a member of various professional organizations, such as the American Bar Association, Legal Assistant Association of Michigan, etc.)

School of Social Sciences

The Political Science Program:

LSSU's innovative political science program is designed to contribute leaders who will help meet the challenges of the 21st century. The program provides students with both a broad liberal arts education and the important skills they need to begin a career or pursue additional education.

Since students of political science follow diverse career paths, political science majors at LSSU choose from one of four tracks or concentrations: *general political science, pre-law, public administration and secondary teaching*. Each concentration provides a combination of knowledge and skills uniquely appropriate for those with particular career goals.

One of the innovative features of the program is the replacement of the traditional minor field of study with a set of *cognate* (related) courses spread across several disciplines. The cognate requirements for each concentration are tailored to meet the specific needs of those within the concentration. The cognates complement a student's courses in political science by providing important background (such as history, philosophy and economics) and valuable skills (such as computer, research, writing and speaking skills).

A second innovative feature is a required year-long *senior seminar*. As part of this seminar, students analyze their career goals, prepare a resume and write a senior thesis. Since writing a thesis requires discipline, perseverance and the ability to integrate, the senior seminar serves as a capstone for the student's education. Students make public presentations of their theses prior to graduation. Family, friends and the University com-

munity are invited to these presentations.

Internships — which involve supervised practical work experience in an off-campus location — are available and encouraged. Internships may be carried out with local, state (or provincial) or federal agencies in the Sault Ste. Marie area. Other internship opportunities are available in Washington, Lansing, Toronto and Ottawa. One of the most exciting of these opportunities is the Washington Semester Program, a cooperative arrangement with American University in Washington, D.C. Students selected to participate in this program spend a semester taking classes and working in Washington.

Political Science

Faculty

Professors

Dr. Richard Conboy

Dr. Gary Johnson

Associate Professor

Ms. Carol Andary

Assistant Professor

Dr. Anthony Ndungu

Staff

Ms. Jackie Perron, Secretary

Student Organization:

The *Political Science Club* is a nonpartisan student organization that promotes discussion and understanding of current political issues. The club sponsors speakers, arranges debates between political candidates, hosts student forums with the University president ("Pizza with the President"), participates in debates with students from Algoma University College in Sault Ste. Marie, Ontario ("CanAm Debates"), sponsors voter registration and get-out-the-vote drives, and participates in a variety of other activities related to contemporary politics. Membership is open to all LSSU students.

School of Social Sciences

Psychology

Faculty

Professors

Dr. Susan Ratwik
Dr. Timothy Sawyer

Assistant Professor

Mr. Raymond Trouvé

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 gradu-

ate 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.

Social Studies

Faculty

Chairs

Dr. Leslie Ann Dobbertin,
School of Social Sciences

Dr. Daniel Dorrity,
School of Humanities and History

Professor

Dr. John Erkkila, Economics
Dr. Bruce Harger, Economics
Prof. James Moody,
History and Geography
Prof. Robert Money, History
Dr. Richard Conboy,
Political Science
Dr. Gary Johnson, Political Science

Assistant Professor

Dr. Anthony Ndungu,
Political Science

If you have a passion for the study of history, geography, political science or economics, and wish to share this interest with young people, you can prepare for a career teaching at the elementary, middle school, or secondary school level through taking a major in social studies. Basic knowledge in each of these four areas, plus more extensive study in two or more of these areas, is required for this major.

If you are preparing for elementary school teaching, you will complete course work in the areas of language arts, mathematics and natural sciences as well as courses in teacher education. You will also complete courses to meet the general education requirements for graduation. In the fifth year of your program of study, you will complete a teaching internship.

Preparation for teaching at the secondary level includes completing the social studies major and also a minor program of study in one of many teaching areas. In the

secondary education program, you will complete the sequence of teacher education courses and spend the fifth year in a student internship. You will also complete courses to meet the general education requirements for graduation.

After successfully completing the first two years of the Teacher Education Program, you will apply for admission to the Teacher Education Program. There are a number of requirements for admission of juniors to the Teacher Education Program. These are designed to assure that students who wish to become teachers have an intellectually and professionally sound preparation. Among these requirements is an overall grade point average of 2.70.

Upon completion of the program of study, you will be well prepared for a satisfying and demanding career nurturing the intellectual growth and development of young people while you continue to expand your own knowledge and skills.

School of Social Sciences

Sociology is the scientific study of human social groups, from families to societies. Sociologists examine how variables, such as culture, laws and customs, influence persons within society. Sociologists also investigate how people, through interaction, sustain or change society.

The knowledge acquired through sociology is useful in a number of careers, including human services, law enforcement, corrections, elementary and secondary teaching, business administration, public administration, law, and medicine, among others.

For the student who is planning a career as a professional sociologist, who teaches and conducts research; or a career as a consultant, a manager, or a policy analyst: an undergraduate major in sociology provides a good background for graduate work in sociology.

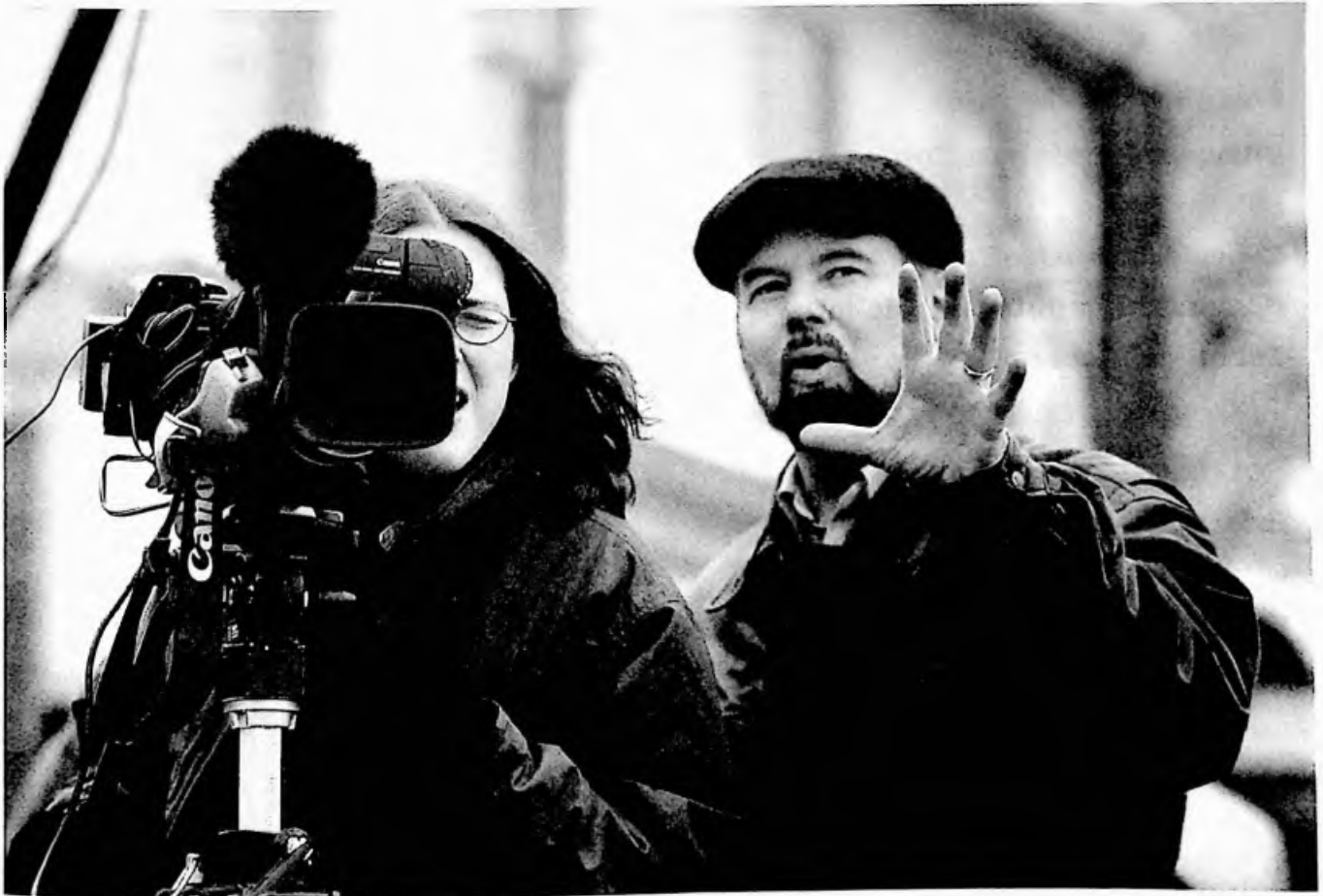
Sociology

Faculty

Chair
Dr. Leslie Ann Dobbertin,
Professor

Professor
Dr. Richard Crandall

Assistant Professor
Dr. Gerald F. Dobbertin



College of Business and Economics

Master's Degree

Business Administration

(Phased out by August 2003)

Bachelor's Degrees

Accounting

Tracks in:

- *Public Accounting*
- *Industrial/Managerial*
- *Data Processing and Accounting*
- *150-hour Program*

Business Administration

- *Business Education*
- *International Business*
- *Management*
- *Marketing*

Finance and Economics

Individualized Studies

Associate's Degrees

Business Administration

Liberal Arts

Office Administration

Personal Computer Specialist

Technical Accounting

Certificates

Information Processing

International Studies

Personal Computer Specialist

Minors

Accounting - Finance

Accounting - Teaching

Distributive Education - Teaching

Economics

Economics-Finance

Economics Teaching

General Business

Health Care Administration

Human Resource Management

International Studies

Marketing

Office Administration

Personal Computer Specialist

Secretarial Science - Teaching

College of Business and Economics

Mission Statement:

The faculty of the College of Business and Economics at Lake Superior State University will serve our students by helping them to identify and achieve their goals. We will do this by offering a full range of introductory and advanced courses, by making ourselves available for individual advising, and through the faculty's dedication to excellence in teaching, commitment to scholarship, and determination to bring new learning into the classroom.

We will provide these services to traditional first time on campus students and transfer students, as well as non-traditional students, on campus and at off-campus sites.

We will provide individual attention through academic advising and small class size. We will teach and demonstrate ethical conduct, business foundations, and current business concepts, technologies and practices. Our students will learn skills in research, communications and critical thinking. Our faculty will promote continuing professional development and association with professional and community organizations.

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.

Faculty

Dean
vacant

Professors

Dr. John E. Erkkila
Email: jerkkila@lssu.edu
Dr. Bruce T. Harger
Email: bharger@lssu.edu
Dr. Ann B. Marinoni
Email: amarinoni@lssu.edu
Dr. Madan Saluja

Associate Professors

Mr. Jack S. Hudson
Dr. Jean M. Lundin
Mr. Daniel D. Mugavero,
Email: dmugavero@lssu.edu

Assistant Professors

Dr. J Robert Field
Email: jfield@lssu.edu
Prof. Valerie C. Filek
Email: vfilek@lssu.edu
Ms. Donna M. Payment
Email: dpayment@lssu.edu
Ms. Linda S. Schmitigal
Email: lschmitigal@lssu.edu
Mr. Scott Suneson
Email: ssuneson@lssu.edu

College of Engineering and Mathematics

Bachelor's Degrees

Computer and Mathematical Sciences

Computer Engineering

Robotics and Automation

Computer Networking

Computer Science

Secondary Teaching Option

Electrical Engineering

Digital Systems

Electrical-Mechanical

Robotics and Automation

Engineering Management

Individualized Studies

Manufacturing Engineering Technology

General

Robotics and Automation

Mathematics

Pure Mathematics

Actuarial and Business Applications

Elementary Teaching Option

Secondary Teaching Option

Mechanical Engineering

Chemistry and Environmental

Mechanical Design Engineering

Robotics and Automation

Associate's Degrees

Computer Science

General Engineering

General Engineering Technology

Internet/Network Specialist

Liberal Arts

Manufacturing Engineering Technology

Telecommunications Engineering Technology

Associate of Applied Science

Construction Technology

Machine Tool Technology

Minors

Computer Science

Computer Science Teaching

Mathematics

Mathematics Elementary Teaching

Mathematics Secondary Teaching

School of Engineering and Technology

Mission Statement:

The School of Engineering and Technology provides a superior learning experience with a vision of the future educational needs of society. The primary endeavor is to offer a high-quality undergraduate education that is relevant to the future careers and lives of its students.

The School incorporates a personal approach to education that is supportive of students and provides fundamental and applied skills in computing, mathematics and engineering. The programs develop and integrate students' interpersonal skills with a technical and liberal education.

The School recognizes that faculty and staff are essential in the realization of its mission and seeks to provide a working environment that supports, nurtures and values these individuals. A team atmosphere is fostered whereby individuals are respected, the effort and contributions of individuals are valued, and the worth of the engineering profession is instilled in our students.

The School provides a learning environment, including faculty, staff and administration, focused on the evolving needs of students, graduates and society. This allows individuals with diverse backgrounds to enter, succeed and continue the lifelong learning process in their chosen careers.

Goals:

Goal A:

Deliver a high-quality undergraduate education that is current and provides skills to be successful in professional careers or graduate school.

Goal B:

Provide an environment that utilizes faculty, staff and administration in a way that is responsive to the needs of our students and society.

Goal C:

Provide opportunities for students of diverse backgrounds to enhance their personal and professional growth.

Goal D:

Provide programs that focus on the applications of fundamental technical principles and non-technical skills directed toward professional careers.

Goal E:

Provide high-quality programs through ongoing external and internal reviews.

Goal F:

Provide an exceptional faculty and staff, state-of-the-art facilities and equipment, and other resources to fulfill and enhance the School's viability, productivity and effectiveness.

Faculty

Mr. Ray Adams, Dean

Dr. Amer Alshawa
Assistant Professor

Dr. Nael Barakat,
Assistant Professor

Dr. David Baumann,
Associate Professor

Dr. Matthew Carroll,
Assistant Professor

Mr. James Devaprasad,
Associate Professor

Mr. Paul Duesing,
Associate Professor

Mr. Steven Gerrish,
Assistant Professor

Dr. Wendy He,
Assistant Professor

Mr. David McDonald,
Professor

Mr. Alan Niemi,
Assistant Professor

Dr. Kevin Schmaltz,
Associate Professor

Mr. Keith Schwiderson,
Assistant Professor

Mr. Morrie Walworth,
Assistant Professor

School Secretary

906-635-2207

1-888-800-LSSU, ext. 2207

Fax: 906-635-6663

email: engtech@lssu.edu

Web Site: engineering.lssu.edu

School of Engineering and Technology

IAB members are expected to:

- Evaluate and critique engineering programs by providing professional experience and direction.
 - Be able to provide technical support such as teaching materials, equipment information, equipment donations and funding.
 - Promote LSSU engineering curriculum to young people by participating in regional recruitment seminars and invite students for industrial tours.
 - Attend IAB meetings.
 - Support the senior project program with ideas or equipment and/or materials.
 - Encourage professional development of the faculty by providing summer employment and sponsoring sabbaticals.
 - Provide assistance with job placement for students, both full-time and summer internships.
 - Participate on subcommittees.
 - Vote during IAB meetings on issues relative to the Role Statement.
-

Engineering and Technology Industrial Advisory Board

Members: Frederick J. Berg, Chair of Advisory Board, Delphi Saginaw Steering Systems; David Allison, Dura Automotive Systems, Inc.; Bob Andersen, Continental Teves; George Bielis, DANA Corporation; Robert Byrum Sr., Sensor Manufacturing; Chris Conklin, Dow Corning Corporation; Thomas Chrapkiewicz, Philips Semiconductors; Charles Feltner, ret., Ford Motor Company; Jim Gibbs, Visteon Corporation; Dan Goodrich, Secretary of Advisory Board, Continental Teves; Gerry Grosskopf, Industrial Magnetics; Robert Guysky, Daimler Chrysler Corporation; Harland Hyatt, ret., Delco Corporation; Ralph Larson, Michigan Scientific Corporation; James Lewis, General Dynamics; Charles Litzner, Edison Sault Electric Company; Adam Lyon, Dura Automotive Systems, Inc.; Ernest Maas, Edison Sault Electric Company; Chris Maguire, Federal Screw Works; Jeff Menosky, Michigan Scientific Corporation; Michael E. Rasmussen, Delphi-E; Russell Richmond, Delphi-E; Ralph S. Shoberg, R.S. Technologies; Meri Skiera, Maxon Corporation; Don Stephanic, Applied Manufacturing Technologies; Wendy Stibitz, Harbour and Associates; Brian Theriault, Quicksilver Resources; John Truckey, Dura Automotive Systems, Inc., Lynnette Utecht, Johnson Controls; Matt Witte, Ph.D., Water Quality Systems; Jim Ziehl, Daimler Chrysler Corporation; Marty Zoerner, Northern Diecast.

Role Statement:

The Industrial Advisory Board (IAB) is comprised of professional men and women in engineering positions who actively participate in the development of and the promotion of Lake Superior State University engineering technology programs, faculty members and students.

IAB members guide, nurture and assure that the engineering department produces engineers with skills that will not only fulfill today's industrial needs, but will foresee the requirements of tomorrow in a global economy. IAB members provide "real time" interface with both faculty members and students bringing today's industrial technology to LSSU "today."

School of Engineering and Technology

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.

Two other options available to students for their senior experience are an on-site cooperative education project or a research project in the LURE under the direction of a faculty member.

Students are required to develop and manage a budget, establish methods of purchasing items and communicate regularly with an industrial project customer contact.

Cooperative Education and Summer Internships

You are encouraged to participate in the cooperative education programs and summer internships. Through these experiences, you gain valuable industrial experience which 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.

Those students within the computer engineering, electrical engineering, manufacturing

engineering technology and mechanical engineering programs are eligible to receive a certificate that documents this practical training.

Related Professional Opportunities

Faculty/Student Applied Research

The Laboratory for Undergraduate Research in Engineering (LURE) is a facility that houses and monitors all research activities. Students participate in externally funded, faculty-driven, research projects — most of which are long term in nature. The facility houses workstations, personal computers, robots, electronic test equipment, and an area for group meetings, providing an avenue for entrepreneurial experiences.

Admission Requirements

Freshman — Please refer to the section on Admissions for further details.

The academic background of the applicant must demonstrate an ability to meet the requirements of an engineering program at LSSU. For those students entering directly from high school, admission to the engineering programs is based on high school grade point average or ACT or SAT scores.

Either a high school GPA of 2.75 or above, an ACT composite score of 24 or above, or SAT score of at least 1110 is required for admittance directly into computer, electrical or mechanical engineering. Those students with a high school GPA between 2.5 and 2.75 may be admitted into computer, electrical or mechanical engineering if their GPA in all English, mathematics and science courses is at least 2.75. Applicants not meeting this

Student Organizations

Memberships in student chapters of professional organizations are available to further enhance the educational opportunities for students. Organizations include:

American Society of Mechanical Engineers (ASME)

Institute for Electrical and Electronics Engineers (IEEE)

Society of Automotive Engineers (SAE)

Society of Manufacturing Engineers (SME)

Society of Women Engineers (SWE)

Engineering Honor Society

School of Engineering and Technology

Accreditation

The manufacturing engineering technology bachelor's program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), and the electrical and mechanical engineering bachelor's programs are accredited by the Engineering Accreditation Commission (EAC) arm of ABET. EAC and TAC of ABET are at 111 Market Place, Suite 1050, Baltimore, MD. Phone: 410-347-7700

requirement but meeting admission requirements for the University will be admitted into the general engineering program.

For those students not having met the original GPA requirements for entrance into computer, electrical or mechanical engineering, they may switch their majors after successfully completing two semesters of college-level engineering curriculum course work with a GPA of at least a 2.0.

Transfer Students — Official university or college transcript(s) should be sent to the Registrar's Office. The results of any advanced placement or aptitude tests taken in high school or college should be sent to the Admissions Office.

The academic background of the applicant must demonstrate an ability to meet the requirements of an engineering program at LSSU. A minimum GPA of 2.20 on all college level course work and eligibility to return to the former college are required for admittance into an engineering program. Students with grade point averages of less than 2.20 will be admitted into the general engineering program. After completing 15 credits of LSSU engineering curriculum course work with at least a GPA of 2.0, the student will be allowed to change his/her major to computer, electrical or mechanical engineering.

School of Engineering and Technology

Computer engineering and other computer-related fields comprise some of the fastest-growing job markets today. Excellent job opportunities are forecast beyond 2005. LSSU's computer engineering program has been designed to put you in that high-demand job market with the potential for good career growth. The program blends practical computer science courses in computer organization, databases, operating systems and networks with traditional hands-on electrical engineering courses in digital circuits, digital system, microcontrollers, computer programming and digital signal processing. This combination provides a broad-based education that ties software to hardware and theory to application.

The computer engineering program combines principles from computer science and mathematics and electrical engineering to develop solutions to computer-related problems. Professional career opportunities cover a broad spectrum of engineering in such areas as hardware and software design, analysis, testing and development, robotics and research. The program is especially focussed to provide students with an applications orientation to computer engineering. The

curriculum offers strong fundamentals in digital circuits, computer programming, microcontroller programming and interfacing, databases and operating systems. Students can then select upper-level courses in robotics and automation, digital systems or mathematics to complete their degree.

The curriculum contains a strong laboratory emphasis that provides you with practical design applications of theoretical concepts. During the senior design courses, computer 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. Cooperative education and undergraduate research opportunities exist for those who wish to include professional activities with their engineering studies.

You will also have direct contact with expert professors in both the lecture and laboratory components of your courses.

Computer Engineering

Department of Electrical & Computer Engineering

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Telephone: 906-635-2727
Email: mwalworth@lssu.edu

School Secretary
Office: 202 CASET
Telephone: 906-635-2207
Fax: 906-635-6663

School of Engineering and Technology

Electrical Engineering

Department of Electrical & Computer Engineering

Maurice Walworth, Chair
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School Secretary
Office: 202 CASET
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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 you 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.

You can select specific options in Digital Systems Design, Robotics and Automation or Electrical/Mechanical Systems.

- The Digital Systems Design Option is structured to prepare you for careers in digital electronics and computer systems.
- The Robotics and Automation Option is structured to prepare you for careers in robotics, automated manufacturing or control systems engineering.

- The Electrical/Mechanical Option combines electrical and mechanical course work to prepare you 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 you 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 your course of study, you will work in modern, state-of-the-art laboratories in electronics, digital systems, robotics, automated manufacturing systems and electrical-mechanical systems. You will also have direct contact with expert professors in both the lecture and laboratory components of your courses. Cooperative education and undergraduate research opportunities exist for those who wish to include professional activities with their engineering studies.

School of Engineering and Technology

The engineering management degree program is designed to help prepare technical students for management opportunities. The program prepares you for a variety of management careers such as business, accounting, management, marketing, economics and manufacturing. This degree will not only expand your technical education, but also provide business

skills which could qualify you for advancement in industry. Upon receipt of this degree, you also have the option of pursuing a master's degree in business administration (MBA). Program entry requires an approved technical associate's degree of 62 semester credits, minimum.

Engineering Management

This curriculum is for students who have not decided on an engineering major.

General Engineering

The associate's 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. You will receive extra advising and schedule courses in different areas to assist in determining your career interests. As soon as you choose an engineering technology major, you will transfer to that program.

General Engineering Technology

Department of General Engineering/Engineering Technology

David McDonald, Chair
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Telephone: 906-635-2208
Email: dmcdonald@lssu.edu

School Secretary
Office: 202 CASET
Telephone: 906-635-2207
Fax: 906-635-6663

School of Engineering and Technology

Manufacturing Engineering Technology

Department of Manufacturing Engineering Technology

Jim Devaprasad, Chair
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Email: jdevaprasad@lssu.edu

School Secretary
Office: 202 CASET
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Fax: 906-635-6663

Manufacturing Engineering Technology (MfgET) is a multi-disciplinary field integrating basic knowledge and skills from fields such as mechanical engineering technology, electrical/electronics engineering technology, computer science, management and economics. Whether it be a single gear or a complete automobile engine, the complete set of events that results in a finished product is planned and implemented by a manufacturing engineering technologist.

As with all engineering technology programs, the focus of the MfgET program is in the application of engineering principles. Therefore, unlike accredited engineering programs that require four or more calculus courses (or advanced math courses), the MfgET program (general option) requires only one calculus course and one statistics course as necessary background for applied engineering.

LSSU's School of Engineering and Technology houses traditional training facilities such as a manufacturing processes lab, materials lab, electronics lab and digital/microprocessor lab. Further, LSSU is home for one of the best educational facilities in robotics and automation in North America. This lab has 12 industrial robots, several programmable logic controllers, machine vision systems and material handling systems. The program contains a strong laboratory emphasis with plenty of opportunities to work on these and other real manufacturing systems.

Entrance requirements for the program for students completing high school are the same as LSSU's general entrance policy (please refer to the section on Admissions for further details). Students from other colleges and universities can transfer to LSSU and apply appropriate credits towards the bachelor's degree in MfgET. Students who are completing their associate's degree in a related field

from a community college can typically complete the MfgET B.S. degree in two additional years at LSSU.

A scientific "high technology" basis in the field of manufacturing engineering technology is evolving. The MfgET program is designed to place LSSU graduates at the leading edge of this evolution.

Other Program Highlights:

- The program is nationally accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202 - Telephone (410) 347-7700.
- The teaching emphasis is on preparing you to solve real-world manufacturing problems.
- You have the option to specialize in Robotics and Automation using modern lab facilities (LSSU being one of two universities in the USA to offer this option in MfgET). Past graduates have had nearly 100 percent job placement in industry with high starting salaries.
- Emphasis on computer applications in manufacturing including: CAD, CAM, PLC, Robotics, and CNC manufacturing processes.
- Cooperative education (co-op work) opportunities exist for those interested in combining professional work experience with their engineering technology studies.
- Small classes and labs averaging 15 students.
- You will receive instruction from faculty who view teaching as a priority.

School of Engineering and Technology

This degree offers a balanced education with career opportunities in a wide range of positions in mechanical and manufacturing 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 three options: design, robotics and automation, or chemistry and environmental. The design option is structured to prepare individuals for careers in product and process design. The robotics and automation option is structured to prepare individuals for careers in automated manufacturing. The environmental option is structured to provide individuals with strong science and engineering skills for a career in an environmental engineering field. All three programs emphasize technical topics which are current in the engineering

market and include a senior capstone design project, where the students work in multi-disciplinary teams. The projects can have a research or industrial base.

The course work in all of the options is designed to provide you 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, you 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 who wish to interlace professional work opportunities with their engineering studies. Cooperative education may be used to fulfill part of the senior year project experience.

To complete the bachelor of science degree in mechanical engineering, you must complete the course requirements, demonstrate writing proficiency and achieve an overall average grade of C (2.0) or better in all courses listed as departmental requirements.

Mechanical Engineering Program

Department of Mechanical Engineering

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Email: kschmaltz@lssu.edu

School Secretary
Office: 202 CASET
Telephone: 906-635-2207
Fax: 906-635-6663

School of Engineering and Technology

Telecommunications Engineering Technology Associate's Degree

Department of General Engineering/Engineering Technology

David McDonald, Chair
Office: 306A CASET
Telephone: 906-635-2208
Email: dmcDonald@lssu.edu

School Secretary
Office: 202 CASET
Telephone: 906-635-2207
Fax: 906-635-6663

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 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. You 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.

To complete the associate's degree in telecommunications engineering technology, you must complete the course requirements and demonstrate writing proficiency.

School of Mathematics and Computer Science

Mission Statement

The School of Mathematics and Computer Science offers baccalaureate degree programs in mathematics, computer science and computer networking that are designed to prepare graduates for professional careers, and also to provide them with the background needed to pursue further study in graduate school.

The School also offers computer-related associate's degrees, designed to prepare graduates for employment in technologically challenging positions in business and industry.

Finally, the School provides important foundational support in mathematics and computer science to the various academic programs offered within other units of the University.

Computer Science

Our society is undergoing a modern revolution — a revolution driven by computer technology. Computer scientists work at the leading edge of that revolution, developing the software systems that allow us to effectively utilize that technology. The work is challenging, but immensely rewarding.

The School of Mathematics and Computer Science offers several computer-related degree programs. The bachelor of science in computer and mathematical sciences combines a strong foundation in computer science with a significant foundation in mathematics. The resulting program provides considerable versatility and potential, both for advanced study in graduate school, and also for many numerically intensive computer-related careers. The bachelor of science program in computer science combines that

same strong computer science foundation with a complement of mathematics and business courses. Students who pursue this option will be prepared for opportunities as programmers, database administrators and systems analysts. The computer science — secondary education program provides students with the background needed to teach, as well as to manage the computer environments in their schools.

Finally, the new computer networking degree gives students the knowledge and tools to be successful in a very exciting field.

The two-year program in computer science provides students with the skills needed to pursue entry-level opportunities in programming and data base management, while the two-year Internet/network specialist program provides an excellent starting point for those wanting to pursue career options in this rapidly growing area.

Additionally, a minor program in computer science provides excellent support for virtually any other major program at the University. An approved teaching minor in computer science is also available for students in education programs.

Mathematics

Mathematics is the foundation of the science and 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. Courses offered in this discipline provide the foundation for future work in mathematics. Our teaching objectives are twofold: to give you an understanding of mathematics, and to impart an understanding of the many ways in which this tool may be used.

Faculty

Chair

Mr. Mark Terwilliger
Associate Professor

Associate Professors

Mr. Thomas Boger
Dr. Anthony Fabbri
Dr. Mieczyslaw Gutowski

Assistant Professors

Ms. Sherilyn Duesing
Ms. Janina Gutowska
Dr. Scott Lewis
Mr. Evan Schemm
Dr. Brian Snyder
Mr. Randall Suggitt

School of Engineering and Technology

Telecommunications Engineering Technology Associate's Degree

Department of General Engineering/Engineering Technology

David McDonald, Chair
Office: 306A CASET
Telephone: 906-635-2208
Email: dmcdonald@lssu.edu

School Secretary
Office: 202 CASET
Telephone: 906-635-2207
Fax: 906-635-6663

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To complete the associate's degree in telecommunications engineering technology, you must complete the course requirements and demonstrate writing proficiency.

School of Mathematics and Computer Science

Mission Statement

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Ms. Janina Gutowska
Dr. Scott Lewis
Mr. Evan Schemm
Dr. Brian Snyder
Mr. Randall Suggitt

School of Mathematics and Computer Science

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.

The Actuarial and Business Applications Option of the mathematics degree provides a unique combination of a strong mathematical background with economics and finance course work. Students graduating with this option can find career opportunities as actuaries, operations researchers, financial planners and statisticians.

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.

The School also offers a minor in mathematics to provide excellent support and value to most majors offered at the University. Separate mathematics teaching minors are also available for students pursuing teacher education at either the elementary or secondary level.

Program Highlights

- Students majoring in mathematics and computer science can participate in many student group activities, including competitions, company tours, and conferences at which you may speak or help organize.
- All of the computer-related bachelor's degrees include both sophomore and senior

projects. These "real-world" projects involve working with departments on campus and organizations in the community to serve their computing needs. You gain valuable experience in designing systems, as well as working with customers. Also, you can select projects in a certain area (applications programming, web page development, database administration, etc.) to tailor the degree to your specific interests. The associate's degrees in computer science and Internet/network specialist include a final project as well.

- The bachelor's degree in mathematics requires a capstone senior project. You will work with a faculty advisor to research an area of mathematics where you have a specific interest. The year concludes with a final presentation of results.

Entrance Requirements

To qualify for admission to the programs offered by the school, applicants must satisfy University admission requirements as described in the Admissions section of this Catalog.

Secondary school academic subjects should include: Three units of computer science and English, two units of algebra and one unit of geometry. It is strongly recommended that applicants have a fourth unit of college-preparatory mathematics, which includes one-half unit of trigonometry. A unit of computers, as well as 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.

School Offerings

- B.S., Computer and Mathematical Sciences
 - B.S., Computer Networking
 - B.S., Computer Science
 - B.S., Computer Science—Secondary Teaching Option
 - B.S., Mathematics
 - B.S., Mathematics—Actuarial and Business Applications
 - B.S., Mathematics, Elementary Teaching Option
 - B.S., Mathematics, Secondary Teaching Option
 - A.D., Computer Science
 - A.D., Internet/Network Specialist
 - Minor in Computer Science
 - Minor in Computer Science, Teaching Option
 - Minor in Mathematics
 - Minor in Mathematics, Elementary Teaching Option
 - Minor in Mathematics, Secondary Teaching Option
-

College of Natural and Health Sciences

Bachelor's Degrees

Athletic Training

Biology

Concentrations in Botany, Ecology, Elementary Teaching, General Biology, Pre-professional, Secondary Teaching, Zoology

Chemistry

*Pre-Professional
Secondary Teaching Option*

Clinical Laboratory Science

Environmental Chemistry

Environmental Health

Environmental Science

Secondary Teaching Option

Exercise Science

Fisheries and Wildlife Management

*Concentrations in Fisheries Management,
Wildlife Management*

Geology

*Options in:
Environmental Geology
Secondary Teaching*

Individualized Studies

Nursing

*Pre-Licensure Program
Post-Licensure Completion Program*

Pre-Pharmacy (transfer program)

Recreation Management

*Concentration in Parks and Recreation
Management*

Therapeutic Recreation

Associate's Degrees

Chemistry

Health/Fitness Specialist

Liberal Arts

Natural Resources Technology

Paramedic Technology

Associate of Applied Science

Chemical Technology

Health Care Provider

Certificates

Paramedic Training

Practical Nursing

Minors

Biology

Chemistry

Environmental Science

Geology

Geology Earth Science Teaching

Group Science — Elementary

Health Care Administration

Paramedic Technology

Recreation Studies

College of Natural and Health Sciences

Faculty

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Dr. Lynn Conklin,
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Professors

Dr. Lewis Brown
Dr. Sally Childs
Dr. Donald McCrimmon
Dr. C. Randall Mullin
Dr. Steven Person

Associate Professors

Dr. Thomas Allan
Dr. Richard Back
Dr. Michael Doyle
Dr. Barbara Evans
Dr. R. Lee Gardiner
Dr. Paul Kelso
Dr. Dennis Merkel
Dr. David M. Myton
(sabbatical 2002-2003)
Dr. John Roesse
(sabbatical 2002-2003)
Ms. MaryAnne Shannon
Dr. Deborah Stai
Dr. Gregory Zimmerman

Mission:

The College of Natural and Health Sciences encompasses the biological and physical sciences, nursing, allied health sciences and recreation management. We seek to provide a challenging educational experience leading to competency in the major, as well as preparation for employment, admission to clinical practice, or enrollment in a graduate or professional school. Our curricula engage students in a continuum of active involvement, both theoretical and applied, culminating in student-scholars and faculty-mentors working together to address significant unresolved problems, scholarly issues and professional challenges.

Assistant Professors

Ms. Donna Anleitner
Mr. Ron Hutchins
Ms. Lynn Kabke
Dr. Barbara Keller
Dr. Nancy Speer Kirkpatrick
Dr. John Lenters
Dr. Alexander Litvinov
Ms. Vicki McLeod
Ms. Debra McPherson
Ms. Debra Roslund-Young
Dr. Ronald Schott
Mr. Joseph Susi II
Dr. David Szlag
Dr. R. Marshall Werner
Ms. Edith West
Dr. Judy Westrick
Dr. Stephen Yanni

Instructors

Mr. Darold Borowiak
Mr. Christopher Kirk

School of Natural Sciences

Mission:

The School of Natural Sciences is comprised of the Departments of Biology, Chemistry and Geology/Physics. The school's mission is to work closely with students in identifying and achieving their academic, personal and professional objectives. We focus on active involvement creating powerful learning environments, making special use of our proximity to natural features including the biological and physical resources of the region, the confluence of the three largest Great Lakes and the Canadian Shield. We engage students in the enterprise of science through inquiry-based learning, critical thinking, and progressive integration into its community of scholars.

Professional Staff

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Faculty

Professors

Dr. Lewis Brown
Dr. Michael Donovan
Dr. Donald A. McCrimmon
Dr. C. Randall Mullin
Dr. Steven Person

Associate Professors

Dr. Thomas Allan
Dr. Richard Back
Dr. Michael Doyle
Dr. Barbara Evans
Dr. Paul Kelso
Dr. Dennis Merkel
Dr. David M. Myton
(sabbatical 2002-2003)
Dr. John Roesse
(sabbatical 2002-2003)
Dr. Deborah Stai
Dr. Gregory Zimmerman

Assistant Professors

Dr. Barbara Keller
Dr. Nancy Speer Kirkpatrick
Dr. John Lenters
Dr. Alexandre Litvinov
Dr. Ronald Schott
Dr. David Szlag
Dr. R. Marshall Werner
Dr. Judy Westrick

School of Natural Sciences

Biology

Faculty

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Dr. Deborah Stai

Assistant Professors

Dr. Nancy Speer Kirkpatrick
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Department of Biology:

The following programs in the biological sciences prepare you for careers in research or applied aspects of life sciences. Lake Superior State University is ideally located for field studies of terrestrial and aquatic resources. By selecting your courses carefully, you can qualify for state and federal positions in fisheries biology, wildlife biology and other related fields. Laboratory courses, many of which are field-oriented, give you the knowledge, experience and techniques necessary for technical positions with industry and government agencies. The department also provides many opportunities for you to gain hands-on experience via independent and collaborative research. Students interested in research positions in aquatic ecology, botany, microbiology, physiology, fish and wildlife ecology and numerous other life sciences, receive a strong undergraduate background at Lake State that will enable them to either pursue a career directly or go into 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 advisors to ensure these requirements are met.

Recommended Minimum Guidelines

To be successful in these science programs, applicants should be above average graduates of recognized secondary schools. The secondary school preparation should include a four year curriculum of the following subjects: one unit of beginning algebra; one unit of advanced algebra; one unit of chemistry; and three units of English. In addition, one unit of

biology and one unit of trigonometry are highly recommended.

Degree Programs

Bachelor of Arts: Biology

Students wishing to combine a strong biology curriculum with a minor in another discipline should consider this career track. For example, those who have an interest in social applications of the life sciences could take a minor course of study in a variety of fields. Students interested in the Bachelor of Arts: Biology- Elementary Education option should contact the Teacher Education Department for current courses and entrance requirements.

Bachelor of Science: Biology

Botany Concentration — Students interested in studying plants in their natural setting and in the laboratory should consider this career track.

Ecology Concentration — Students interested in the abundance, distribution and interaction of organisms with their natural environment, and the effects of human populations on these ecosystems, should consider this career track.

General Biology — Students interested in a broad study of living systems, allowing for flexibility in curricular and career pursuits, should consider this career track.

Pre-professional — Students wishing to pursue careers as physicians, dentists, optometrists or veterinarians should follow this career track. It is highly recommended that you work closely with an advisor to ensure appropriate entrance requirements are met.

School of Natural Sciences

Biology

Zoology — Students interested in pursuing an organismal approach to study the habitat, behavior and life history of animals should follow this career track.

Bachelor of Science: Biology-Secondary Education

This program provides you with the basic concepts of biology as well as developing an understanding of the teacher/learning process and the role of science in education. The program leads to a DX science endorsement which certifies the graduate to teach a wide range of science courses in Michigan high schools. Those interested in this course of study should contact the Teacher Education Department concerning entrance requirements.

Bachelor of Science: Clinical Laboratory Science

Clinical laboratory science is a profession concerned with providing information to medical professionals based on analytical tests. These tests are designed to detect, provide evidence of, or prevent disease or impairment, and to promote and monitor good health. Graduates of this program are eligible to take national examinations for certification as registered clinical laboratory scientists and medical technologists.

Bachelor of Science: Fisheries and Wildlife Management

Fisheries Management Concentration — For students interested primarily in aquatic organisms and ecosystems, including fish and shellfish, threatened and endangered species, and hatchery-reared fishes.

Wildlife Management Concentration — For students interested primarily in terrestrial animals and ecosystems, including game birds and mammals, non-game animals, and threatened and endangered species.

Fisheries and Wildlife Management — For students interested in both aquatic and terrestrial organisms and ecosystems, including game and non-game fish and wildlife species.

Most graduates are employed by state or federal natural resource agencies, environmental consulting firms, private land management companies or public utilities. Because the more challenging and rewarding jobs require a master's degree, these programs emphasize preparation for graduate study.

Students desiring membership with American Fisheries Society and/or The Wildlife Society should consult with an advisor for details. Because all students in this curriculum must complete a senior thesis research project, this rigorous curriculum provides an extremely competitive background for admittance to graduate school. All students majoring in fisheries and wildlife management are strongly encouraged to work at least one summer or semester for a state or federal management agency to gain experience and further their professional development.

Associate Degree: Natural Resources Technology

This two-year program provides a strong background of applied, field-oriented knowledge and acquisition of the technical skills needed for natural resource evaluation and management. Graduates can continue their studies with a bachelor of science in parks and recreation manage-

School of Natural Sciences

Biology

ment; criminal justice; or fisheries and wildlife management.

Honors Research Sequence

This research sequence is 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, you will forward an abstract of your work to the department chair and during the tenth week of the same semester, submit the final copy of your 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 your senior thesis.

School of Natural Sciences

Chemistry

A degree in chemistry, environmental health, environmental science or environmental chemistry is ideal for the student who has a concern for and interest in the environment and an aptitude in the natural sciences. These challenging and rewarding degree programs offered through the Department of Chemistry emphasize a solid foundation of course work in biology, chemistry, geology and physics as well as their application to environmental issues. Our degrees integrate the study of the natural and physical sciences in order to prepare you for interesting and diverse employment opportunities as environmental professionals, chemists, and for successful entry into graduate school. Prospective teachers also find the cross-disciplinary approach of the environmental/teaching degrees provides a solid foundation for their classroom teaching experience, and increases their employment options.

The Chemistry Department at Lake Superior State University has unique opportunities that enrich and broaden the scope of our environmental degree programs. Natural settings surround the university, which is strategically located at the outlet of Lake Superior and within an hour of Lakes Huron and Michigan. This proximity to the diverse natural environment provides the basis for our integration of environmental issues and topics throughout our courses and enriches a broad variety of field and research experiences available to you. We emphasize active learning environments for the student, and stress the hands-on experiences and training required to develop the skills and knowledge needed after graduation. Graduates of the program will apply chemical methods to the study, amelioration,

and solution of environmental problems. Depending on their areas of specialization and certification, graduates may find employment with federal and state or provincial agencies, industries, businesses, public and private schools, or as environmental specialists and as environmental consultants.

The environment is the central theme of the student/faculty research conducted within the department. Every student participates in an active and meaningful research experience working closely with the faculty to explore and resolve significant issues and problems. Student/faculty research projects, which include a wide diversity of subjects, often serve to focus the student's career interests and serve as a gateway to their subsequent career goals. The faculty work with you on research projects in areas which include: ground water and surface water quality; the routes and effects of water, soil and air pollution; the physical and biological pathways for the uptake of contaminants by plants, animals and the soil; and many other topics.

Students planning to enroll in the chemistry, environmental health or environmental chemistry/science degrees or the teaching degree tracks must satisfy the University admission requirements. We recommend that the following courses be completed at an accredited secondary school: two years of algebra and geometry; three years of English; and one year each of biology, chemistry and physics. Additional courses in trigonometry, calculus and the physical sciences are highly recommended. Students should attain above average standing in their high school graduating class.

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School of Natural Sciences

Geology and Physics

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Professor
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Dr. Ronald Schott

Study of the discipline of geology at Lake Superior State University prepares students for careers involving energy fuels and mineral exploration and production, environmental cleanup and protection, and even extraterrestrial exploration. Many students in geology seek admission to advanced study following completion of the bachelor's degree.

The geological environment of Lake Superior State University provides unexcelled opportunities for field study of classic outcrops illustrating lava flows, intrusions, structures and metamorphism from the Canadian Shield and relatively undisturbed fossil-rich sedimentary formations from the Michigan Basin. Proximity to deposits of gold, iron, copper, dolomite and other minerals as well as oil and natural gas fields in Michigan provides advantages to study at Lake Superior State University. In addition to geology-related courses, the department offers courses in calculus-based and general college physics, geophysics and astronomy.

We use a variety of innovative, hands-on teaching/learning techniques that emphasize student development of action-oriented critical thinking and problem-solving skills. You will experience project-centered teamwork through participation in designing studies; gathering, processing and interpreting data; and drawing conclusions to address real-world problems. You will refine necessary communication skills by presenting findings of your studies in professionally accepted written and oral forms. We take particular pride in providing the opportunity for undergraduate students to participate in our active research programs, particularly those in paleontology and geophysics.

To qualify for admission to the program in geology, you must satisfy University admission requirements. Recommended high school subjects include three years of English, two years of algebra, and one year of geometry, chemistry and physics. One semester of trigonometry is highly recommended.

School of Nursing and Health Sciences

Mission:

To provide students with the educational opportunities to develop into competent professionals. We stress active learning, through experiences requiring students to engage in critical thinking, apply theoretical concepts, demonstrate skill competencies, and model professional values. We challenge students to seek experiences that nurture and validate their professional identities and community responsibilities.

In our school, students develop the ability to solve problems and communicate effectively in a global environment, and receive the educational preparation necessary to write the national certification or licensure examinations in their respective fields. Our educational programs are based upon standards set forth by accrediting/approval agencies.

Professional Staff

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Instructors
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School of Nursing and Health Sciences

Nursing

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Instructor

Darold Borowiak

Advisory Committee:

The Department of Nursing has an advisory committee with local area members representing health care providers, health care administrators, health education programs and high school counselors. These members represent a community perspective to assist in providing feedback into educating bachelor's-prepared nursing graduates, identification of potential student learning activities, health care trends affecting the delivery of nursing services, and assist in ongoing evaluation of the program.

The Department of Nursing offers a bachelor's 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 Accreditation Commission, 61 Broadway - 33rd Floor, New York, NY 10006.

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 program. 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 Health CARE Center provides 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.

The programs provide students with the opportunity to acquire knowledge, values and skills necessary for the practice of professional nursing.

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 128 credits is required to complete a bachelor of science degree in nursing.

School of Nursing and Health Sciences

Pre-Nursing Entrance Requirements:

To qualify as a pre-nursing major, 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.

Students complete one year in pre-nursing before making application to the Department of Nursing for admission to the nursing major. Admission is based upon 1) filing a Declaration of Intent to enter the nursing program by February 1 of the spring prior to fall admission, 2) successful completion of selected pre-nursing courses, and 3) academic achievement.

**Nursing, B.S.
Four-Year Program
Pre-Licensure Track**

School of Nursing and Health Sciences

Nursing, B.S. Four-Year Program Pre-Licensure Track

It is recommended that students be able to demonstrate computer literacy — basic word processing, library and Internet searches. 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. A maximum of 50 students with the highest grade point average will be accepted.

Required academic courses are separated into three groups:

1. Nursing support courses (basic prenursing competency skills, anatomy and physiology, microbiology, life chemistry, mathematics, psychology, sociology, nutrition, pharmacology, pathophysiology, computer applications in the health sciences, health issues of aging populations, multicultural approach to health care and statistics).
2. General education requirements (English, humanities and speech).
3. Nursing courses

Progression Requirements in Nursing:

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.

Transfer credit will be granted on an individual basis. Only those courses with a grade of *C* or better are transferable. Credits for baccalaureate nursing courses and pharmacology are transferable for five years.

Time requirement 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 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 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. The Michigan Board of Nursing may deny a graduate the opportunity to take the licensure examination on the basis of conviction for a crime or substance abuse. The Immigration Service may deny a visa for entry to Ontario on the basis of a conviction for a crime or for substance abuse. Applicants with a history of a conviction or substance abuse should consult with the Department of Nursing associate dean and direct questions to the Michigan Board of Nursing and the Immigration Service prior to entry in the program.

School of Nursing and Health Sciences

Entrance Requirements:

To qualify for admission to the RN 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 state- or provincial-approved associate's degree or diploma nursing programs 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, multicultural approaches to health care, health of aging populations, psychology and sociology courses. Credit may be granted for nutrition and pharmacology upon writing the required NLN tests prior to admission and achieving scores at the 50th percentile or above. NLN tests may be repeated once; students must enroll in the course if not successful on second writing. Psychomotor skills validation is also required. Students may be admitted to the University at any point, but may not be admitted to nursing core until they have fulfilled the above requirements.

Required Admission Credentials:

Submit to Admissions Office: standard LSSU Application for Admission; transcripts from previous nursing school(s) and

college(s). Submit to Department of Nursing: copy of current Michigan or Ontario professional nursing license. All credentials must be on file preceding semester of entry.

Transfer Credits:

Transfer credits may be granted on an individual basis for equivalent general education and support courses. Only those courses with a grade of C or better may be transferred. A maximum of 32 semester hours credit in basic nursing courses may be transferred. Credit for baccalaureate nursing and pharmacology courses is acceptable for five years.

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 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 Nursing Student Handbook.

The RN completion program is offered on a part-time basis at the LSSU Regional Centers in Petoskey, Escanaba and Alpena. Contact the Continuing Education Office at ext. 2802 for further information and specific course offerings.

Nursing, B.S. Completion Program for RN Students Post-Licensure Track

School of Nursing and Health Sciences

Recreation Studies:

These curricula prepare students for careers in the recreational and leisure fields in positions requiring thorough professional preparation and sound management skills. Bachelor degrees are offered in recreation management and therapeutic recreation.

Recreation Management:

A recreation management degree focuses upon opportunities for employment in commercial, resort, industrial, military, governmental and volunteer-based recreation settings. A business minor is included within this degree.

Parks and Recreation — The parks and recreation concentration within the recreation management degree emphasizes knowledge and skills related to managing natural resources as providing opportunities for outdoor recreation enthusiasts. Within this curriculum, opportunities are available to acquire an associate's degree in natural resources technology.

Therapeutic Recreation:

The therapeutic recreation degree emphasizes principles of humanistic and holistic approaches to health care, improving the physical, social, mental and emotional functioning of individuals with a variety of limiting conditions. In addition to employment in a variety of settings ranging among hospitals, homes for the aged, prisons, and governmental installations, you will be eligible to sit for the Therapeutic Recreation National Certification Examination.

Exercise Science:

The bachelor of science in exercise science focuses 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. Students are prepared for careers in these areas, through a curriculum emphasizing skill development in the critical areas of exercise testing and exercise prescription. Course work involves the study of physiology, pathophysiology, sports medicine, laboratory procedures, research methods, exercise psychology and computer applications.

Associate's Degree – Health Fitness Specialist

A health fitness specialist is eligible to become certified through the American College of Sports Medicine (ACSM) as a health fitness instructor.

Athletic Training

The athletic training degree prepares you for a career in athletic training and to sit for the National Athletic Trainers' Association (NATA) Board of Certification Exam. To become a NATA Certified Trainer (ATC), you must fulfill specific academic and clinical placement requirements.

Recreation Studies and Exercise Science

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Instructor

Mr. Christopher Kirk

Course Descriptions

Abbreviations

AC	Accounting	LA	Legal Assistant Studies
AT	Art	LS	Library
BA	Business	MA	Mathematics
BL	Biology	MB	Master Business Administration
CH	Chemistry	ME	Mechanical Engineering
CJ	Criminal Justice	MK	Marketing
CS	Computer Science	MN	Management
DP	Data Processing	MT	Manufacturing Engineering Technology
EC	Economics	MU	Music
ED	Education	NA	Native American Studies
EE	Electrical Engineering	NS	Natural Science
EG	General Engineering	NU	Nursing
EM	Engineering Mechanics	OA	Office Administration
EN	English	PH	Physics
ES	Exercise Science	PL	Philosophy
ET	Electrical Engineering Technology	PN	Practical Nursing
EV	Environmental Science	PS	Political Science
FA	Fine Arts	PY	Psychology
FN	Finance	RA	Recreational Activities
FR	French	RC	Recreation
FS	Fire Science	RS	Robotics and Control Systems
GE	Geology	SA	Student Services
GG	Geography	SD	Speech
GN	German	SO	Sociology
HE	Health Sciences	SP	Spanish
HM	Human Services	ST	Skill Trades
HP	Honors Program	SW	Social Work
HS	History	TC	Construction Technology
HU	Humanities	TE	Teacher Education
ID	Interdisciplinary	UN	University Seminar
JR	Journalism		
JS	Japanese Studies		

Each course description is preceded by the following type of heading:

CH999 Chemistry
(3-3) 5
or
CH999 Chemistry
(3-3) alternate yrs 5

The first line provides the code number (CH999) and the course name; see above 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.

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.

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. Prerequisites: AC332 and DP235.

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. Prerequisites: 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

A study of ethical, professional, and technical standards for independent audits and auditing procedures as they apply to internal controls. A study of audit program applications as they apply to elements of the financial statements. Prerequisites: AC233 and AC333.

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 (3,0) 3

This course will introduce the participant to basic drawing techniques, focusing upon the use of predominantly dry media such as graphite, charcoal, colored clays and chalks. Students will be required to work in-studio on a number of projects (still life, object drawings, texture, tone and line explorations), working toward the creation of a portfolio of drawings for final submission. Prerequisite: none. *Equivalent to FA150+ VISA 1506 for BRIDGE.*

AT111 Introduction to Painting Media and Techniques (3,0) 3

The course focuses on painting as a process of self-expression. Participants will be introduced to the use of acrylics, watercolors and water-soluble oils. An introduction to Itten's color theories and basic compositional styles will help ground participants in their exploration of the media offered. Brush handling, mixed-media techniques, and the use of in-studio still-life arrangements will be highlighted. Prerequisite: none. *Equivalent to FA155 + VISA 2556 for BRIDGE.*

AT210 Principles of Design and Color (3,0) 3

This course acquaints students with the various possibilities of working with two-dimensional design. Using graphite, marker, collage and basic printmaking/stamping techniques, participants will explore line, form, shape, texture, color and the use of negative and positive space. In addition to in-class assignments, participants will be required to research, complete and present a major piece in two-dimension at the end of the semester. Prerequisite: none. *Equivalent to FA151 + VISA 1516 for BRIDGE.*

AT211 Mixed Media Explorations (3,0) 3

Students will be invited to work hands-on in an open studio environment, examining the development of their own visual language in relation to the media and methodologies presented. Participants will be invited to draw from personal experiences as well as from their environment as catalysts for art making. All will be encouraged to work with acrylics, watercolors, water-based oils, drawing media, photographs/laser copies, found materials, etc. At the end of the course, participants will be required to present a brief seminar with essay. Prerequisites: none. *Equivalent to FA178 + VISA 2786 for BRIDGE.*

AT212 Art for Elementary Teachers (3,0) 3

This course is designed to provide an understanding of the philosophy, theories and contemporary issues of art education in kindergarten through sixth grade. Various art media will be explored by the student, and curriculum planning and evaluation will be discussed.

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: MA086 or equivalent/satisfactory score on ACT or Placement exam, 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.

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: EN111.

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.

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. Prerequisites: 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. 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 examines the relationships of the business firm to government and to society. The course focuses on the economic, legal, political, social and ethical environment of business firms. Topics include consumer protection, environmental regulation, antitrust, constitutional and administrative law, alternative dispute resolution, and other topics of current concern. The business firm is examined in the context of market capitalism and the global economy. The course is structured to meet communication-intensive requirement of general education. Prerequisites: EC202 and junior standing.

BA405 Business Ethics and Social Responsibility
(3,0) 3

Business ethics in organizations requires value-based leadership and purposeful actions that include planning and implementation of standards of appropriate conduct. This course will prepare students to be good corporate citizens through the study of business ethics, social responsibility, ethical decision making, corporate codes of ethical conduct, and how ethical behavior relates to organizational performance. Prerequisite: MN360 or MN365.

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.

BL102 Careers in Natural Resources
(1,0) 1

A seminar course to present students with strategies for successful job hunting. Presentations by natural resource professionals will give students outlooks and insights into the natural resource job market.

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. Prerequisite: Reading ACT of 19 or equivalent.

BL107 Field Biology
(2,3) 3

Introduction to organisms and their environmental interactions and conservation concerns with emphasis on Eastern UP. Lab consists primarily of field experiences. Not open to biology majors. Prerequisite: Reading proficiency (SA091 or satisfactory score on ACT or Placement Exam).

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: Reading ACT of 19 or equivalent, MA086, EN091, or equivalent/satisfactory scores on ACT or the math, reading 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. Prerequisite: 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. Prerequisite: 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

This is the first half of a two-course sequence. This course covers organization of the human body, basic principles of chemistry, the integumentary system, the skeletal and muscular systems, the nervous system and special senses. Laboratory experiences are designed to compliment the lecture topics. This course may not be used as a general education natural science elective nor does this sequence apply toward a major or minor in biological science. Prerequisites: High school chemistry and Reading ACT of 19 or equivalent.

BL122 Human Anatomy & Physiology II
(3,3) 4

The second half of the Human Anatomy and Physiology sequence emphasizes the endocrine system, cardiovascular system, lymphatics and the immune response, respiratory system, digestive system, urinary system and the reproductive system. Laboratory experiences are coordinated with the lecture discussions. Prerequisite: BL121.

BL140 Introduction to Fisheries & Wildlife
(1,0) 1

A discussion of the history, philosophy and practice of fisheries and wildlife conservation. An introduction to the role and professional responsibilities of resource managers. Prerequisite: Reading ACT of 19 or equivalent.

BL199 Freshman Seminar
(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BL299, BL399 and BL499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Freshmen will assist with ongoing projects and will be guided by faculty and seniors enrolled in BL499 to generate and interpret data from these projects. Prerequisite: MA092. Pre- or corequisite: BL109.

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. A study of mycoplasma, viruses and molds will be incorporated with genetic engineering and recombinant DNA. Labs will emphasize the identification and cultivation of molds and bacteria. Prerequisites: CH104, CH108 or CH116.

BL220 Genetics
(3,3) 4

A study of the nature, transmission, recombination and function of hereditary material in animals, plants and microorganisms. The lecture includes Mendelian, molecular and population genetics. The laboratory includes exercises in Mendelian genetics, cytogenetics, recombinant DNA, and computer simulations of population genetics. Meets ethics component of general education requirements. Prerequisites: BL110, BL111 and CH116. A statistics course is strongly recommended.

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 Soil Science
(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 or BL110 and BL111.

BL240 Natural History of the Vertebrates
(3,0) 3

A survey course covering the taxonomy, phylogeny and ecology of vertebrates with an emphasis on North American taxa. Prerequisite: BL107 or BL110.

BL243 Vertebrate Anatomy
(3,3) 4

A detailed study of the origin, phylogeny and anatomy of the vertebrates. Laboratories emphasize the thorough dissection of representatives of at least three classes of vertebrates. Prerequisite: BL110 and sophomore standing.

BL280 Biometrics
(2,2) 3

The application of inferential statistical methods to biological problems. The focus of the course is a systematic method for determining an appropriate statistical technique. Parametric and

nonparametric procedures will be covered.
Prerequisites: MA207 and MA111.

BL284 Principles of Forestry
(2,4) 4

A course introducing forest ecology, structure and function with emphasis on impacts of disturbance and outcomes of management on forest ecosystems. Students will master identification of tree and shrub species of the Eastern Upper Peninsula and become proficient with commonly used techniques to evaluate the forest resource. The lab portion of the course is in the field and proper dress is required. In addition, one all-day field trip will be scheduled. Prerequisite: EV125/126.

BL286 Principles of Watersheds
(3,0) 3

Overview of the geomorphology, hydrology and biota of various watersheds, with emphasis on hydrographic methods, sampling techniques, land use and management principles. Prerequisites: MA111 and BL140.

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 department and college dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no / grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Natural Science.

BL299 Sophomore Seminar
(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BL199, BL399 and BL499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Sophomores will assist with ongoing projects and will be guided by faculty and juniors enrolled in BL399 to conduct a comprehensive, annotated literature search in their area of interest. Prerequisite: BL199 and EN111.

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.

BL303 General Entomology
(2,3) 3

An introduction to the biology, ecology and systematics of the insects. This course covers fundamentals of insect taxonomy and classification; insect anatomy and physiology; and the varied roles insects play in the natural world and in human history and culture. Prerequisites: BL110, BL111 and MA111.

BL310 Ichthyology
(2,3) 3

Study of the anatomy, physiology, behavior, taxonomy and natural history of fishes, with emphasis on freshwater species. Prerequisites: BL110 and BL240.

BL311 Mammalogy
(2,3) 3

An investigation of the natural history, biology and taxonomy of mammals. Techniques for measuring and monitoring mammalian populations will be presented. The laboratory will focus on field techniques and the identification by skin, skull and track of mammals of the Great Lakes region. Prerequisites: BL110 and BL240.

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 BL240.

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 CH116, both with grade of C or better.

BL330 Animal Physiology
(3,3) 4

The course examines the many ways animal groups solve the problem of maintaining internal homeostasis. Neural control, endocrine systems, gas exchange, energy acquisition and temperature regulation are a few of the topics examined. The lab is closely tied to the lecture material using non-invasive live animal experiments, computer-interfaced data gathering and analysis. Prerequisites: BL110 with a C (2.00) or better and CH116 with a C (2.00) or better.

BL332 Embryology
(2,2) Alternate Years 3

A study of pattern formation and morphogenic processes in animals, with an emphasis on vertebrates. The laboratory portion of the course emphasizes descriptive ontogeny of representative vertebrates. Prerequisites: BL110, sophomore standing. (BL243 is highly recommended.)

BL333 Fish Ecology
(3,0) 3

A study of the relationship of fishes to their physical, chemical and biological environments in natural and perturbed aquatic ecosystems with an emphasis on response and adaptation at the organism, population and community levels. Various types of aquatic ecosystems will be examined with respect to habitat accommodations of fish and the impact of human activities. Includes ecological principles as applied to important sport, commercial and forage fish species. Prerequisite: BL310.

BL337 General Ecology
(2,3) 3

A survey of concepts of plant and animal autecology, population ecology and community ecology. Prerequisites: BL110, BL111 and MA111.

BL339 Wildlife Ecology
(3,0) 3

A theoretical analysis of the distribution, structure and dynamics of animal populations.

The influence of biotic and abiotic limiting factors on wildlife populations. Community interactions including competition, predation, and herbivory are explored in detail. Prerequisites: BL240, BL280 and BL337.

BL345 Limnology
(2,3) 3

An investigation of the principles of freshwater ecosystems with an emphasis on lakes. The physics and chemistry of natural systems are presented, as well as a survey of the dominant biota and their ecological interactions. Prerequisites: BL110 and CH116.

BL372 Freshwater Fish Culture
(2,3) 3

Instruction in water quality monitoring, production systems, feeding and nutrition, disease identification and management, and reproduction principles of freshwater fishes used for recreational and commercial fisheries management, bait and food products. Students will learn propagation and rearing techniques for important fishes, particularly those with recreational or commercial value. Prerequisites: BL280 and BL310.

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.

BL399 Junior Seminar
(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BL199, BL299 and BL499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Juniors will serve as mentors to sophomores in the group and will develop and present a proposal for a scholarly project. Prerequisites: BL280, BL299 and SD101.

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. Prerequisite: BL401.

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.

BL408 Vascular Plant Systematics
(3,0) 3

A course covering the principles of plant systematics including the history of taxonomy, systems and approaches to classification, rules of nomenclature, and techniques used in modern biosystematics. Prerequisites: BL202, BL220 and BL337.

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.

BL421 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: BL220 and CH451.

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 the basic elements of the immune response system and the various ways in which the immune system can fail, leading to immunopathological reactions. Labs will include current diagnostic methodologies. Prerequisites: BL110, BL204 and CH226.

BL430 Endocrinology
(2,0) 2

A study of the major vertebrate endocrine systems with the greatest emphasis placed on mammals. Prerequisite: a course in physiology.

BL432 Fisheries Management
(2,3) 3

A course covering the history, theory and practice of fisheries management with an emphasis on basic strategies used in effective management of fish populations in freshwater ecosystems. Students will learn methods of collection and synthesis of data regarding fish population dynamics and manipulation, habitat modification, and human management to achieve specific fisheries management goals and objectives. Prerequisites: BL280 and BL333.

BL433 Histology
(2,2) Alternate Years 3

A systems approach is used to study the microscopic anatomy of mammalian tissues and organs. Related physiological processes are integrated with the anatomical studies. Prerequisites: BL110 and junior standing.

BL437 Plant Ecology
(2,3) 3

A study of the autecology, population ecology and community ecology of plants, including fundamental theory, field methods and data analysis. Prerequisites: BL202, BL337 and MA207.

BL439 Wildlife Management
(2,3) 3

The application of ecological principles to develop practical wildlife management strategies to preserve, enhance or create viable wildlife habitats and populations. Students will have the opportunity to observe and practice standard field and laboratory techniques. Prerequisites: BL311, BL312 and BL339.

BL450 Laboratory Apprenticeship
(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 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 certified 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.

BL475 Aquatic Entomology
(2,3) 3

Survey and identification of regional lake and stream insects, with additional emphasis on life-history strategies and community ecology. Insect physiology, ecology, behavior, importance as fish food organisms, and utility as indicators of water quality is also presented. Prerequisites: BL330 and BL337.

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 and CH226.

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 department and college dean. Prerequisites: Students must have junior or senior standing, have an overall GPA of at least 2.5, and no / grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Natural Science.

BL495 Senior Project
(0,3-9) 1-3

A variable-credit practicum. Students, under the guidance of a faculty mentor, conduct a scholarly project based on the proposal submitted by the student in BL399 (or an appropriate substitute). Credit for the course is based on the scope of the proposed project. May be repeated once for a maximum of six credits. Prerequisite: BL399.

BL499 Senior Seminar
(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BL199, BL299 and BL399. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Seniors will serve as mentors to freshmen in the group. Seniors will also produce a manuscript describing the results of their project and will be required to give poster and oral presentations to the University community. Prerequisite BL399. Pre- or corequisite: BL495.

CHEMISTRY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

CH091 Basic Chemistry
(2,0) 2

Thorough exposure to elementary chemistry designed to prepare students for college-level chemistry. Emphasis on drill to enhance problem-solving skills. Prerequisite: MA084 or equivalent. 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. Prerequisites: Reading ACT of 19 or equivalent and pre- or corequisite of MA092.

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 or equivalent, with a grade of C (2.00) or better.

CH108 Applied Chemistry
(3,0) 3

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. Prerequisites: Reading ACT of 19 or equivalent and pre- or corequisite of MA092.

CH109 Applied Chemistry Lab
(0,3) 1

Laboratory experience for CH108 Applied Chemistry (must complete both lecture and laboratory to qualify for general education credit). Corequisite: CH108.

CH115 General Chemistry I
(4,3) 5

Fundamental principles of chemistry with emphasis on atomic structure, molecular structure and stoichiometry. Pre- or corequisite of MA111 or higher with a grade of C (2.0) or better. Reading ACT of 19 or equivalent. One year of high school chemistry is strongly recommended.

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.

CH220 Survey of Organic Chemistry
(3,3) 4

A brief course in organic chemistry covering the nomenclature, structure, reactions and preparations of the important classes of organic compounds. It will also provide students with an introduction to spectrometric analysis of organic compounds and the chemistry of bio-organic compounds. The laboratory includes experiments in the isolation and preparation of typical organic compounds using microscale apparatus. Not open to students in chemistry or environmental chemistry degree programs. Prerequisite: CH116.

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 with a grade of C (2.00) or better.

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
(3,3) 4

Evaluation of analytical data and study of gravimetric and titrimetric methods of analysis. Prerequisites: CH116 with a grade of C (2.0) or better and MA151, MA143 or MA112.

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.

CH332 Instrumental Analysis
(3,3) 4

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.

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. Prerequisites: CH220 or CH225 and CH226, CH231, and NS103. Also listed as EV341.

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: CH220 or CH225 and CH226, CH231 and NS103.

CH361 Physical Chemistry I
(4,0) 4

Chemical thermodynamics with applications to both phase and chemical equilibria. Prerequisites: 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 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 CH electives. This is a credit/no credit course.

CH451 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.

CH452 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: CH451.

CH453 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. Prerequisite: CH451.

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.

CJ197 Physical Fitness for Public Safety**(0,3) 1**

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Law enforcement students (MCOLES) take course both semesters of their senior year.

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.

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.

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. Prerequisites: CJ101 and 102.

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.

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 and 102.

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.

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.

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 MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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 S0214.

CJ401 Senior Seminar**(3,0) 3**

Seminar and independent study course with individual student guidance by faculty on selected research topics in criminal justice. Prerequisite: Senior standing.

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 and permission of instructor.

CJ406 Advanced Canadian Jurisprudence**(3,0) 3**

Expands upon the material covered in CJ202, Canadian criminal law, including trial tactics and procedures, sentencing, jurors, invasion of privacy and other current topics. Prerequisite: CJ202.

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.

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.

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.

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.

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. May be repeated up to six credits. Prerequisite: 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 systems concepts, word processing, spreadsheets, database management systems, and the Internet and World Wide Web. Brief survey of other applications, such as presentation graphics, multimedia usage and desktop publishing. Does not apply toward credit in computer science major or minor.

CS103 Survey of Computer Science
(2,2) 3

An introduction to the field of computer science for computer science majors. Microcomputer applications, history of computing, computer networks and the Internet, programming, hardware, theory of computation, artificial intelligence.

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 or equivalent/satisfactory score on ACT or Placement Exam.

CS106 Advanced Web Page Design and Web Site Administration
(2,2) 3

Web page creation using HTML, web authoring tools, and scripting languages; Java programming; graphics and page layout; web server software installation and maintenance. Prerequisites: CS101 and CS105 with grade of C or better.

CS121 Principles of Programming
(3,0) 3

A broad-based introduction to computer programming, 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 will be drawn from across the discipline of computer science. Prerequisite: CS105 with minimum grade of C.

CS201 Data Structures and Algorithms
(3,0) 3

An introductory course in data structures and algorithms, with an emphasis on abstraction, implementation and analysis. Primary 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.

CS202 Operating Systems Management
(2,2) 3

Installation and configuration of operating systems; Microsoft operating systems and Linux; advanced script writing and X-Windows; system maintenance, such as security, auditing, backups and restores. Prerequisite: CS103 with a grade of C or better.

CS203 System Integration and Maintenance
(2,2) 3

PC system configuration and troubleshooting skills. Hard drives, monitors, sound cards, CD-ROM drives and other peripherals. Issues involved in integrating and configuring hardware and software system components. Prerequisite: DP163 with grade of C or better.

CS205 Computer Organization and Architecture
(3,0) 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.

CS211 Database Applications
(3,0) 3

An introductory course in database design and implementation, using microcomputer-based relational database software. Single and multiple databases, forms and reports, query processing, data import and export, and

database-related programming. Prerequisite: CS105 with a grade of C or better.

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: CS103 and CS105 with a minimum grade of C.

CS223 Advanced Networking
(2,2) 3

Continuation of the CCNA, CISCO Certified Networking Associate curriculum. Principles of Wide Area Networks, IQs, routers, routing protocols and configuration; hands-on training with CISCO routers. Prerequisite: CS221 with a grade of C or better.

CS271 Network Hardware and Software
(2,2) 3

An introduction to network management strategies, network security systems, and network installation and maintenance. Topics on linking users to the internet and email are also included. Prerequisites: CS101 and CS105 with a grade of C or better.

CS281 Network Design and Implementation
(2,2) 3

An introduction to network design and implementation, network databases, and route and bridge applications over LAN configurations with emphasis in managing multiple networks, remote servers, and client-server operations. Topics in customizing LAN workstations, in how to monitor network activity, and in performing systems upgrades are included. Prerequisite: CS271 with a grade of C or better.

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.

CS303 Network Operating Systems I
(2,2) 3

Installation, configuration and troubleshooting of network operating systems server software; hardware devices and drivers; system performance, reliability and availability; storage use and security. Prerequisite: CS202 with a grade of C or better.

CS305 Networking Operating Systems II
(2,2) 3

Installation, configuration and troubleshooting of network operating systems client software; managing file systems and storage; network protocols, remote access, printing and disaster recovery. Prerequisite: CS303 with a grade of C or better.

CS308 Network Security
(2,2) 3

Networking and security overview; identifying network threats and operating system vulnerabilities; security tools, such as firewalls, secure connections, authentication and passwords; planning networks and implementation strategies. Prerequisite: CS223 with a grade of C or better.

CS312 File and Database Management
(3,0) 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 with a minimum grade of C.

CS319 Java Programming
(3,0) alternate years 3

Java applications and applets; control structures, methods, arrays and object-oriented programming; graphics, files, networking and data structures. Prerequisite: CS121 with a grade of C or better.

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. Prerequisites: CS201, and either MA143 or MA251, all with a minimum grade of C.

CS333 Systems Programming
(3,0) 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 with a minimum grade of C.

CS334 Operating Systems Concepts
(3,0) 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 with a minimum grade of C.

CS412 Unix Network Administration
(2,2) alternate years 3

Network administration how to and issues for Linux. Installation of a Linux networked system, maintenance and upgrade of a Linux installation, security issues, common scripting languages, system admin tasks, NFS, and mail systems; other UNIXes. Prerequisites: CS221 and CS281, both with a grade of C or better.

CS418 Software Engineering
(1,4) 3

This course is an introduction to the design and implementation of computer software. This course includes topics on software specifications, design methodologies, design implementation, acceptance criteria, testing procedures and project management. This course also includes topics on the planning, organizing and controlling of software projects. This course is part one of a two-part sequence — CS418/CS419. Students registered in CS418 must take CS419 as a sequence course. Prerequisite: CS312.

CS419 Senior Projects
(1,4) 3

A continuation of CS418. This course provides students with the skills necessary for completion of their project design from CS418. In this course, the student will implement the design of a software system created in Software Engineering (CS418). The projects will vary each year to allow students to implement their knowledge to create a real-world software system. In addition, the student will analyze numerous ethical considerations associated with being a computer professional. This course is the second part of the two-semester course sequence CS418/CS419. Prerequisite: CS418.

CS428 Computer Science Cooperative Education I
(3,0) 3

A practicum in which students work in a supervised capacity (one-site) with industry. The student will spend a semester in a co-op position in some field of computer science (networks, application development, database administration, etc.). The student will develop a co-op project proposal that must be submitted to and approved by the computer science faculty. The co-op experience must be of a significant nature such that it serves as capstone computer science experience for the student. This is the first of a two-course sequence. Prerequisites: CS290 and permission of the computer science faculty.

CS429 Computer Science Cooperative Education II
(3,0) 3

A continuation of CS428 where students work in a supervised capacity in industry in a field of computer science. This is the second of a two-course sequence. The focus of this course is to finish the cooperative experience in industry and prepare a final report on the two-semester experience. The student will write a final report on the co-op experience and defend that report to the computer science faculty in open forum. Prerequisite: CS428.

CS438 Computer Science Research Project I
(3,0) 3

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students develop a research plan for some portion of the project and implement that plan. In particular, the student will work to develop a proposal of the expected research goals and create a project timeline and budget. The student's faculty advisor and the computer science faculty must approve the plan. This is the first of a two-course sequence.

Prerequisite: Senior status and permission of the computer science faculty.

CS439 Computer Science Research Project II
(3,0) 3

This is a continuation of CS438 Computer Research Project I. Prerequisite: CS438.

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.

DATA PROCESSING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

DP121 Computer Applications for Business
(3,0) 3

In this course, students will be exposed to modules of computer software which will include basic word processing, database, spreadsheet and graphic presentation instruction applicable to business scenarios. This course is the introductory course to advanced computer skills courses which students may take to gain Microsoft certification.

DP160 Personal 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
(3,0) 3

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.

DP231 Database
(3,0) 3

In this course, students will cover advanced database applications in business including

creating database tables, forms, reports, mailing labels and charts; creating relationships between database tables; using database wizards; and performing queries and filtering records. A student may repeat this course covering a different database management system for a maximum of six credit hours. Prerequisite: DP121 or permission of instructor.

DP235 Spreadsheets

(3,0) 3

In this course, students will cover advanced spreadsheet applications in business including writing and working with formulas; creating templates; finding and organizing information by filtering, sorting and subtotaling; working with multiple worksheets; creating charts; working with data tables and scenario management; and importing data into spreadsheet software. A student may repeat this course covering a different spreadsheet software program for a maximum of six credit hour. Prerequisite: DP121 or permission of instructor.

DP250 Desktop Publishing & Presentation Design

(3,0) 3

Introduction to document design and layout, use of font, color and graphics to produce newsletters, brochures and presentations. Concepts included are presentation preparation and delivery. Graphics software will be used. Prerequisites: EN111 and a working knowledge of word processing.

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.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

EC208 Honors Principles of Microeconomics

(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 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 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 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.

EC407 Introductory Econometrics

(3,0) 3

This course provides an introduction to the theory and use of regression analysis to solve problems in economics. The classical regression model is developed and extended to multiple regression. Topics include data problems, model specification, multicollinearity, goodness of fit, qualitative independent variables, heteroscedasticity, serial correlation, qualitative and limited dependent variables, and forecasting. Prerequisites: BA211 or MA207, EC201, EC202, MA112 or MA143 or MA151.

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. Prerequisites: 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 and ED110 and permission of instructor. 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: ED101 and ED110 and permission of instructor. Credit/no credit grade.

ED270 Administration of Early Childhood Programs (3,0) 3

Knowledge of financial, legal, supervisory and administrative procedures used in operating an early childhood program will be gained through lectures, discussions, readings and activities. Prerequisite: ED260 or ED261.

ED340 Practicum III — Field Experiences (1,12) 4

Students will gain hands-on experience and observational skills in a K-3 classroom. Students will attend individualized seminars, and complete 100 contact hours in the classroom with additional course requirements. Prerequisites: Permission of instructor and completion of ED260 and ED261.

ED420 Emergent Literacy (3,0) 3

A methods class which facilitates understanding of the reading, writing, oral and listening development of the child from preschool to early elementary. Prerequisite: ED220 or EN335.

ED430 Directed Studies in Early Childhood Education (4,0) 4

Individual research study of a relevant topic of current trends and issues in early childhood. Topic will be defined jointly by student and instructor. Prerequisite: junior status.

ED450 Internship in Teaching: Infant-Toddler/Preprimary Education (CR/No CR grade) 4

Directed and evaluated internship in an approved infant-toddler or preprimary classroom setting. Students must plan for a full-time (as deter-

mined by the program) student teaching experience for a total of 180 contact hours. Open only to elementary education students who are completing the early childhood endorsement (ZA) as required by the State of Michigan Department of Education. Prerequisites: completion of ED260 and/or ED261, and entrance into the Teacher Education Program. The student must meet all the requirements as determined by the internship site. Instructor's permission is required and placement will be made with the instructor's approval.

ELECTRICAL ENGINEERING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

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: EG101.

EE125 Digital Fundamentals (3,2) 4

A study of numbering systems and binary codes, combinational and sequential digital logic (with an emphasis on contemporary programmable logic concepts), and microcomputer memory devices systems. Prerequisites: MA140 and one of the following: CS101, CS103 or EG101.

EE210 Circuit Analysis (3,2) 4

A study of simple electrical components, 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. Circuit design techniques are introduced and further study in transient circuits and three-phase power systems will be provided. Prerequisite: MA143 and one of the following: CS101, CS103 or EG101.

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 analysis work is performed using vectors, phasors and linear algebra. Networks will include series, parallel, series-parallel, RLC and transformer systems.

Laboratory work will concentrate on verification of the theory through circuit fabrication and computer simulations. Prerequisites: MA243 and EE210. Corequisite: EG340 and MA310.

EE315 Network Analysis II (3,0) 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, EG340 and MA310.

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, EG140 and MA144.

EE345 Fundamentals of Engineering Electromagnetics (3,0) 3

This course provides an in-depth knowledge of the fundamentals of electromagnetic theory. Topics include vector analysis, electrostatic fields and magnetostatic fields, while familiarizing students with the applications of such fields, Maxwell's equations, and an introduction to the concept of wave propagation and radiation. Prerequisite: PH232. Corequisite: EE315.

EE355 Microcontroller Systems (3,3) 4

A study of microcontroller systems design based on the 8/16/32-bit microcontrollers. Assembly and C languages are used for program development in the design of embedded systems. Interfacing techniques, real-time control, and microcontroller emulator use are emphasized. Prerequisites: EE250 and one of the following: EG265 or CS121.

EE370 Electronic Devices (3,3) 4

A study of the operation and characteristics of electronic devices including diodes and transistors and thyristors. Emphasis will be placed on the analysis and design of circuits using these devices, including power supplies, switching circuits, and the digital logic families. The operational amplifier will also be introduced as a "device". Prerequisites: EE210 and MA243. Corequisite: EE310.

EE375 Electronic Circuits (3,3) 4

A study of the analog application of electronic devices including transistors and operational amplifiers. Emphasis will be placed on the analysis and design of circuits using these devices, including bias circuits, frequency response, multi-stage amplifiers, and operational amplifier circuits. Prerequisite: EE370. Corequisite: EE315.

EE420 Digital Design (3,3) 4

A study of logical and electronic circuit design techniques including combinational and sequential circuits, programmable logic devices, MSA and LSI devices. Synchronous state machine design using computer-based tools is

emphasized for control applications. Prerequisites: EE125 and either EG265 or CS121.

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: EG265, EG340, RS460 and one of the following: EE125 or EE305.

EE441 Applied Engineering Electromagnetics (3,2) 4

This course is a technical elective course for electrical engineering students. Topics include propagation of plane waves, transmission lines, brief coverage of the concept of wave-guides and cavity resonators, an overview of fiber optics, and the concept of antennas and radiation with an emphasis on the design of practical applications of the theoretical materials covered in the course. Prerequisite: EE345.

EE470 Applications of Analog Integrated Circuits (3,3) 4

This course emphasizes the design of electronic circuits using analog integrated circuits. Circuit designs include applications of operational amplifier circuits, instrumentation and isolation amplifiers, active filters, signal generators, voltage references and regulators, A-D/D-A converters and non-linear circuits. Typical circuit considerations include static and dynamic device limitations, noise and stability. Prerequisites: EE375.

GENERAL ENGINEERING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EG101 Introduction to Engineering (1,2) 2

An introduction to the different areas of study within the fields of electrical and mechanical engineering. Lecture topics and laboratory activities will introduce computer programming, computer simulation exercises, data-acquisition systems, microcontroller systems, communications, robotic and manufacturing applications, material science and dynamics. Prerequisite or corequisite: MA092.

EG140 Numerical Applications for Engineers (0,2) 1

This is an introductory course covering numerical methods in engineering. The student will be taught the application of numerical software to model and solve engineering problems. Linear algebra and its engineering applications will also be introduced. Can be repeated for credit. Corequisite: MA144.

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. Prerequisite: Permission of instructor.

EG260 Engineering Research Methods (1,3) 2

This is an introductory course covering research methods in engineering and engineering-related fields. The student will be involved in faculty-supervised and guided research activities such as assisting with developing experiments, gathering data and analyzing results. Much time will be spent learning about the research project, past experiments and future directions. Can be repeated for credit. Prerequisite: permission of instructor.

EG265 "C" Programming (3,0) 3

An introductory course in "C" programming with an emphasis on structured programming techniques and on utilizing "C" to solve engineering-related problems. Topics include looping techniques, input and output to files, conditional flow of control, writing and utilizing functions, pointers, 1D and 2D arrays, and data storage. Prerequisites: MA140 and sophomore standing.

EG310 Advanced Quality Engineering (4,0) 4

Provides an in-depth study of the use of quality and quality testing in industrial settings. Topics include probability, variance testing and control, statistical process control methods, distributional sampling, experimental design and analysis. Extensive work will be done with the computer. Prerequisites: MA207/208 or MT265. Familiarity with general computer usage is required with experience in Excel spreadsheets especially recommended.

EG340 Advanced Numerical Applications for Engineers (0,2) 1

This is the second course offering numerical methods in engineering. The student will be introduced to applications of differential equations used to model and solve engineering problems. Topics in Fourier analysis and discrete mathematics and their engineering applications will also be introduced. Can be repeated for credit. Corequisite: MA310 or MA343. Prerequisite: EG140 and EG265.

EG345 Probability and Statistics for Engineers (3,0) 3

This course provides a calculus-based introduction to the basic theory of probability and statistics. Topics include counting techniques, probability distributions and densities, random variables, mathematical expectations, conditional probability, correlation, central limit theorem, sampling theory and interval estimation. Prerequisite: MA243 or MA251.

EG346 Probability and Statistics Laboratory for Engineers (0,2) 1

This laboratory accompanies EG345, a calculus-based introduction to the basic theory of probability and statistics. Topics include methods of data collection, experimental design, interpretation of data and use of a statistical software tool. Corequisite: MA207.

EG450 Cooperative Education Project I (2,0) 2

A course in which students work in a supervised engineering capacity (on site) with industry. This is the first of a two-course sequence that can replace the senior year Engineering Design Project II (EG495). The focus of this course is the development of the co-op project proposal and the initiation work on the co-op project. Prerequisite: EG250 Cooperative Education. Course may not be repeated for credit. Permission of instructor is required.

EG451 Cooperative Education Project II (2,0) 2

A continuation of EG450 where students work in a supervised engineering capacity (on site) with industry on a technical project. This is the second of a two-course sequence that can be used as credit for EG495, Engineering Design Project II. The focus of the course is the completion and final report of the cooperative education project. Course may be repeated once for credit. Prerequisite: EG450 Cooperative Education Project. Permission of instructor is required.

EG460 Engineering Research Project I (2,6) 4

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students will acquire the skills listed under EG491 and develop a research plan for some portion of a project. The plan will be implemented in EG461. Specifically, the students will work to develop a proposal of the expected research goals and create a project timeline and budget. The student's faculty advisor and the director of the Lab for Undergraduate Research in Engineering (LURE) must approve the plan. Prerequisites: senior status, EG260 and permission of instructor.

EG461 Engineering Research Project II (1,3) 2

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students implement their research plan developed in EG460 and lead research efforts. Results and finding must be reported in oral and/or written forms to appropriate constituencies outside the LSSU audience. Prerequisites: EG460 and permission of instructor.

EG490 Research Topics in Engineering (1-4,0) 1-4

Special studies and/or research in engineering for individuals for 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.

EG491 Engineering Design Project I (2,3) 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. Prerequisites: senior status and expected graduation within the academic year and one of the following: CH231 or EE370 or ME350 or (RS365 and MT315).

EG495 Engineering Design Project II (1,6) 3

A continuation of EG491. 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: EG491.

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

A study of theory and application of principles of statics with emphasis on problem solving, free body diagrams and vector analysis. Principle of equilibrium applied to particles and rigid bodies. Prerequisite: MA143. Corequisite or prerequisite: PH231.

EM320 Dynamics (3,2) 4

A study of 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 and impulse and momentum are covered. Laboratory includes experiments demonstrating laws of dynamics and has special emphasis on creative problem-solving techniques and technical report writing. Prerequisites: MA144 and EM220.

ENGLISH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EN091 Preparation for College Writing (3,0) 3

EN091 is designed to give students who have limited experience with writing an opportunity to increase their confidence as writers, and to improve their command of the written language. The course is appropriate for students who find writing to be difficult or confusing. Students write weekly, with much of the instruction taking place as students learn to revise and edit their own work. Students completing the course will

be able to write successful essays that represent complex approaches to different topics. A grade of C or higher is required to pass the course. 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.

EN105 Technical Writing for Skilled Trades (3,0) 3

This course is a technical communications course designed for individuals in the skilled trade. The course content will vary based on the needs of the specific skilled trade. The content will include the fundamentals of writing appropriate types of memos, proposal, manuals, reports and other forms of technical communication associated with the specific trade. This course is not intended as meeting general education credit in the bachelor of science, bachelor of arts, or other associate's degree programs at LSSU. Prerequisite: admission into the skilled trade program and CS101 or equivalent.

EN110 First-Year Composition I (3,0) 3

EN110 provides students with an introduction to the discipline of writing through an exploration of their own writing processes and products. Emphasis is placed on students learning to think critically about their own writing in order to address issues of coherence, grammar, mechanics, organization, clarity and content. Other material covered includes the role of literacy in society, the ways in which readers engage text, and the role of writing at the college level. Prerequisites: English ACT score of 18, and Reading ACT score of 19 (or equivalent) or a C or higher in EN091 and SA091.

EN111 First-Year Composition II (3,0) 3

First-Year Composition II prepares students for the complex demands of academic literacy and research. These require students to be able to critically observe personal and public knowledge; ask questions of reading and research; formulate hypotheses; design and conduct research projects, both in the library and in the field; and identify further avenues of inquiry. To help students develop these abilities, the course also teaches students the basic skills of analysis, interpretation, critical thinking and documentation. Required course work includes completion of an extended research project. Prerequisite: a grade of C or higher in EN110.

EN180 Introduction to Literary Studies (3,0) 3

This course introduces students to the theory and methodology of literary study, focusing on three questions: What is a literary text? How do we read a literary text? How do we write about a literary text? Addressing these questions requires students to examine the social and cultural contexts of literature and its aesthetic, rhetorical and ideological aspects. These considerations will help students judge literary value and examine their own literary assumptions. Requires one research project and critical essays using MLA style. Prerequisite: EN111.

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: EN111.

EN222 English Grammar (3,0) 3

Introduction to the basic Standard English grammar, its vocabulary and its principles as these rules apply to the structure of the sentence and the production of the meaning.

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. Pre- or corequisite: EN111.

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. Pre- or corequisite: EN111.

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. Pre- or corequisite: EN111.

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. Pre- or corequisite: EN111.

EN235 Survey of Native Literature of North America (3,0) 3

Students will examine various types of Native American literatures, including traditional stories, non-fiction, fiction and poetry from authors of numerous different nations. A variety of themes, including Native American identity and the role of culture in literature, will be covered. Corequisite: EN111 (also listed as NA235).

EN236 Literature and Culture (3,0) 3

Students will examine English-language texts from a variety of cultures, including American minorities and other underrepresented cultures. Students will observe the way in which culture is presented in the texts and how culture can help to shape the texts. Corequisite EN111.

EN306 Technical Writing (3,0) 3

Technical writing is designed to introduce students to the theory and practice of technical communication. This course incorporates a broad approach, addressing the issues of critical thinking, collaboration, ethics, and the persuasive presentation of technical information in both written documents and oral presenta-

tions. The specific documents that will be covered include memos, formal business letters, technical descriptions, short and analytic reports, proposals and formal oral presentations. The central focus of the course will be the completion of a discipline-specific final project, in which the technical communication skills learned during the course will be enhanced. A major goal of this project, and the class, is to introduce students to the demands of their chosen professions, and thereby prepare them for the kinds of disciplined intellectual and practical work they will be required to complete. Prerequisite: EN111.

EN310 Advanced Writing (3,0) 3

An exploration of the theory and practice of writing as it relates to the production of text, EN310 places emphasis on developing a conscious approach to writing. The course is designed to assist students in gaining control over the choices that create a coherent, precise, cohesive and professional text. This course may be taught on a tutorial basis. Prerequisites: a grade of C or higher in EN111 and junior standing.

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) Spring, even years 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.

EN335 Children's Literature in the Classroom

(3,0) 3

This course focuses on understanding the genres of children's literature for ages birth through adolescence and applying this knowledge, using various teaching strategies, to create a literature-based classroom for grades kindergarten through middle school. Required for elementary teacher non-English majors and an elective for elementary teacher English majors. Co-/prerequisites: EN111 and SD101.

EN340 Genre Studies

(3,0) 3

This course focuses on an understanding of the formal characteristics, critical interpretation, and the history and development of a single literary

genre, including but not limited to the novel, the short story, drama or poetry. Pre-/corequisites: EN231/2 or EN233/4. Variable topics: may be repeated twice for credit.

EN401 Medieval Literature

(3,0) 3

This course focuses on an understanding of the formal characteristics, critical interpretation, and the history and development of Medieval English literature between the Anglo-Saxon period and the 15th century. Prerequisite: EN233.

EN402 Renaissance Literature

(3,0) 3

This course focuses on an understanding of the formal characteristics, critical interpretation, and the history and development of Renaissance English literature between the 16th and 17th centuries. Prerequisite: EN233.

EN403 Restoration Literature

(3,0) 3

This course focuses on an understanding of the formal characteristics, critical interpretation, and the history and development of English literature and early American literature between the late 17th and 18th centuries. Prerequisites: EN231 and EN233.

EN405 Romantic Literature

(3,0) 3

This course focuses on an understanding of the formal characteristics, critical interpretation, and the history and development of English and American literature in the period between 1780 and 1860. Prerequisites: EN231 and EN234.

EN406 19th Century Literature

(3,0) 3

This course focuses on an understanding of the formal characteristics, critical interpretation, and the history and development of English and American literature in the period between 1860 and 1900. Prerequisites: EN232 and EN234.

EN407 20th Century Literature

(3,0) 3

This course focuses on an understanding of the formal characteristics, critical interpretation, and the history and development of English and American literature in the 20th century. Prerequisites: EN232 and EN234.

EN410 The Children's Literary Tradition

(3,0) 3

Surveys the history of children's literature and its relationship to the development of cultural and societal conceptions of childhood. Emphasis is on critical reading and in-depth analysis of the various forms of this literary tradition. Prerequisite: EN231-232 or EN233-234, 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. Prerequisites: EN222, 233, 234.

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.

EN433 Topics in Literature and Composition

(3,0) 3

Study of various specialized topics in literature and composition not offered as part of the core classes. Topics may include studies of specific authors, theorists, and movements in literature and composition. Prerequisite: junior/senior standing. May be taken twice for credit (total of six credits).

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. Prerequisite: Permission of instructor.

EN490 Senior Thesis

(3,0) 3

Senior thesis is a sustained exploration of a literary, composition or language topic. Students will undertake an independent research project and develop it into a major paper. Prerequisites: English major and senior standing.

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.

ES230 Athletic Injury and Illness Prevention

(3,0) 3

This is an introductory class to the field of athletic training. It will provide an overview for the student as to what an athletic trainer does. Topics to be included will be a history of athletic training, developing conditioning programs, nutrition, protective equipment in sports, the healing process, emergency plans, injury assessment, psychology of injury, environmental conditions and the use of drugs in sports. Prerequisites: BL121 and ES141.

ES232 Athletic Injury and Illness Recognition and Evaluation**(3,0) 3**

This class will be a continuation of ES230. After a general knowledge base is established in ES230, ES232 will elaborate on those concepts and extend them to the various extremities of the body as well as the spine and head. Prerequisites: ES230 and BL122.

ES234 Preventative Taping Techniques**(0,2) 1**

To present current and comprehensive taping and wrapping techniques used in athletic training. Prerequisite: ES232.

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 and 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.

ES275 Nutrition for Sport and Exercise Performance**(2,0) 2**

Extends the basic principles of nutrition presented in ES262 and explicitly details the role of the major nutrients in their application to wellness and fitness settings, as well as athletic performance. Specifically addresses the interaction of diet and exercise in modifying the condition of the individuals with metabolic dysfunction (diabetes, obesity) or compromised cardiovascular health (hypertension, coronary heart disease). Also examines the special nutritional needs of athletes and the effectiveness of ergogenic aids in enhancing sport performance. Prerequisite: BL121 and ES262.

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. Prerequisite: Permission of instructor.

ES301 Athletic Training Clinical Experience I**(0,4) 2**

This course requires athletic training students to acquire, practice and demonstrate competency in basic clinical skills necessary to provide healthcare to a physically active population in a variety of clinical settings. Prerequisites: junior status and admission to the Athletic Training Education Program.

ES302 Athletic Training Clinical Experience II**(0,4) 2**

In this course, athletic training students are required to continue acquiring, practicing and demonstrating competency of the basic clinical skills necessary to provide healthcare to a physically active population in a variety of clinical settings. Prerequisites: ES301 with a grade of C or better.

ES340 Therapeutic Modalities in Athletic Training**(2,2) 3**

This course will introduce the student to the theory and application of physical medicine devices commonly used in athletic training and sports medicine settings. Specific attention will be placed on the use of cryotherapy, thermotherapy, electrotherapy, ultrasound, traction, intermittent compression, and therapeutic massage in caring for physical injuries and illness. This course will focus on determining the most effective therapeutic modality for a given situation and the correct application of the selected therapeutic modality. This course is designed to present the knowledge, skills and values an entry-level certified athletic trainer must possess to plan, implement, document and assess the efficacy of therapeutic modalities in the care of physical injuries and illnesses. Prerequisites: ES232 and BL122.

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. Prerequisite: ES141.

ES346 Therapeutic Exercise in Athletic Training**(2,2) 3**

ES346 will introduce the student to the theory and application of commonly used rehabilitative exercises in the field of athletic training. Students will be introduced to the "10 Goals of Rehabilitation," and will then study the relationship that therapeutic exercise plays in the attainment of each goal. Students will then develop a comprehensive rehabilitation plan that will enable a physically active person to return to activity as safely as possible. Students will be exposed to current surgical techniques and the rehabilitation that is involved. Prerequisite: ES262.

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, anthropometer, and administering exercise protocols for diseased populations. Prerequisites: 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. Prerequisites: ES230 and ES232.

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 ES262.

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. Prerequisites: 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. Prerequisite: Basic skills and knowledge of activity and instructor permission. May be repeated for a total of three credits.

ES401 Athletic Training Clinical Experience III**(0,4) 2**

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, and therapeutic rehabilitation skills into the health care of a physically active population in a variety of clinical settings. Prerequisite: ES302 with a grade of C or better.

ES402 Athletic Training Clinical Experience IV**(0,4) 2**

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, therapeutic rehabilitation skills and administrative skills into the healthcare of a physically active population in a variety of clinical settings. Prerequisite: ES401 with a grade of C or better.

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 on 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: ES262 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: ES262 with a C grade or better.

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.

ES450 Philosophy of Human Performance and Leisure
(3,0) 3

A study of the origins and development of leisure behavior, sport, athletics and personal fitness across cultures. Ethical issues such as violence, opportunity, exploitation, role models and equity will be examined. Prerequisites: ES262 or RC101 and junior status.

ES452 Athletic Training Administration
(3,0) 3

This course will examine the administrative duties that athletic trainers must perform effectively and efficiently do their jobs. These tasks involve organization tactics, job performance evaluations, budgetary concerns, facility design, record keeping, insurance concerns and legal aspects. Prerequisites: senior in the Athletic Training Program and ES349. Students within the Athletic Training Program will take this course concurrently with ES401.

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

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Comprehensive practical application of students formal academic preparation. Prerequisite: Junior status and instructor permission.

ES496 Selected Research Topics
(1-3,0) 1-3

Student carries out approved project(s) of his/her own initiative. Prerequisite: Junior standing and instructor permission.

**ELECTRONICS
ENGINEERING
TECHNOLOGY AND
TELECOMMUNICA-
TIONS ENGINEERING
TECHNOLOGY**

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ET110 Applied Electricity
(3,2) 4

This course covers basic principles of DC and AC electricity. Topics include resistance, inductance, capacitance, series and parallel circuits, magnetic circuits, transformers and electrical motors. Laboratory exercises will reinforce the lecture material. Prerequisite: MA140 with a C or better.

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.

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. Corequisite: MA143.

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 and MA143.

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. Prerequisites: ET240 and EE125.

**ENVIRONMENTAL
SCIENCE**

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EV125 Geospatial Basics
(0.5, 1.5) (7 weeks) 1

Introduction to map and compass work, introduction to aerial photos, concepts of scale, cartography, surveying, orienteering, map coordinate systems and projections. Pre- or corequisite: MA092.

EV126 Air Photo Interpretation
(0.5, 1.5) (7 weeks) 1

Fundamentals of remote sensing for geospatial analysis, air and satellite photos, color IR photography, land cover and land use maps, map construction and analysis. Prerequisite: EV125 or equivalent.

EV127 Global Positioning Systems
(0.5, 1.5) (7 weeks) 1

Basic theory and operation of GPS receivers, navigation, post-processed and real-time DGPS, data dictionaries, collecting attribute data, import/export of GPS data into mapping systems, coordinate systems and datum conversions. Prerequisite: EV125 or equivalent.

EV128 Geographic Information Systems
(0.5, 1.5) (7 weeks) 1

Introduction to the concepts and application of geographic information systems (GIS). Topics to include data acquisition, spatial databases, applications, issues and trends. Students will gain practical experience in the operation of GIS systems. Prerequisite: EV125 or equivalent.

EV226 Geospatial Analysis I
(0,2) (7 weeks) 1

Development of intermediate geographic information systems concepts and applications including import of GPS data, attribute tables, images and spatial databases into GIS. Also includes using GPS for problem solving and project design, GIS extensions for coordinate/projection/datum conversions. Project required integrating student-gathered data with existing GIS databases. Prerequisites: EV126 and EV128.

EV227 Geospatial Analysis II
(0,2) (7 weeks) 1

Developing advanced geographic information systems concepts and applications conversions between coordinate systems and projections, GIS extensions including Spatial and Image analyst for raster and vector analysis. Project required integrating student-gathered data with existing GIS databases. Prerequisites: EV226 and MA207.

EV285 Principles of Epidemiology**(3,0) 3**

Principles, purpose and methods of descriptive and analytic epidemiology with emphasis on environmental health. Prerequisite: MA207.

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 1 (*incomplete*) 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**(3,0) 3**

Study of the fundamental concepts of environmental law and ethics. Course includes a survey of the field of environmental ethics and a discussion of ethical issues, a review of the basic legal systems and research techniques, state and federal environmental statutes and codes of conduct for environmental professionals. Extensive use of case studies related to application of environmental law are used to illustrate ethical dilemmas and the approaches for resolving them. Prerequisite: 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. Prerequisite: MA112 or equivalent.

EV325 Geospatial Analysis III**(1,6) 3**

A project-centered course incorporating advanced GIS tools and data sources for geospatial analysis. Course topics include computer systems analysis and design, project management, and the integration of information from multiple sources for the creation and analysis of georeferenced data. Project required, course may be repeated once with permission of instructor. Prerequisites: EV227 and MA207.

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: CH220 or CH225/226, CH231 and NS103. 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 or 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 1 (*incomplete*) 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.

FINE ARTS**FA405 Independent Project****(3,0) 3**

Under the direction of an appropriate supervisor, the fine arts studies student will prepare and create a project within the scope of the student's principal continuations. The project will normally integrate or synthesize aspects of the fine arts; however, its precise nature will be a matter for discussion and approval by the faculty supervisor. The project will be concluded by an appropriate presentation and written report. Prerequisites: fine arts studies major and senior standing. Must be taken both fall and spring semesters for a total of six credits.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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. Prerequisites: AC132, or AC230, or OA119, and MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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 MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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.

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**

An introductory course designed to develop the four basic language skills of understanding,

reading, speaking and writing, as well as the fundamentals of grammar. A conversational and cultural approach based on everyday life situations from the Francophone world. Basic information in English with progressive emphasis put on the use of French in class.

FR152 First Year French II
(4,1) 4

Continuation of FR151 with further acquisition of syntax, grammar and culture with increased emphasis on speaking, reading and writing. As course progresses and the use of French becomes almost dominant in class, basic conversation and composition practice based on increased cultural awareness becomes more elaborate and refined. Prerequisite: FR151 or equivalent.

FR251 Second Year French I
(4,1) 4

A course designed to help students further and complete their mastery of basic spoken and written French. Review and completion of grammar information. Systemic conversation practice based on more-advanced readings dealing with current social issues within a broad historical and cultural context, as well as a more-elaborate practice of composition writing. Course largely taught in French. Prerequisite: FR152 or equivalent.

FR252 Second Year French II
(4,1) 4

Continuation of FR251 with further emphasis on oral presentations, general conversation practice and writing of compositions, essays, reports and letters. Development of a more mature use of syntax, grammar and idioms within a broader cultural context which includes a first approach to French literature. Initiation to the basic principles of translation and interpretation. Course almost completely taught in French. Prerequisite: FR251 or equivalent.

FR351 Advanced Conversation and Composition I
(3,0) 3

Extensive reading, debating and writing related to contemporary issues within the Francophone world as they are expressed in books, films, newspapers and television. Further practice of translation and interpretation. Preparation to the examination for the DELF (Dilome Elementaire de Langue Francaise) of the French Ministry of Education. Prerequisite: FR252 or equivalent.

FR352 Advanced Conversation and Composition II
(3,0) 3

Continuation of FR351 and systemic practice to the examination for the DELF. 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. A conversational approach is used with systematic oral and written practice from authentic documents. Preparation to the examination leading to the *Certificat Pratique* from the Chamber of Commerce of Paris. May be taken concurrently with FR351. Prerequisite: FR252 or equivalent.

FR354 Business French II
(3,0) 3

Continuation of FR353. Aims to bring students to a level of proficiency in French business communication that would enable them to function in an internship situation. Visits to French-speaking companies. Further preparation to the examination leading to the *Certificat Pratique* from the Chamber of Commerce of Paris. May be taken concurrently with FR352. Prerequisite: FR353 or equivalent.

FR355 Survey of French Literature I
(3,0) 3

A chronological study 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 evolution of language and literature. Text analysis and discussion. May be taken concurrently with FR351. Prerequisite: FR252 or equivalent.

FR356 Survey of French Literature II
(3,0) 3

Continuation of FR355. Study of major works of French literature of the 19th and 20th centuries. Text analysis and discussion. May be taken concurrently with FR352. Prerequisite: FR252 or equivalent.

FR360 French Cultural Perspectives
(3-4) 3-4

This course takes place in France as students participate in a study tour with their instructor. They discover Paris, its monuments, art galleries, museums and libraries; visit ancient Roman vestiges, cathedrals of the Middle Ages and chateaux of the Renaissance. Students actively participate in French daily life. Assignments (in French or English) consist of detailed daily reports of guided visits and a research paper due one month after return. May be used as humanities credit. Offered summers only. No prerequisite.

FR370 The Francophone World I
(4,0) 4

This course conducted in English is designed to provide information and help understand the people of French-speaking Africa, French West Indies, South-East Asia and Polynesian Islands. It consists in a study of colonial and post-colonial history, culture and society in these different parts of the world. Participation of native guest speakers with extensive use of audio-visual materials will richly enhance participation and discussion. Prerequisite: junior standing.

FR460 Directed Academic and Cultural Immersion
(6,1) 6

This multi-facets course, that takes place in a French-speaking environment, allows students to reach oral and written fluency in language as well as advanced knowledge in a broad variety of areas directly related to French life and civilization. Upon completion of a specific number of courses chosen in consultation with their advisor, students will be granted upper division credits towards completion of their major requirements. Prerequisite: completion of two 300-level courses at LSSU.

FR490 Independent Study in French
(1-4)

Independent research or directed study under the supervision of a faculty member. May be repeated for a total of eight credits. Prerequisite: permission of instructor.

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.

FS102 Wildland and Rural Fire Control
(3,0) 3

Class will provide the theory and practical instruction necessary to manage and control wildland fires. Prevention, back burns, grid references, fuels, firefighting methods and tactics are covered in the course. Select students may earn their "red card" which provides United States Forest Service certification.

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.

FS197 Physical Fitness for Public Safety
(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Fire science students take the course semester before FS220.

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: MA086 or equivalent/satisfactory score on ACT or placement exam and FS101 or FS 102, or BL102 or BL140 or BL286 as a pre- or corequisite.

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. Prerequisites: FS101 and FS204.

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: Either FS101 or FS102 and FS204 as a pre- or corequisite.

FS220 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. Prerequisites: FS101, FS111, FS197 and FS204. Corequisites: FS205 and FS211. Completion of specialized medical examination.

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: FS111 and either FS205 or TC110 and junior standing.

FS312 Hazardous Materials Management
(3,3) 4

Covers requirements of federal law dealing with hazardous incidents, waste management with reference to OSHA, NIOSH, NFPA, and ACGIH standards. This class can certify select students at the level of general hazard awareness, emergency response operations, and hazardous waste worker. Prerequisites: FS111 or CH116 and junior standing.

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. Prerequisites: FS101, FS111 and junior standing.

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.

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 and FS220.

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. May be repeated up to six credits. Prerequisite: Permission of instructor.

GEOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

GE115 Field Excursions in Earth Science
(2,4) 4

A field- and project-based educational experience in which aspects of geology, including environmental geology, earth resources, tectonic processes and the interrelationships among geology and other natural sciences, will be addressed. Travel destinations will include regions with unique natural history. Prerequisite: SA091 or equivalent satisfactory score on ACT or Placement Exam. Credit can be earned for only one of NS102, GE115 and GE121.

GE121 Physical and Historical Geology I
(3,2) 4

The study of processes and features of the rocks and surficial materials that form the Earth's crust. Emphasis will be placed on the dynamic earth including volcanoes, plate tectonics, geologic time, catastrophic events such as earthquakes, and natural resources and their impact on society. The class requires student projects and emphasizes active problem-solving. Laboratory exercises involve minerals, rocks, topographic and geologic maps. Prerequisites: SA091 or equivalent/satisfactory score on ACT or placement exam. Credit can be earned for only one of NS102, GE115, and GE121.

GE122 Physical and Historical Geology II
(3,2) 4

The study of surficial processes and landforms in the context of their historical perspective. Emphasis will be placed on evolution of the earth; stratigraphic principles, tectonic framework of North America; landforms and depositional environments; climate, weathering, surficial processes, and sea level changes; and significant events in the history of plants and animals. Laboratory exercises involve geologic maps, invertebrate paleontology, and surficial processes including environmental applications. Prerequisite: GE121 or NS 102 or GE115.

GE218 Structural Geology and Tectonics
(3,6) 5

A study of the deformation of the Earth through a project-centered approach that focuses on actual tectonic problems. Emphasis will be placed on descriptive, kinematic and dynamic analysis of geologic structures, deformation mechanisms and the evolution of each in the context of the regional and global geology. Prerequisite: GE122.

GE223 Mineralogy and Petrology
(3,6) 5

A laboratory course emphasizing hand-sample techniques for identification of minerals and rocks. Major topics include: physical properties, crystalline structure, and chemical composition of minerals; classification of minerals and rocks; origins of igneous, sedimentary and metamorphic rocks; plate tectonic occurrence of minerals and rock assemblages; and societal and economic significance of minerals and rocks. Prerequisite: GE122 or NS102. Pre- or corequisite: CH115.

GE280 Introduction to Field Geology
(0,9) 3

Introduction to field methods in geology including measurement of sections, mapping techniques, and field interpretation of outcrops. A variety of geologic provinces and environments will be examined. A supply and travel fee will be charged. Prerequisites: GE218 and GE223.

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. Prerequisite: Sophomore standing or higher.

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. 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. Pre- or co-requisites: MA112 or MA143 or MA151 and PH222 or PH232.

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.

GE352 Invertebrate 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.

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.

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
(3,2) alternate years 4
A survey of major resource-forming processes, including ore deposits, industrial minerals and rocks, coal, crude oil and natural gas. Related topics include land ownership and mineral rights, exploration techniques, production methods, marketing strategies and economic aspects. Case studies related to resource exploration and extraction, as well as environmental impact of such activities, are incorporated to illustrate ethical dilemmas in the geosciences and approaches for resolving them. Laboratory exercises appropriate to the topics and a student research project. Prerequisites: GE112 and GE22 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.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam. 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.

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.

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.

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.

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.

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 and 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.

HE185 Basic Pre-Nursing Competency Skills

(0,3) 1

The purpose of this course is to introduce the beginning student to basic pre-nursing skills. The student will learn hand washing, putting on and removing gloves, linen changes, dependent positioning, independent positioning, transfers, total hygiene, ambulation, body mechanics and patient safety.

HE186 Fundamental Health Care Skills

(4,9) 7

Students will learn the basic skills necessary to provide safe, competent care of the acute and chronically ill client in a variety of health care settings (acute care/long term care/home care & subacute care settings). The expanded role of the nursing assistant will also be addressed (rehabilitative, obstetric, neonate and pediatric care roles). Focus will be on the care of the elderly. Successful completion of this course will qualify the student to write the certification examination for nursing assistants.

HE189 Medical First Responder

(2,3) 3

This course is designed to teach students the principles of basic life support and emergency care. Topics include patient assessment and handling, airway maintenance, cardiopulmonary resuscitation, bandaging, splinting and spinal immobilization. Management of common environmental and medical emergencies will also be addressed. Upon successful completion of the course, students will be eligible to apply for a Michigan Medical First Responder license.

HE190 Prehospital Emergency Care and Crisis Intervention I

(3,3) 4

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

(2,6) 4

Simulated practice with some in-hospital observation. Emphasis on laboratory practice of skills needed for functions of an EMT-A. Prerequisite: HE190.

HE207 Nutrition Application in Health Care

(1,0) 1

This course is designed for students taking HE208 Nutrition. In this class, exercises and

group discussion are utilized to assist the student in the application of nutritional principles with special emphasis on application in health care. Corequisite: HE208.

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 and CH105.

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.

HE211 Emergency Pharmacology I

(2,0) 2

Introduction to emergency pharmacology including sources of drugs, drug laws and regulation, routes of administration, pharmacokinetics and pharmacodynamics, dosage calculations and the metric system. Emphasis will be placed on drugs used in the management of cardiovascular emergencies. Prerequisite: math competency or MA103, and corequisite HE251.

HE212 Emergency Pharmacology II

(2,0) 2

Continuation of HE211 with an overview of emergency drugs frequently used in the prehospital management of respiratory, endocrine, toxicological, obstetrical and other prehospital emergencies. Administration procedures and dosages for adult and pediatric patients will be covered. Prerequisite: HE211 with a B- or above.

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 computers and information technology, focusing its application to education, research, administration and practice in health care professions. Topics include computer fundamentals, health care

information systems, overview of software taxonomies, health care applications, ethical security, and design considerations and application of computer office software in health care practice. Course meets general education requirements for computer application. Corequisite: NU213 for pre-licensure students.

HE251 Advanced Emergency Care I (4,0) 4

Study of prehospital emergencies geared toward rapid intervention and patient stabilization. Introduction to the pre-hospital environment and preparatory information will be covered including medical-legal issues, airway management, parenteral therapy and comprehensive patient assessment. Management of traumatic injury and multiple casualty incidents will be addressed. Prerequisite: admission to Paramedic Technology Program.

HE252 Advanced Emergency Care II (4,0) 4

Continuation of HE251 addressing treatment modalities for environmental, medical, obstetrical and behavioral emergencies in the adult and pediatric patient. Prerequisite: HE251 with a *B-* or above.

HE261 Emergency Cardiology I (2,0) 2

Introduction to basic cardiac monitoring and dysrhythmia recognition. Review of the anatomy and physiology of the cardiovascular system, principles of electrophysiology, EKG interpretation and dysrhythmia management will be covered. Sinoatrial, junctional and atrial dysrhythmias will be addressed. Corequisite: HE251.

HE262 Emergency Cardiology II (2,0) 2

Continuation of HE261 with emphasis directed at identification and management of life-threatening dysrhythmias including ventricular dysrhythmias and heart blocks. Coronary artery disease, myocardial infarction and other cardiovascular emergencies will be addressed, and the course will conclude with ACLS certification. Prerequisite: HE261 with a *B-* or above.

HE284 Advanced Skills and Situations I (1,6) 3

Advanced skills and procedures discussed in Advanced Emergency Care will be demonstrated and practiced in a laboratory setting. Skills covered will include advanced airway management, parenteral therapy, cardiac monitoring and advanced patient assessment. Simulated patient scenarios will be designed to allow the student to practice these advanced skills in a realistic patient setting. Emphasis will be placed upon strengthening new skills and providing critical thinking opportunities which allow for the integration of theory with practical applications. Prerequisite: admission to the Paramedic Technology Program and corequisite HE251.

HE285 Advanced Skills and Situations II (1,6) 3

Continuation of HE284 with an emphasis placed on ACLS and PALS procedures and algorithms. Instructor and peer evaluation will enhance learning, and working in groups will promote the

concepts of teamwork and individual leadership. Prerequisite: HE284 with a *B-* or above and corequisite HE252.

HE297 Paramedic Clinical I (0,12) 2

Clinical rotations in the hospital emergency department, surgical suite, outpatient surgery and with local EMS agencies designed to provide the student with hands-on practical experience of patient care. Corequisite: HE251 and permission of the instructor.

HE298 Paramedic Clinical II (0,12) 2

Clinical rotations in the hospital emergency department, intensive care unit, obstetrical unit, pediatrics unit and local EMS agencies will provide the student with a continuation of clinical exposure. Additional clinical experience in other areas may be included as the opportunity permits. Prerequisite: HE297 with a *B-* or above and concurrent with HE252.

HE328 Multicultural Approaches 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, assessment techniques and alternative/complementary health practices. 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. Also listed as BA354.

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. 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. Also listed as SW480.

HONORS PROGRAM

HP101 Honors First-Year Seminar (variable topics)

(1-2,0) 1-2 credits

An intensive reading/discussion seminar of selected topics from any discipline of special interest to first-years honors students. An interdisciplinary focus is encouraged as well as the inclusion of active learning strategies that promote self-directed learning. Class size is limited to 15 to promote student and faculty interaction around the world of ideas. Prerequisites: status as an Honors candidate (freshman) or fully admitted University Honors Program student, and/or permission of the Honors coordinator. May be repeated for a maximum of four credits.

HP202 Honors Contemporary Issues (3,0) 3

An interdisciplinary sophomore-level seminar for University Honors Programs students. The course is designed to accommodate a range of specific topics; the particular topics, however, will investigate some aspect of the history of

intellectual ideas, the nature of intellectual inquiry, and/or the construction of knowledge. The instructor serves as a facilitator in the seminar format which is intended to encourage student-directed learning. Prerequisites: formal admission to the University Honors Program and/or permission of the Honors Program coordinator.

HP302 Honors Ideas Seminar
(3,0) 3

A junior-level seminar for University Honors Program students. The course is designed to accommodate a range of special topics to be submitted by LSSU faculty under the general provision for Special Topics; the topics may evolve out of an interdisciplinary focus on some aspect of traditional disciplinary subject matter, or may be a reconfiguration of a regular course, redesigned to meet the particular needs of Honors Program students. The role of the instructor, however, would be as a facilitator, working within the seminar format to encourage student-directed learning around a topic requiring intellectual rigor. As this is a core requirement for all junior Honors students, it is expected that a given course proposal would not require prerequisites beyond those for general education. Prerequisites: formal admission to the University Honors Program, junior status, and/or permission of the Honors Program coordinator. HP201 recommended.

HP401 Honors Thesis
(3,0) 3

A major written work based on independent research or creative effort to be carried out under the supervision of a full-time faculty member. Research is intended to be widely interpreted and may include, but is not limited to, experiments, analysis of existing data, and a summary and integration of already completed but dispersed research. Students will make a formal presentation of their findings to the Honors Council, the thesis supervisor, junior/senior Honors students, and others in the spring of their senior year. Prerequisites: 3.5 GPA, 15 Honors credits, HP201 and HP301. Students must present a fully developed proposal to the Honors Council for approval before enrolling in HP401 or its equivalent in their major.

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) Fall 4

A study of world civilization from earliest time through the baroque.

HS102 History of World Civilization II

(4,0) Spring 4

A study of world civilization from the baroque to the present.

HS131 United States History I
(4,0) Fall 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) Spring 4

A study of United States history from the end of the Civil War to the present.

HS133 Labor History of the United States

(4,0) (on demand) 4

A survey of labor history from the colonial period to the present: political, economics and social impact of American labor and the American labor movement on the development of the United States.

HS201 Classical World and Medieval Europe

(4,0) on demand 4

A survey of Mediterranean civilization from the Bronze Age to the eve of the Renaissance.

HS202 Renaissance, Reformation and Baroque Europe

(4,0) on demand 4

A study of the political, institutional, religious, social, economic and cultural developments from 1400 to 1700.

HS230 Survey of Native History of North America

(4,0) (on demand) 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) on demand 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) on demand 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) on demand 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) Spring, even-numbered years 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) Fall, odd-numbered years 4

A study of Russian history from Peter the Great to the present.

HS315 Europe From Napoleon to World War I

(4,0) Fall, even-numbered years 4

A study in the political and economic history of Europe in the period 1789-1914.

HS316 Europe in the 20th Century
(4,0) Spring, odd-numbered years 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) Fall, even-numbered 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) Spring, odd-numbered 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) on demand 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) on demand 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) Fall, even-numbered years 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 geography of South America.

HS371 Far East Civilization 1850-Present
(4,0) Fall, odd-numbered years 4
A study of the history of China, Japan, India and adjoining areas of Asia from 1850 to present.

HS420 Field Methods of Archaeology
(4,4) Summer 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.

HS425 The Politics of U.S. Labor History
(3,0) 3
This course examines the role of organized labor in U.S. history, from colonial times to contemporary times. Attention will be given to the development of policies affecting unions. Prerequisite: upper-division student status.

HS440 The Declaration of Independence and the Constitution
(4,0) spring 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.

HS441 Diplomatic History of the United States I
(4,0) Fall, odd-numbered 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) Spring, even-numbered 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) on demand 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) Fall 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.

HS497 Senior Seminar in History
(0-6) Spring 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 and instructor permission.

HUMANITIES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

HU240 Native Art and Culture
(3,0) 3
An overview of traditional and contemporary Native arts including visual art, music, literature, storytelling, architecture, theater and dance within their cultural context. Relationships between historical and contemporary forms and expression of Native identity and philosophy through artistic mediums will be examined. Also listed as NA240.

HU251 Humanities I
(4,0) Fall, spring, summer 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) Fall, spring, summer 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) Fall, spring 3
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. Prerequisite: EN110.

HU261 World Literature I
(3,0) (on demand) 3
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. Prerequisite: EN110.

HU262 World Literature II
(3,0) (on demand) 3
The Renaissance to modern times. Readings in translation of significant, primarily Western, texts. Selections can include works by Galileo, Voltaire, Racine, Goethe, Ibsen, Dostoevsky, Brecht, Kafka, Sartre and others. Prerequisite: EN110.

HU490 Directed Studies in Humanities
(1,0) (on demand) 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 The Human 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.

ID301 TRECS Planning Semester
(1,0) 1
This course will function as a planning and organizational course for students who intend to be involved in the travel semester course which will be offered the following fall semester. Prerequisites: The student must be at least a second semester sophomore and be planning to enroll in the fall travel semester (TRECS).

ID310 Foreign Study
3-16 (graded)
Individual extension added based on student's program.

ID320 Foreign Study
3-16 credit/no credit
Individual extension added based on student's program.

ID333 The Origins of Human Nature
(4,0) 4
An integrated, interdisciplinary examination of the origins of human nature from the perspective of contemporary evolutionary theory, ethology and biological anthropology. The course examines the origins of — among other phenomena — sexual behavior, marriage and family life, crime, social stratification, leadership, government, politics, patriotism, nationalism, racism, ethnocentrism, aggression, genocide, war, ideology and morality. Prerequisites: a college biology course or PY101, one college course from each of two social science disciplines (anthropology, economics, political science, psychology, sociology), and junior standing.

ID380 TRECS Semester Seminar (Travel, Research, Educational, Cultural Semester)
(3,0) 3
This course will focus upon the educational opportunities which will be available through the specific sites that are visited during the travel semester. These sites include but are not limited to Washington D.C., New York City, St. Louis, MO, San Francisco, CA, various national parks, national monuments, national battlegrounds, national museums, and other regions and cities throughout the United States.

ID399 Internship in (Department)
(1-4,0) 1-4

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.

ID410 Foreign Study
3-16 (graded)

Individual extension added based on student's program.

ID420 Foreign Study
3-16 credit/no credit

Individual extension added based on student's program.

ID490 Senior Directed Study
(3-4, 0) 3-4

This course is designed to allow liberal studies majors the opportunity to develop and implement a project/paper using the skills and knowledge from their previous course work. Projects/papers should relate to the student's individual areas of study, and represent a synthesis of their previous learning under the supervision of an appropriate faculty member. Prerequisites: senior status and approval of the appropriate dean(s).

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 news writing 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 News writing
(3,0) 3

Gathering, processing and writing news and opinions on current matters using professional standards and formats in print and broadcast news and public relations. Prerequisites: JR210.

JR220 Photojournalism
(3,0) 3

Fundamentals of 35mm camera operations with emphasis on creative and professional applications. Weekly assignments and critique. Student required to have a camera with manual controls (shutter speed and aperture setting). Assignments in color negative film (color prints) processed commercially. No prerequisites.

JR310 Editing and Production
(3,0) 3

Focuses on news editing, headline writing, newspaper design and layout as well as newsroom management. 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.

JR410 Broadcast News writing
(2,3) 3

Designed to improve students' broadcast news writing 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.

JR411 Broadcast Editing and Production
(2,3) 3

Designed to build upon the broadcast reporting, writing and performing skills developed in JR410. 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.

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 the dean of the College of Arts, Letters and Social Sciences 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. All courses require permission of coordinator.

JS105 Intensive Introductory Japanese Language I
(10,2) 10

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
(10,2) 10

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. Prerequisites: LA102 and LA150.

LA140 Personal 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 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.

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 and 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.

LA301 Alternative Dispute Resolution and Conflict Management
(3,0) 3

This course explores non-judicial avenues of dispute or conflict resolution such as negotiation, mediation, arbitration, as well as court-annexed alternative dispute resolution mechanisms. The procedural aspects, key elements,

ethical considerations and practical applications of alternative dispute resolution are discussed as part of the dispute resolution landscape. The course will also include dispute resolution and conflict management simulations and case studies. Also listed as SW301.

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. Prerequisites: HS230 and NA230. Also listed as NA305/SW305.

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.

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.

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.

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. May be repeated up to a total of eight credits.

LIBRARY

LS101 Information and Information Technology Literacy
(1,0) 1

Introduces students to information tools and their uses, including reference books, indexes, periodicals, microforms, computer products and the Internet. Students will learn to effectively search information tools so they can more efficiently meet their information needs.

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 in the series of six modules addresses basic operations and problem solving using whole numbers and fractions. Credit in this course does not apply toward graduation. Prerequisite: none.

MA082 Pre-Algebra II
(1,0) 1

The second in the series of six modules addresses basic operations and problem solving using decimals, percents, and ratio & proportion. Credit in this course does not apply toward

graduation. Prerequisite: MA081 or placement by examination.

MA083 Pre-Algebra III
(1,0) 1

The third in the series of six modules addresses solving problems related to measurement, geometry and statistics. Credit in this course does not apply toward graduation. Prerequisite: MA082 or placement by examination.

MA084 Introductory Algebra I
(1,0) 1

The fourth in the series of six modules addresses the introduction to algebra, real numbers, algebraic expressions and solving of elementary equations. Credit in this course does not apply toward graduation. Prerequisite: MA083 or placement by examination.

MA085 Introductory Algebra II
(1,0) 1

The fifth in the series of six modules addresses application problems related to equations and inequalities, and polynomial manipulations. Credit in this course does not apply toward graduation. Prerequisite: MA084 or placement by examination.

MA086 Introductory Algebra III
(1,0) 1

The sixth in the series of six modules addresses graphing and functions, solving systems of equations, and radical expressions. Credit in this course does not apply toward graduation. Prerequisite: MA085 or placement by examination.

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 MA086 or equivalent/satisfactory score on ACT or Placement Exam. Credit in this course does not apply toward graduation.

MA101 Technical Mathematics
(3,0) 3

This course is an introduction to mathematical concepts used by individuals in the skills trade. The course content will vary based on the needs of the specific skilled trade offering the course in its apprenticeship and journeyman program. The content will include the discussion and use of various mathematical equations as they apply to a specific skilled trade and will include both theory and application of the mathematical concepts associated with the particular skilled trade. Topics may include, but not be limited to, basic mathematical concepts, algebraic and geometric concepts, trigonometric and other transcendental functions, and other mathematical concepts needed by the particular skilled trade. This course is not intended to count toward the general education credit in the bachelor of arts, bachelor of science, or other associate's degree programs at LSSU.

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: Equivalent/satisfactory score on ACT or Placement Exam 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: Equivalent/satisfactory score on ACT or Placement Exam or MA092 with a grade of C (2.00) or better.

MA108 Trigonometry and Vectors for Physics

(1,0) 1

Trigonometric functions, basic identities, inverse trigonometric functions and vectors. Prerequisite: equivalent/satisfactory score on ACT or Placement Exam or MA092 with a grade of C or better.

MA110 Explorations in Mathematics

(3,0) 3

A discovery course in mathematics which explores the varied relationships of mathematics to society and the natural world through application and enrichment. A statistics component is included, and a term project is required. This course satisfies the general education mathematics requirement. It will not count toward a major or minor in mathematics. Prerequisite: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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 equivalent/satisfactory score on ACT or 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 Precalculus Mathematics

(5,0) 5

Basic theory of functions, including polynomial, exponential, logarithmic and trigonometric

functions. Inequalities. Analytic geometry, plane trigonometry and vectors. Complex numbers. Systems of linear equations, matrices and determinants. Prerequisites: two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam, or MA092 with a grade of C or better, and one-half year of high school trigonometry or MA108 with a grade of C or better is strongly recommended. This course will not count toward a major or minor in mathematics.

MA143 Calculus for Engineering I

(4,0) 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 one-half year of high school trigonometry, and equivalent/satisfactory score on ACT or Placement Test, or MA140 with a grade of C or better.

MA144 Calculus for Engineering II

(4,0) 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.

MA151 Calculus I

(4,0) 4

Limits, continuity and inverse functions. Logarithmic and exponential functions. Differentiation and applications of the derivative. L'Hopital's rule. Inverse trigonometric functions. Integration and the definite integral. Prerequisites: high school mathematics that includes two years of algebra, one year of plane geometry and one-half year of trigonometry and equivalent/satisfactory score on ACT or Placement Exam, *or* MA140 with a grade of C or better.

MA152 Calculus II

(4,0) 4

Applications of the definite integral. Techniques of integration and improper integrals. Infinite series. Conic sections, polar coordinates and 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: MA086 or equivalent/satisfactory score on ACT or Placement Exam. This course will not count toward a major in mathematics.

MA208 Statistics Applications for Quality Control

(1,0) 1

A continuation of MA207, Principles of Statistics, with a focus on the use of the principles of statistics in engineering. Concepts of mean, standard deviation, probability and statistical process control through the use of control charts will be examined for application to quality control. This course normally meets the last one-half of the semester. Co- or prerequisite: MA207.

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 MA144 or MA112 with a grade of C or better.

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 with a grade of C or better.

MA243 Calculus and Linear Algebra for Engineers**(4,0) 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-valued 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: CS105 or CS121 with a grade of C or better and MA144 or MA152 with a grade of C or better.

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 instructor.

MA305 Linear Algebra**(3,0) alternate years 3**

An introduction to matrix algebra, vector spaces and linear transformation, including applications to the natural and social sciences. Prerequisites: MA112, MA143 or MA151 with a grade of C or better.

MA308 Probability and Mathematical Statistics**(3,0) 3**

An introductory course in probability and mathematical statistics. Probability, probability distributions, mathematical expectation, moment generating functions and the Central Limit Theorem. Prerequisite: MA144 or MA152 with a grade of C or better.

MA309 Applied Statistics**(4,0) 4**

A continuation of MA308 including estimation of parameters, testing hypotheses, nonparametric methods, analysis of variance, multiple regression and an introduction to statistical software packages. Prerequisite: MA308 with a grade of C or better.

MA310 Differential Equations**(3,0) 3**

Differential equations of first order, linear differential equations of second and higher orders, including Laplace transformation. Introduction to power series methods, applications. Prerequisite: MA144 or MA152 with a grade of C or better.

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: MA112, MA143 or MA151 with a grade of C or better, and MA215 with a grade of C or better.

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 with a grade of C or better.

MA341 Abstract Algebra I**(3,0) alternate years 3**

An introduction to congruencies, groups, subgroups, quotient groups, fundamental homomorphism theorems, Sylow theorems. Prerequisite: MA215 with a grade of C or better.

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.

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 with a grade of C or better.

MA401 Mathematical Modeling**(3,0) alternate years 3**

Selected applications of mathematics in such areas as biology, economics, social science and engineering 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: junior/senior standing, a course in computer programming, and mathematical maturity at the level of MA305, MA308 or MA310 with a minimum grade of C.

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 and MA310 with a grade of C or better.

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-Riemann equations, integrals, Cauchy integral theorem, series, singularities, residue theorem. Prerequisite: MA251.

MA421 Real Analysis I**(3,0) on demand 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 with a minimum grade of C.

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. Prerequisite: Junior standing or higher and permission of 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-

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, MK281 and MK381.

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, MK381, MK480 and senior status.

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 and 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.

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.

MN375 Introduction to Supply Chain Management
(3,0) 3

This course provides an overview of the supply chain function for an organization. The supply chain for any company is described as the continuous sequence of events and operations that add value to the firm. Topics will include

purchasing and procurement, inbound and outbound logistics and transportation, operations and manufacturing planning and control, forecasting, quality control, enterprise resource planning and overall information system design for the firm. Prerequisite: BA211 or statistics equivalent.

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.

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.

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.

MN471 Production/Operations Management
(3,0) 3

An introduction to the design and analysis of operational systems in manufacturing and service industries. Topics include manufacturing strategy, planning and control, forecasting, just in time systems, inventory models, product/process design, scheduling and simulation. Some mathematical models will be used. Emphasis will be on the role of operations within an organization and the formulation and solution of operational problems. Prerequisites: BA211 and MN360 or equivalents.

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. Corequisite: ME115.

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: MA140 with a C or better grade and PH221.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

MT315 CNC Manufacturing Process
(2,3) 3

Writing 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, ME141 and ME142, all with a grade of C or better.

MT432 Thermodynamics II/Heat Transfer for Technologists
(4,0) 4

A continuation of ME355 that includes refrigeration, gas mixtures, HVAC and combustion reactions for one-third of the semester. Then, the student is introduced to heat transfer fundamentals including conduction, convection and radiation, as well as design of heat exchangers. This course will focus on the application of thermodynamics and heat transfer to practical problems, including lab experiences involving refrigeration, conduction and convection measurement, and computer simulations in the design of actual systems. Prerequisites: ME355 or ME335 and ME336.

MUSIC

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

MU110 Orchestra
(0,3) 1

Perform regular series of concerts as a member of the Sault Symphony Orchestra.

MU111 Orchestra
(0,3) 1

Perform regular series of concerts as a member of the Sault Symphony Orchestra.

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.

MU120 Introduction to Music I
(3,0) 3

An introduction to the basic vocabulary of music and to basic musicianship skills. Topics include notation, meter, rhythm, intervals, scales, chords, etc. No prerequisite.

MU121 Introduction to Music II
(3,0) 3

The course expands upon the musical vocabulary and skills developed in MU120. Topics include C-clefs, seventh chord, non-harmonic tones, cadences, etc. Prerequisite: MU120.

MU140 Chorus
(0,3) 1

Regular rehearsals and participation in various campus activities.

MU141 Chorus
(0,3) 1

Regular rehearsals and participation in various campus activities.

MU160 Jazz Ensemble
(0,3) 1

Regular rehearsals and performances during school year.

MU161 Jazz Ensemble
(0,3) 3

Regular rehearsals and performances during the school year.

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.

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.

MU210 Applied Music I
(0,3) 1

Individual applied music instruction. For skilled musicians with admission at the discretion of the

instructor. May be repeated to a maximum of eight credits per instrument or for voice.

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.

MU235 Music for Elementary Teachers
(3,0) 3

This course is designed to provide an understanding of the philosophy, theories and contemporary issues in music education in the kindergarten through sixth grade classrooms. The student will develop a practical knowledge of music skills and instructional techniques when planning a music curriculum for the elementary classroom.

MU250 Chamber Music I
(0,2) 1

For advanced students interested in solo and ensemble performance in a supervised program.

MU251 Chamber Music II
(0,2) 1

For advanced students interested in solo and ensemble performance in a supervised program.

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.

MU403 Senior Recital
(0,3) 1

Public recital at conclusion of music major program. Prerequisites: music major and senior standing.

NATIVE AMERICAN STUDIES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NA141, 142, 201 and 202 taught at Algoma University.

NA141 Ojibwe I, Anishnaabemowin
(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, Anishnaabemowin
(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 themselves orally; and gain the necessary knowledge, skill and practice which will prepare the student for Ojibwe conversation and elementary writing. Prerequisite: NA141.

NA201 Second-Year Ojibwe Conversation I, Anishnaabemowin
(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. Prerequisites: NA141 and NA142.

NA202 Second-Year Ojibwe Conversation II
(4,0) 4

This course is designed for those who wish to further their understanding of the Anishnaabe (Ojibwe) language. More attention will be given to the written form, and conversation practice will be more intensive. Students will learn about the customs and culture of the Anishnaabe people as they learn about the language. Prerequisite: NA201.

NA210 Indigenous Peoples of Central and South America
(3,0) 3

Course is an introduction to the native peoples of the South and Central (Meso) Americas based on archaeological and traditional information. The course content will focus on the history of cultural groups prior to the arrival of the Spanish. No prerequisites.

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 Native History of North America
(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 Literature of North America**(3,0) 3**

Students will examine various types of Native American literatures, including traditional stories, non-fiction, fiction and poetry, from authors of numerous different nations. A variety of themes, including Native American identity and the role of culture in literature, will be covered. Corequisite EN111 (also listed as EN235).

NA240 Native Art and Culture**(3,0) 3**

An overview of traditional and contemporary Native arts including visual art, music, literature, storytelling, architecture, theater and dance within their cultural context. Relationships between historical and contemporary forms and expression of Native identity and philosophy through artistic mediums will be examined. Also listed as HU240.

NA301 Anishinabe Oral and Recorded Literature I**(3,0) 3**

Investigation of problems of reading and writing associated with Anishnaabemowin. Regional differences will be explored, compared and analyzed. Several dictionaries will be used as illustration of some of the problems associated with writing. Students will review recorded literature, write short stories/legends, record oral literature using a writing system assigned by the instructor. Oration in Anishnaabemowin required. Prerequisite: NA202 with a grade of C or better.

NA302 Anishinabe Oral and Recorded Literature II**(3,0) 3**

Advanced investigation of problems of reading and writing associated with Anishnaabemowin. Regional differences will be explored, compared and analyzed in depth. Several dictionaries will be used as illustration of some of the problems associated with writing. Students will review recorded literature, write short stories/legends, record oral literature using a writing system assigned by the instructor. Translation, interpretation and oration in Anishnaabemowin required. Prerequisite: NA301 with a grade of C or better.

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. Prerequisites: NA230 and HS230. Also listed as LA305/SW305.

NA310 Seminar in Native Studies of the Americas**(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.

NA320 Contemporary Native Issues of North America**(3,0) 3**

A study of current Native American issues, problems and concerns. Prerequisites: NA225, SO226, NA230, NA235, and NA305.

NA401 Seminar in Advanced Language Studies I**(3,0) 3**

Advanced study in grammar of Anishnaabemowin language. Oral histories, humorous stories, general stories, legends and narrative stories will be used to demonstrate the complexities of the language. As verbs make up 80 percent of the language, the verb structure will be further analyzed. Learners will compare and contrast selected linguistic articles for their accuracy and inaccuracy in representing how the language works. Written and oral assignments of various degrees of difficulty will enhance the students' command of the language. Prerequisite: NA302 with a grade of C or better.

NA402 Seminar in Advanced Language Studies II**(3,0) 3**

Advanced study in grammar and conversation of Anishnaabemowin language. Oral histories, humorous stories, general stories, legends and narrative stories will be used to demonstrate the complexities of the language. As verbs make up 80 percent of the language, the verb structure will be further analyzed. Learners will compare and contrast selected linguistic articles for their accuracy and inaccuracy in representing how the language works. Written and oral assignments of various degrees of difficulty will enhance the students' command of the language. Practical application of language outside the campus classroom. Prerequisite: NA401 with a grade of C or better.

NATURAL SCIENCES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NS101 Conceptual Physics**(3,2) 4**

A survey of basic physical science principles emphasizing their applications in daily life. Prerequisite: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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. Credit can be earned for only one of NS102, GE115 and GE121. 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**(3,1) alternate years 3**

Study of the physical properties of the earth's surface as they relate to landforms and soils. 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. Pre- or corequisite of MA092 or equivalent/satisfactory score on ACT or Placement Exam.

NS116 Introduction to Oceanography**(3,2) 4**

A survey of the features, processes and evolution of Earth's ocean basins. The course will examine geological, physical, chemical and ecological aspects of oceanography with an emphasis on their interrelationships and their impact on humanity. Prerequisite: none.

NS119 Descriptive Astronomy**(3,2) 4**

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

NURSING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NU211 Introduction to Professional Nursing**(3,0) 3**

This course introduces the student to a theoretical foundation for professional nursing practice. It focuses on nursing's historical origin, and its development throughout the years to present. Concepts discussed include nursing and related theories, the nursing process, legal/ethical issues and other topics relevant to the practice of professional nursing. Prerequisite: admission into the nursing program.

NU212 Health Appraisal**(2,6) 4**

This course serves as an introduction to the nursing assessment and analysis 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 and documenting a health history, performing a nursing assessment and beginning to formulate a nursing diagnosis. Prerequisite: admission into the nursing program or permission of instructor for non-nursing major.

NU213 Fundamentals of Nursing**(3,9) 6**

This course provides a theoretical and clinical foundation upon which science is applied to clients experiencing common health stressors. Emphasis is placed upon collecting relevant data, formulating nursing diagnosis based on the data, implementation of both appropriate nursing interventions and related psychomotor nursing skills. Responsibilities as a health team member who displays caring behaviors and as a self-directed learner are also considered. Prerequisites: NU211, NU212, HE207 and HE208. Pre-corequisites: HE232, BL223 and HE209.

NU222 Transition Course: Nursing Concepts**(1,0) 1**

This course assists articulating students from selected Ontario Diploma Nursing Colleges using the Georgian Model (Cambrian College, Sault College and Georgian College) who are enrolled in the pre-licensure articulation program to assimilate/integrate philosophical concepts, issues and values inherent within professional nursing and the nursing program at Lake Superior State University into their personal philosophy development.

NU290 Directed Study in Nursing**(1-2,0) 1-2**

Special study of nursing topic tailored to student interest and need. Prerequisite: minimal sophomore status. May be repeated for maximum of four credits.

NU325 Nursing of Childbearing Families**(3,6) 5**

Theoretical and clinical foundation for application of the nursing process in caring for childbearing families. Focus on: norms and complications of the childbirth experience with application of strategies to promote health and prevent complications related to pregnancy and childbirth. Prerequisite: NU327

NU326 Nursing of Children and Families**(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, environmental influences on health and the nursing process. Prerequisite: NU327.

NU327 Adult Nursing I**(4,15) 9**

Combined class and clinical experiences that apply the concepts of nursing and related

theories to the care of the adult client with common health alterations in each of the basic human need areas. Nursing clinical experiences are in primary, secondary and tertiary care settings for adult clients. NU213 and HE209. Corequisite: HE352.

NU360 Professional Nursing Concepts**(4,0) 4**

This four-credit course is the transitional course into professional nursing for the practicing registered nurse. Course emphasis: concepts of professional nursing, nursing and other related theories, health promotion, using research in nursing practice, impact of technology on profession, and economics related to nursing care. Includes: the history of nursing, ethics, culture, and critical thinking are interwoven in the exploration of concepts.

NU363 Comprehensive Health Appraisal**(2,3) 3**

Application of theories from nursing and related fields to appraise health of the individual throughout the lifespan. Emphasis is on comprehensive history taking, physical assessment skills and assessment of findings. Pre- or co-requisite: NU360.

NU365 Family Nursing Theory**(3,0) 3**

Theoretical concepts of family development, structure and dynamics are presented. Factors influencing family health care are examined. Strategies are developed to enhance healthy family functioning. Prerequisite: SO101. 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: All required junior-level courses. Corequisite: NU435.

NU432 Nursing of Populations**(3,6) 5**

This is a theory and clinical course applying the nursing process to populations. Content includes application of public health nursing principles, levels of prevention, epidemiology and health education. Expands the role of the nurse as a teacher, collaborator and advocate. Examines the effect of health care delivery trends and issues on the health of populations. Prerequisites: HE352, all required junior-level courses and NU431. Post-licensure student: NU363 and NU365.

NU433 Community 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. Clinical experiences are provided in both the community and in the acute care settings. Prerequisites: HE352, all required junior-level nursing courses and NU431.

NU434 Nursing Research**(3,0) 3**

This course develops appraisal skills of nursing and related research. It will enable students to think critically and ethically about providing the best possible care to clients based on evidence. Assignments and class discussion emphasize application of current research to a variety of dimensions including human beings, health, nursing and environment. Prerequisites: PY210 or MA207 and all required junior nursing courses, or NU360 for post-licensure 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 nursing model integration in management, communications, decision making and conflict resolution, resource management, legal and ethical responsibilities, employee relations, health care system design, systems appraisal, and case management. Students will formulate a personal nursing management/leadership philosophy. Prerequisite: NU360 for post-licensure student. Corequisite: NU431 for pre-licensure student.

NU436 Contemporary Issues in Nursing**(2,0) 2**

Course analyzes contemporary and future issues involving the professional nurse. The course further explores role socialization from nursing student to BSN-prepared nurse. Course reviews the legal responsibilities and professional regulation of nursing practice. Selected social, ethical, political, economic and legal issues will be examined. Prerequisite: all junior-level nursing courses for pre-licensure students and NU360 for post-licensure students.

NU437 Professional Nursing Leadership**(1,3) 2**

This is a seminar and clinical course where the student is expected to synthesize the roles of professional nursing in a variety of settings. Collaborative and leadership aspects of professional nursing are emphasized by the students planning their experience with the faculty member and preceptor. Integration of ethics, research, change, caring, advocacy, and approaches to ensure quality care in nursing practice are expected. Prerequisites: NU432, NU434 and NU435. May take concurrently with NU435 or NU436.

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 instructor permission.

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 Computerized Accounting Procedures (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. Prerequisites: Word processing and a grade of C or higher in EN111.

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. Prerequisites: MA108 and 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. Prerequisites: PH221 with a grade of C or better, sophomore standing in EET course work, 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 with emphasis on practical applications. Intended primarily for students of engineering, physical science and mathematics. 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.

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 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. Prerequisite: EN111.

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. Prerequisite: EN111.

PL210 Existentialism (3,0) 3

Survey of existentialist literature from a variety of authors, periods and genres: Dostoevsky, Kierkegaard, Nietzsche, Heidegger, Jaspers, Sartre, Camus, de Beauvoir, Rilke, and others. Texts include philosophical prose, biblical exegesis, fiction, drama and poetry, containing many of the definitive expressions of such current literary, philosophical and artistic themes as the varieties and sources of alienation, the creation and definition of the self, the nature and rationality of religious faith, moral responses to insoluble dilemmas, and potential individual responses to an absurd and inhuman world. Prerequisite: EN111.

PL220 Biomedical Ethics (3,0) 3

Survey of contemporary issues in medical and research ethics. Topics could include abortion, euthanasia, genetic testing, reproductive technologies, doctor-patient relationships, conflicting imperatives on confidentiality and disclosure, social consequences or drug development and widespread use, concepts of health and disease, gender and medical practice, the distribution of medical resources, and the medicalization of various forms of social deviance. Prerequisite: EN111.

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: EN111.

PRACTICAL NURSING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

PN101 Practical Nursing I (4,0) 4

This course introduces the student to the basic scientific principles and concepts germane to nursing including health care systems, nursing process, nursing diagnosis, holistic health care and patient rights. The philosophy and conceptual framework of the practical nurse program are presented. Communication skills, and charting techniques are introduced. Cultural sensitivity and special needs of the elderly client are emphasized. Prerequisite: admission to the Practical Nurse Program.

PN102 Drugs and Dosages**(2,2) 3**

This course introduces the practical nurse student to dosage calculations and medication administration. Calculations for conversion between systems of measurement is covered. The five rights of medication administration is emphasized. Categories of drugs, their actions, side effects and nursing implications are covered. Prerequisite: admission to the Practical Nursing Program.

PN103 Nursing Care Issues Across the Lifespan**(3,0) 3**

This course looks at nursing care issues for individual clients from infancy to older adulthood using a holistic perspective to care.

PN201 Practical Nursing II**(6, 12) 10**

This course focuses on nursing care of the adult client experiencing common stressors affecting health. Emphasis is placed on the administration of medications, collection and communication of relevant data, and implementation of basic nursing interventions. Prerequisites: HE186, PN101, PN102 and PN103.

PN202 Legal/Ethical Issues in Practical Nursing**(2,0) 2**

This course focuses on the ethical and legal responsibilities and issues related to the safe practice of practical nursing. The role of the practical nurse and within the health care community is emphasized. Licensure responsibilities, career advancement and lifelong learning needs are incorporated. Prerequisites: HE186, PN101 and PN102.

PN203 Practical Nursing III**(3,6) 5**

This course explores the cycles of life, beginning with the reproductive cycle, conception, fetal development, labor, birth, the postpartum woman, and needs and care of the newborn. At risk pregnancies and complications are identified. Emphasis is placed on the family as the client. Prerequisites: HE186, PN101, PN102, PN103 and PN201.

PN204 Practical Nursing IV**(3,6) 5**

In this course, the nursing process is used to address well-defined health problems common to children. Normal child growth and development, immunization needs and health risk factors for children are emphasized. Children's responses to illness and methods of evaluating children's needs are covered. Prerequisites: HE186, PN101, PN102, PN103 and PN201.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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 and 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**(2,0) 2**

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 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.

PS331 Comparative Politics of Western Europe and Russia**(4,0) 4**

Institutions and functioning of government in major European states, such as Great Britain, France, Germany and Russia. Prerequisite: PS110.

PS333 Human Rights and World Politics**(4,0) 4**

This course provides an introduction to the international regime for the protection of individual human rights. This course covers the basic philosophy, principles, instruments and institutions that undergird the regime, along with an overview of several current issues and debates in the literature related to the cross-cultural conflicts over domestic compliance with the relevant treaties. 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.

PS335 European Union Politics**(4,0) 4**

The primary aim of this course is to provide in-depth knowledge of the institutions and politics of the European Union. The course provides a general overview of the "State of the Union" from an empirical (rather than theoretical) perspective. We shall use articles from the comparative and international politics literature, along with some legal materials to make sense of the institutional and policy issues facing the European Union. It should be emphasized that no knowledge of international legal processes is needed for the course. Prerequisite: PS110.

PS340 Politics in Multicultural Societies**(3,0) 3**

An examination of nationalism and other forms of political conflict arising from ethnic, racial, linguistic and religious differences in comparative perspective. Prerequisites: PS110 or PS160 and junior standing.

PS342 International Environmental Policy**(3,0) 3**

This course is intended to familiarize students with the efforts of the international community to establish policy guidelines designed to begin the regulation of the global environment. The course covers basic concepts to international relations necessary to understand the general workings of the nation-state system. It then begins an exploration of significant historical international environmental issues and the ways in which these have been dealt with by the international community. The course further challenges students by investigating various alternative solutions for solving the myriad of global environmental problems faced by all of humankind in the new century.

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.

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.

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. 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.

PS411 U.S. Foreign Policy**(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.

PS413 The International Legal Order**(4,0) 4**

The primary objective of this course is to explore the reasons for the emergence of the international legal order as a crucial constraint on the freedom of action of national governments; that is, to understand the impact of the international legal order on contemporary international relations. It also seeks to introduce the substance of international law in selected issue-areas, and to provide an overview of the nature of international legal reasoning. Throughout the course, we shall emphasize the interaction of law and politics, and of national and transnational legal processes. 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. 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.

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..

PS490 Independent Study in Political Science**(1-3) 1-3**

Independent research or directed study under the supervision of a faculty member. May be repeated for a total of nine credits. Prerequisite: Permission of instructor.

PS491 Senior Seminar I**(4,0) 4**

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.

PS492 Senior Seminar II**(4,0) 4**

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.

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 humans 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.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

PY212 Experimental Psychology**(3,2) 4**

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. Laboratory assignments require use of computer applications for experimental purposes, including running experiments and collecting data, analyzing results, creation of appropriate figures, and communication of results in text and oral presentations with slides. 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 or PY155 or TE150.

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: PY201. Also listed as SW291.

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.

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.

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. Also listed as SW391.

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, addiction counselors and industrial psychologists. Prerequisites: SO302, 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 define 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. May be repeated up to a total of six credits. Prerequisite: Permission of instructor.

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 and 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.

Lake Superior State University does not offer majors or minors in physical education. However, there is a wide variety of activity courses available that may be selected as free electives.

The faculty encourage you to participate not only in these activity courses, but athletics and intramurals as well.

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 and Walking for Fitness**(0,2) 1**

Introduction to jogging and walking as 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.

RA175 Step Aerobics**(0,2) 1**

A step workout is a high-intensity, low-impact aerobic workout for all fitness levels. The principle is to step up and down on a platform while simultaneously performing upper-body exercises. The program will work every major muscle group in the lower body, while training the upper body.

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.

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) alternate years 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. Prerequisites: 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 Alternate Years

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.

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

(1-2,0) 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. Prerequisite: Instructor permission.

RC320 Dance and Rhythmic Activities for Recreation

(3,0) alternate years 3

Study of dance in social and therapeutic settings; developing skills to lead programs and adapt 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.

RC344 Adapted Sports and Recreation

(3,0) 3

A study of specialized recreational and athletic opportunities available to individuals with illnesses and disabilities. Related associations, equipment, rules and classifications, resources and research will be encountered for a wide range of activities and conditions. When available, practical opportunities will be included as part of the learning process. Prerequisite: junior standing.

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 and 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 and 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.

RC367 National Parks, National Monuments and National Culture

(3,0) 3

This course will focus on the historical development of national parks and the affiliated National Land Ethic. Included in the presentation will be a study of the social, cultural, aesthetic and economic history which fostered the development of a national attitude that favored the "national park" concept. The course will also emphasize the emergence of national parks in this country as a representative of our national cultural history. The course will trace the historical development of a land ethic. It will also trace an emerging aesthetic awareness of land among people who arrived to this continent from Central Europe during the 1600s. This Central European land ethic will be compared to the land ethic of Native Americans. Both of these will be traced through this country's history and will serve as a basis for anticipating future land management trends and issues.

RC370 Recreation for the Elderly

(3,0) Alternate Years 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. Prerequisites: RC101, RC105 and 200-level recreation electives.

RC375 Commercial Recreation

(3,0) alternate years 3

An introduction to the scope, characteristics and management aspects of the commercial recreation industry. Substantial coverage of entrepreneurial strategies, economic concepts applied to commercial recreation, steps for creating feasibility studies, and operation management. An in-depth study of specific commercial recreation programs including travel, tourism, hospitality, club, and the entertainment industry will be included with emphasis on present and future trends and career opportunities. Prerequisite: RC105 or BA121, AC230, EC202 and FN245.

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 and instructor permission. May be repeated for a total of three credits.

RC397 Recreation Studies Junior Research Seminar

(1,0) 1

Introduces the concepts, purpose, methods and function of scholarly research and scientific inquiry. Prerequisites: junior standing, and majoring in recreation management or parks and recreation.

RC435 Problems, Issues and Research in Therapeutic Recreation and Leisure Sciences

(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. Prerequisites: RC397 and MA207, or PY210 or comparable statistics course.

RC437 Recreation Studies Senior Research Seminar

(1,0) 1

The focus of this course is to provide instruction and experience relative to data analysis and presentation methodologies affiliated with conducting research. The students will apply the procedures and methodologies discussed in class directly to their research projects. Prerequisite: RC435.

RC440 Disabilities Seminar

(3,0) 3

This class provides students with the opportunity to become familiar with a wide range of disabling conditions and illnesses. Emphasis will be placed on trends/issues, incidence, characteristics, etiology, restrictions to involvement, and most current research. The student research-presentation format will be used extensively in this class. Prerequisite: junior standing.

RC450 Philosophy of Human Performance and Leisure

(3,0) 3

A study of the origins and development of leisure behavior, sport, athletics and personal fitness across cultures. Ethical issues such as violence, opportunity, exploitation, role models and equity will be examined. Prerequisites: ES262 or RC101 and junior status. Also listed as ES450.

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 and instructor permission.

RC496 Selected Research Topics

(1-3,0) 1-3

Student carries out approved project(s) of his/her own initiative. Prerequisite: junior standing and instructor permission.

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

(2,0) 2

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. Prerequisite: MA140 with a C or better grade and CS101.

RS281 Robotics Technology Lab

(0,3) 1

The laboratory work will provide an introduction to the use of an industrial robot. There will be a focus on programming Adept and Staubli robots using the V+ programming language. Industry-like applications and system integration projects will be assigned. Corequisite: RS280.

RS282 Introduction to Robotics Programming

(0,3) 1

The laboratory work will provide an introduction to the use and application of an industrial robot. Programming concepts and structures in the V+ programming language as used in Adept and Staubli robots will be studied. Industry-like applications and system integration projects will be assigned. Prerequisite: RS280.

RS365 Programmable Logic Controllers

(2,3) 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 are an integral part of the course. Prerequisites: EE210 or both ET110 and EE125.

RS366 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. This course will only be offered at the regional sites. It is not a communication-intensive course. Prerequisite: electrical fundamentals course.

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. A detailed study of the orientation and configuration coordinate transformations and forward and inverse kinematics will be included. Prerequisites: EM220, EG265 or CS105, and MA243.

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, EG140, EG265, RS280 or RS385, and one of the following: EE310, EE305, or (RS365, EE125 and CS105).

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, MRP, materials requirement planning, production economics and CIM. Course work will include applications of manufacturing systems software including factory simulation. Laboratory work will focus on systems integration, advanced programming of industrial robots, and flow line automation. Prerequisites: RS385.

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. Prerequisites: MA310, EG340, EM220 and EE210.

RS461 Design of Control Systems

(3,3) 4

This course builds upon the fundamental control system theory covered in RS460 and introduces various control system design techniques. General topics include Bode and root locus design techniques, controllability and observability, optimal control, state space design, robust control and digital control system design. Several classical design techniques such as phase-lead, phase-lag, deadbeat, pole placement and PID design are covered. Prerequisite: RS460.

RS480 Control Systems and Automation

(3,0) 3

Introduction to the analysis of linear feedback control systems. Analysis of electrical, mechanical and electro-mechanical systems. Study of system stability and output response. Topics in automation include: analysis of automated flow lines, automated assembly systems and group technology. Prerequisites: RS280, RS281, MA143 with a grade of C or better, MT225, and ET175.

RS481 Control Systems and Automation Lab

(0,3) 1

Laboratory work in control systems will involve the study of position and velocity feedback servo controlled systems. Laboratory work in automation will focus on programming Fanuc robots using the Karel programming language. Industry-like applications and system integration projects will be assigned. Lab work in automation will also include the application of a discrete-event simulation software package to study manufacturing systems. Prerequisite: EG265 with a grade of C or better. Corequisite: RS480.

RS482 Automation and Simulation Lab

(0,3) 1

Laboratory work in automation will focus on programming Fanuc robots using the Karel programming language. Industry-like applications and system integration projects will be assigned. Lab work in simulation will include the introduction to a discrete-event manufacturing simulation software package. Several manufacturing systems will be modeled, verified, validated and optimized using the simulation software package. Prerequisite: RS480.

STUDENT SERVICES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

SA090 Basic College Reading Skills

(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. This course is required of those students who score at 14 or below in the reading ACT or the equivalent on the college Placement Test. Students placed in this class must successfully complete both SA090 and SA091 and pass the proficiency test at the end of SA091 in order to meet reading proficiency. Credit in this course does not apply toward graduation. Corequisite: SA100 or specified seminars.

SA091 Intermediate College Reading Skills

(2,2) 3

This course is a sequel to SA090 for those students who need additional work to meet the minimal reading proficiency requirement or as an entry-level class for those with higher reading skills. 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. Students placed in this class must successfully complete SA091 and pass the proficiency test at the end of the class in order to meet reading proficiency. Credit in this course does not apply toward graduation. Prerequisite: SA090 or Reading ACT of 15 to 18 or equivalent.

Prerequisite or corequisite: SA100 or UN101 or specified seminars.

SA100 University Success Strategies

(1,0) 1

Based on assessment of student inventories, students are provided the opportunity to improve their study skills, methods of time management, modes of memorization, note-taking techniques, and university examination preparation. Emphasis is placed on making the transition to university life by focusing on various academic strategies and exposing students to basic information on LSSU programs, policies and procedures.

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.

SA106 Advanced College and Professional Reading

(3,0) 3

Emphasis will be placed on practical application of critical reading and learning strategies toward advanced college textbook and professional material. Students will research, analyze and evaluate relevant topics to enhance knowledge within individually declared majors. A variety of techniques will be used to improve comprehension and critical thinking. Prerequisite: satisfactory completion of SA091 or ACT Reading score of 19. Corequisites: SA107 and LS101.

SA107 Improving Reading Speed and Vocabulary Laboratory

(0,2) 1

Open to all student desiring to improve their levels of speed and vocabulary. Classes will begin the fourth week of the semester and run for seven to nine weeks, until a total of 28 hours have been successfully completed. Appropriate computer software will be utilized, with individualized instruction given as needed. May be repeated for a maximum of three credits.

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. Prerequisites: 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 perceptual 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.

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.

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. Prerequisite: SD101.

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.

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.

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.

SD325 Organizational Communication
(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.

SD333 Studies in the Drama: The Genre and Theater in Context
(3,0) 3

Students will examine major plays in the context of theater and literary history from the beginning to the present, including European, British and American development. Prerequisite: EN180.

SD416 Communication in 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 and Ecology
(3,0) 3

Study of the basic issue of the world's population increase and distribution in relation to natural resources, standards of living, political systems, changes in physical and cultural environments.

SO238 Social Psychology
(3,2) 4

This course examines the social nature of humans, exploring both the influence of social structures upon behavior and the process by which people create social structures; explains symbolic interactionist theory; and introduces qualitative research methods which are applied in a field study conducted by the student. Prerequisite: SO101.

SO242 Sociology of Sex
(3,0) 3

Socio-psychological study of the impact of human sexuality upon human behavior.

SO299 Inuit Art and Culture
(3,0) 3

An examination of Inuit art and culture in the prehistoric, historic and contemporary periods.

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: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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, SO304.

SO304 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.

SO308 The Failure of Liberalism
(3,0) 3

A study of the impact of liberalism on issues such as education, poverty and crime. The course will focus on the United States.

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 Addiction
(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. 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.

SO401 Sociological Research I
(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: SO202 and SO303.

SO402 Sociological Research II
(3,0) 3

In the course, students completing a more extensive research project will complete and present the project which they initiated in SO401. Prerequisites: SO401.

SO405 Seminar: Current Sociological Issues
(3,0) 3

Contemporary issues in sociology, to vary from year to year. Extensive reading, writing, and discussion expected. Prerequisites: Junior standing and 12 hours in sociology. This course may be repeated when content varies.

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. May be repeated to a total of six credits. Prerequisite: Permission of instructor.

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) Fall 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) Spring 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) (on demand) 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) Fall 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) Spring 4

Conducted as much as possible in Spanish with the primary aim of dealing fluently with basic conversation situations. Prerequisite: SP261 or equivalent.

SP301 Study in Mexico
(12,0) Spring 12

Students admitted by the departmental faculty will take a variety of classes at an accredited institution in a Spanish-speaking country. Students will spend at least 30 hours per week in class. They will also be required to visit sites for archaeological, historical and cultural importance. The students' work and progress will be monitored and evaluated by the LSSU academic department in cooperation with the foreign institution and LSSU's Department of International Studies. Prerequisite: permission of instructor.

SP302 Study in Mexico
(16,0) Spring 16

Students admitted by the departmental faculty will take a variety of classes in an accredited institution in a Spanish-speaking country. Students will spend at least 30 hours per week in class. They will spend an additional eight hours in structured activities provided by the school. They will also be required to visit for archaeological, historical and cultural importance. The students' work and progress will be monitored and evaluated by the LSSU academic department in cooperation with the foreign institution and LSSU's Department of International Studies. Prerequisite: permission of instructor.

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.

SP361 Advanced Spanish I
(4,1) Fall 4

Acquisition of advanced skills in composition, grammar, reading and conversation, using media and readings related to the Hispanic world. Prerequisite: SP262 or equivalent.

SP362 Advanced Spanish II
(4,1) Spring 4

A continuation of SP361. Prerequisite: SP361 or equivalent.

SP365 Directed Study
(1,4) (on demand) 1-4

Individual or small-group study of Hispanic topics relevant to the student's major academic interest. Prerequisite: SP362. This directed study course may not be repeated.

SKILL TRADES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

STBL101 through STBL108
(8 sections)

Skill Trades Bricklayer Apprenticeship Training
(4,40) 5

Classroom instruction and on-the-job training will produce qualified personnel for skilled trades operational fields. Over four (4) years, bricklayer apprentices will attend 610 hours of classroom instruction along with an additional 4500 hours of on-the-job training. Topics of instruction vary with the particular skill trade. There are eight options for specialization within this trade. The objective is completion of eight (8) units — STBL101 to STBL108 — over four (4) years for a total of 40 credit hours.

STCP101 through STCP108
(8 sections)

Skill Trades Carpentry Apprenticeship Training
(4,40) 5

Classroom instruction and on-the-job training will produce qualified personnel for skilled trades operational fields. Over four (4) years, carpentry apprentices will attend 768 hours of classroom instruction along with an additional 6000 hours of on-the-job training. Topics of instruction vary with the particular skilled trade. The objective is completion of eight (8) units — STCP101 to STCP108 — over four (4) years for a total of 40 credit hours.

STEL101 through STEL108
(8 sections)

Skill Trades Electrical Apprenticeship Training
(4,40) 5

Classroom instruction and on-the-job training will produce qualified personnel for skilled trades operational fields. Over five (5) years, electrical apprentices will attend 960 hours of classroom instruction along with 8000 hours of on-the-job training. Topics of instruction vary with the particular skilled trade. The objective is completion of ten (10) units — STEL101- STEL108 — over five years for a total of 40 credit hours.

STPR101 through STPR108
(8 sections)

Skill Trades Pipefitters, Refrigeration and Air Conditioning Apprenticeship Training
(4,40) 5

Classroom instruction and on-the-job training to produce qualified personnel for skilled trades operational fields. Over five (5) years, pipefitter apprentices will attend 350 clock hours of lecture with an addition 413 hours (626 x 2/3) of on-the-job training for a total of 763 hours of instruction. Refrigeration/air conditioning apprentices

will attend 738 clock hours of lecture with an additional 157 hours (238 x 2/3) of on-the-job training for a total of 895 hours of instruction. Topics of instruction vary with the particular skilled trade. The objective is completion of ten (10) units — STPR101 to STPR108 — over five (5) years for a total of 40 credit hours.

STSE101 through STSE108
(8 sections)

Skill Trades Stationary Engineers Apprenticeship Training
(4,40) 5

Classroom instruction and on-the-job training to produce qualified personnel for skilled trades operational fields. Over four (4) years, apprentices attend 1,144 clock hours of instruction and a minimum of 7000 hours of on-the-job training. Each year is comprised of 44 weeks of instruction with classes meeting every week. Topics of instruction vary with the particular skilled trade. The objective is completion of eight (8) units — STSE101 to STSE108 — over four (4) years for a total of 40 credit hours.

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 minors. Prerequisite: Permission of instructor. Also listed as HM250.

SW291 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: PY201. Also listed as PY291.

SW301 Alternative Dispute Resolution and Conflict Management
(3,0) 3

This course explores non-judicial avenues of dispute or conflict resolution such as negotiation, mediation, arbitration, as well as court-annexed alternative dispute resolution mechanisms. The procedural aspects, key elements, ethical considerations and practical applications of alternative dispute resolution are discussed as part of the dispute resolution landscape. The course will also include dispute resolution and conflict management simulations and case studies. Prerequisite: LA202 or junior standing. Also listed as LA301.

SW305 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. Prerequisites: HS230 and NA230. Also listed as LA305/NA305.

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. 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. 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.)

SW391 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. Also listed as PY391.

SW480 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. Also listed as HM480.

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, angular measurement and elevations. Use of transit and level, land description, traverse, construction and earth work calculations.

TC105 Construction III

(2,2) 3

The study and applications of concrete materials. The laboratory will consist of material testing procedures used in the construction industry and according to ASTM procedures. Prerequisite: TC101.

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. Prerequisite: None.

TC111 Small Engine Mechanics

(1,2) 2

Practical study of the operation of small gas engines including: disassembly, cleaning, specing-out, assembly and trouble shooting.

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.

TC121 Construction Documents

(4,0) 4

This course involves the study and applications of contract documents and specifications currently used in the construction industry. Prerequisite: None.

TC125 Construction Estimating

(3,2) 4

The determination of material quantities and construction cost. A construction project will have quantity surveying techniques and bidding procedures applied. Prerequisite: TC101. Corequisite: TC102.

TC132 Construction Sketching and Drawing

(2,3) 3

Free hand and computer-aided drafting (CAD) of orthographic and pictorial representations to include the study and development of architectural working drawing, plan views, elevations, details and schedules.

TC135 Assembly Drawing

(2,2) 3

The study and development of drawings of component assemblies. CAD is used to detail components specific to major areas of concentrations (mechanical and construction related).

TC140 Outdoor Construction/Landscaping

(2,3) 3

This course involves the study and application of the safe use of hand and power tools to construct outdoor structures and landscaping. Prerequisites: none.

TC191 Technical Classroom Internship

4

A classroom internship for all associate of applied science majors. This course may be repeated for a total of eight credits. Internship credits may not be applied to other University programs as electives.

TC192 Technical On-Site Internship

2-6

An on-site internship for all students in the associate of applied science programs. May be repeated for a total of 10 credits. Internship credits may not be applied to other University programs.

TC210 Graphical Problem Solving

(1,3) 2

An introduction to technical drawing, machine tool, construction and mathematics using graphical problem-solving techniques. Prerequisite: TC118.

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 about schooling in order to

understand the multiple roles of teachers, characteristics of effective teaching practice, and the roles of school in society. Human development (physical, emotional and cognitive) is studied in terms of teaching and learning. Fieldwork required.

TE250 Student Diversity and Schools

(3,0) 3

This is a study of the forms of diversity found among students and how these differences affect students' participation in school. History and philosophy of American schools are also studied as are the legal responsibilities and rights of teachers and schools. Students study cooperative learning, questioning techniques, make school visits and plan and teach a short, engaging lesson. Fieldwork required. Prerequisite: sophomore standing and TE150 or concurrent enrollment in TE150.

TE301 Learning Theory and Teaching Practice

(4,0) 4

A study of contemporary theories of human learning: how they are generated, researched and applied in teaching practices. Emphasis is placed on analyzing the advantages and disadvantages of various approaches to teaching and learning and the decisions which teachers make in applying theory to diverse classroom situations. Includes extensive classroom observations in K-12 schools. Fieldwork required. Prerequisite: TE150, TE250 and admission to teacher education program.

TE330 Reading in the Elementary Classroom

(3,0) 3

Study of reading as a process of constructing meaning through dynamic, interaction among reader, the text, and the context of the reading situation. Includes objectives, content, materials, organization and methods of teaching reading in the elementary school. Fieldwork required. Prerequisites: TE150, TE250 and admission to the teacher education program. Pre- or corequisite TE301.

TE410 Corrective Reading in the Classroom

(3,0) 3

Study of classroom methods for the diagnosis of students' reading strengths and weaknesses. Planning and implementing corrective and remedial interventions based on diagnosis. Fieldwork required. Prerequisites: TE150, TE250, TE301, TE330 and admission to the teacher education program.

TE411 Elementary Language Arts and Methods Across the Curriculum

(3,0) 3

A study of general strategies and methodologies to facilitate effective learning including the use of language arts as a vehicle for integrated curriculum. Classroom management and organization for productive learning communities are also studied. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301, TE330 and admission to teacher education program.

TE420 Math Methods for Elementary Teachers**(2,0) 2**

A study of strategies and methodologies to facilitate effective mathematics instruction. Students learn to plan and present mathematics lessons and units using contemporary methods. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to teacher education program.

TE421 Science Methods for Elementary Teachers**(2,0) 2**

A study of strategies and methodologies to facilitate effective science instruction. Students learn to plan and present science lessons and units using contemporary methods. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to the teacher education program.

TE422 Social Studies Methods for Elementary Teachers**(2,0) 2**

A study of strategies and methodologies to facilitate effective social studies instruction. Students learn to plan and present social studies lessons and units using contemporary methods. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to the teacher education program.

TE430 General Methods for Secondary Teachers**(3,0) 3**

A study of strategies and methodologies to facilitate learning at the secondary level including classroom management and organization for productive learning communities. The multiple roles of the teacher in the secondary classroom are examined including participant, colleague, researcher, reflective practitioner, accountable professional, counselor and mentor. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to the teacher education program.

TE431 The Secondary Learner**(3,0) 3**

A study of the dilemmas of adolescents as they affect students in secondary schools. The course focuses on the special needs and sensitivities of adolescents and implications for instruction and classroom management. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to the teacher education program.

TE440 Reading in the Content Area**(3,0) 3**

A study of reading methods appropriate to use in secondary classrooms. Includes formal and informal assessment procedures for determining students' abilities and the accompanying strategies to enhance content area comprehension and concept development. Students use

national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to the teacher education program.

TE441 Language Arts Methods for Secondary Teachers**(3,0) 3**

Curriculum, objectives, content, materials, organization, methods and assessment of core subject matter to diverse learners. Includes integrated technology, laboratory and field experiences. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisite: TE150, TE250, TE301 and admission to the teacher education program.

TE442 Math Methods for Secondary Teachers**(3,0) 3**

Curriculum, objectives, content, materials, organization, methods and assessment of teaching mathematics to diverse secondary learners. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required.

TE443 Science Methods for Secondary Teachers**(3,0) 3**

Curriculum, objectives, content, materials, organization, methods and assessment of teaching science to diverse learners. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to teacher education program.

TE444 Social Studies Methods for Secondary Teachers**(3,0) 3**

Curriculum, objectives, content, materials, organization, methods and assessment of teaching social studies to diverse secondary learners. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to teacher education program.

TE445 Teaching Computer Science in the Secondary Classroom**(3,0) 3**

Techniques, materials and models for computer science teachers. Classroom and instructional management. Hardware and software evaluation and selection. Computer programming, including a team software development project. Web pages as an educational resource. Legal, ethical, social, economic and personal issues. Prerequisites: CS101 or CS103, CS201, TE150, TE250, TE301, and admission to the teacher education program.

TE446 Business Education Methods for Secondary Teachers**(3,0) 3**

A study of strategies and methodologies to facilitate effective business course instruction.

Students learn to plan and present office cluster, accounting, marketing and computer software lessons and units using contemporary methods. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: TE150, TE250, TE301 and admission to the teacher education program.

TE490 Research Topics in Education**(1-4) 1-4**

Individual study under supervision of teacher education faculty member. May be repeated to a maximum of four credits. Prerequisites: admission to the teacher education program, senior status and permission of instructor.

TE491 Internship in Teaching Diverse Learners I**6**

Directed and evaluated internship in heterogeneous classrooms. Teaching worthwhile content to students with varied learning needs. Theoretical and field-based explorations of common teaching dilemmas. Student will spend at least 25 clock hours weekly with a teacher in a school for field teaching experience. Prerequisites: successful completion of baccalaureate degree and all previous TE courses and field experiences. Permission and availability of participating schools. Co-requisites: TE601 and TE602. May be repeated once.

TE492 Internship in Teaching Diverse Learners II**6**

Continuing internship in heterogeneous classrooms at selected schools. Increased emphasis on independent teaching. Maintaining classroom communities that ensure equitable access to important knowledge and skills. Assessing academic and social outcomes. Student will spend at least 25 clock hours weekly with a teacher in a school for field teaching experience. Prerequisites: completion of TE491 and permission and availability of participating schools. Corequisites: TE603 and TE604. May be repeated once.

TE601 Professional Roles and Teaching Practices I**(3,0) 3**

Examination of pedagogical roles and practices in terms of teacher behaviors, learning communities, school, culture and society. Review and reform of one's own practice through use of identification of problems, data analysis and strategic planning. Prerequisite: baccalaureate degree. Corequisites: TE602 and TE491 for students enrolled in the certification program.

TE602 Reflection and Inquiry in Teaching Practice I**(3,0) 3**

Qualitative and quantitative research methods on teaching and learning. Criteria for judging the validity and applicability of research-based knowledge. Framing educational problems worthy of inquiry. Designing and assessing studies of teaching practice. Three class contact hours of lecture, discussion, clinical work. Prerequisite: TE402. Corequisites: TE491 and TE601. May be repeated once.

TE603 Professional Roles and Teaching Practices II

(3,0) 3

A critical examination of the multi-dimensional aspects of teacher roles, pedagogical ethics, philosophical applications and influences on schools and learning communities. Corequisites: TE604 and TE492 for students enrolled in the certification program.

TE604 Reflection and Inquiry in Teaching Practice II

(3,0) 3

Collecting, analyzing and interpreting data on teaching, learning and education policy — largely through action research in the classroom. Dilemmas surrounding research on practice. Appraising and reporting results of inquiry. Three class contact hours of lecture, discussion and clinical. Prerequisites: TE491, TE601 and TE602. Corequisites: TE492 and TE603. May be repeated once.

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.

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.

Board of 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.



*Mr. Dean Altobelli
Escanaba
Term expires: 1/27/08*



*Mr. Gary Benjamin
Iron Mountain
Term expires: 1/27/04*



*Ms. Meg Brown
Mackinac Island
Term expires: 1/27/06*



*Mrs. Barbara Cliff
Birmingham
Term expires: 1/27/10*



*Mrs. Doris Galvin
Chelsea
Term expires: 1/27/04*



*Mr. Charles Schmidt
Bloomfield Hills
Term expires: 1/27/10*



*Mr. Devereaux Trepp
Traverse City
Term expires: 1/27/06*



*Dr. Gary Wolfram
Hillsdale
Term expires: 1/27/08*



*Dr. Betty Youngblood, President
(ex officio member)
Sault Ste. Marie*

Distinguished Teachers

The Distinguished 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	1980-81	Edeltraute Vialpando	1991-92	James Madden
1963-64	C. Ernest Kemp	1981-82	Timothy Sawyer	1992-93	Sally Childs
1971-72	Margaret Howe	1982-83	Paul Wilson	1993-94	Carol Campagna
1972-73	David Blair	1983-84	Michael Flynn	1994-95	Madan Saluja
1973-74	Gerald Samson	1984-85	Margaret Malmberg	1995-96	Carole Connaughton
1974-75	Thomas Mickewich	1985-86	Robert Money	1996-97	Paul Duesing
1975-76	Arthur Duwe	1986-87	Rosa Kavanaugh	1997-98	Gary Johnson
1976-77	Thomas Kelly	1987-88	Dimitri Diliiani	1998-99	John Erkkila
1977-78	Larry Schneider	1988-89	David Behmer	1999-2000	Karl J. Sherman
1978-79	Steven Person	1989-90	Susan Ratwik	2000-2001	Kevin Schmaltz
1979-80	Bernard Arbic	1990-91	William Haag	2001-2002	Barbara Keller

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.

Year	Administrative/Professional	Educational Support Personnel
1990-91	Conrad A. Schmitigal	M. Kathy Person
1991-92	Beverly E. White	Trinda M. Pontus
1992-93	Margaret E. Olson	Jeanne E. Thompson
1993-94	Susan K. Camp	Terri D. Peller
1994-95	Robbin S. Manor	Donna M. Payment
1995-96	Karen Shackleton	Judy V. Jones
1996-97	Cheri Castner	Pauline Killips
1997-98	Roger Greil	Patricia Roe
1998-99	Suzette Olson	Donald S. Jones
1999-2000	Kahler Schuemann	Janine Murray
2000-2001	Kari Jastorff	Theresa Weaver
2001-2002	Holly Johnson	Laurie DeNeve-Ewing

Faculty

Allan, Thomas A., Associate Professor, Biology; BS 1973, Central Michigan University; MS 1978, Michigan Technological University; PhD 1984, University of Maine

Amaro, Charlotte A., Assistant Professor, Arts and Letters; AA 1988, Delta College; BA 1991, Saginaw Valley State University; MA 1993, Central Michigan University; PhD 2000, Wayne State University

Andary, Carol S., Associate Professor; Coordinator of Legal Assistant Studies, Social Sciences; BS 1977, Western Michigan University; JD 1980, Wayne State University

Anleitner, Donna M., Assistant Professor, Nursing; BSN 1971, Indiana State University; MSN 1976, Northern Illinois State University

Attie, Paulette Z., Assistant Professor, Education; BS 1972, MEd 1987, PhD 1990, University of Toledo

Back, Richard C., Associate Professor; Director of Aquatic Research Laboratory, Biology; BS 1982, Syracuse University; MS 1985, Clemson University; PhD 1993, University of Wisconsin-Milwaukee.

Balfantz, Gary L., Associate Professor, Arts and Letters; BEd 1973, Southeastern Louisiana University; MA 1975, Western Kentucky University; PhD 1987, Wayne State University

Barakat, Nael, Assistant Professor, Engineering and Technology; BSME 1989, Kuwait University; MASc 1996, Concordia University, Canada; PhD 1999, McMaster University, Canada

Baumann, David C., Associate Professor, Engineering and Technology; BS 1987, MS 1989, PhD 1991, MS 1992, University of Wisconsin - Madison

Beckon, Susan E., Assistant Professor, Business and Economics; BA 1985, MBA 1996, Michigan State University

Boger, Thomas M., Associate Professor, Mathematics and Computer Science; BS 1973, MS 1974, Michigan State University

Borowiak, Darold E., Instructor, Nursing; AD 1981, North Central Michigan College; BS 2000, Lake Superior State University

Brown, Lewis M., Professor, Chair of Department of Geology and Physics, Geology and Physics; BA 1965, Cornell College; MS 1967, University of Iowa; PhD 1973, University of New Mexico

Carroll, Matthew C., Assistant Professor, Engineering and Technology; MS 1982, PhD 1986; University of Illinois

Castner, David H., Associate Professor, Chair of Counseling and Testing Services, Counseling Center; BS 1972, MS 1974, University of Wisconsin-Stout; Licensed Professional Counselor

Childs, Sally A., Professor, Chair of Department of Recreation Studies and Exercise Science, Recreation Studies and Exercise Science; BS 1971, Eastern Michigan University; MS 1978, Northern Michigan University; PhD 1986, Ohio State University

Conboy, Richard T., Professor, Social Sciences; BA 1967, MPA 1969, University of Dayton; PhD 1984, The American University

Crandall, Richard C., Professor, Social Sciences; BS 1967, MA 1969, Central Michigan University; PhD 1974, University of Michigan

Delaney-Lehman, Maureen J., Associate Professor/Librarian, Library; BM 1975, Western Michigan University; MS 1980, Michigan State University; MLS 1988, University of Kentucky

Denger, George H., Associate Professor, Arts and Letters; BS 1980, MA 1986, Eastern Michigan University; PhD 1998, Wayne State University

Devaprasad, James, Associate Professor, Chair of Department of Manufacturing Engineering Technology, Engineering and Technology; BS 1983, University of Madras, India; MS 1986, University of New Mexico

Dobbertin, Gerald F., Assistant Professor, Social Sciences; BS 1967, Wayne State University; MA 1973, Central Michigan University; PhD 1981, Michigan State University

Dobbertin, Leslie A., Professor, Chair of Department of Social Sciences, Social Sciences; BA 1965, Central Michigan University; MA 1972, Iowa State University; PhD 1989, Michigan State University

Dorrity, Daniel T., Professor, Chair of Department of Humanities and History, Arts and Letters; BA 1966, MA 1967, Wayne State University; PhD 1973, University of Michigan

Doughty, Amie A., Assistant Professor, Arts and Letters; BA 1992, Ripon College; MA 1994, Indiana State University; PhD 2000, University of Oklahoma

Doyle, Michael, Associate Professor, Biology; BS 1982, Evergreen State College; MS 1985, Southern Illinois University; PhD 1990, Claremont Graduate School

Duesing, Paul R., Associate Professor, Engineering and Technology; BSME 1971, MSME 1973, University of Michigan; licensed professional engineer for Michigan and Ohio

Duesing, Sherilyn R., Assistant Professor, Mathematics and Computer Science; AS 1971, North Central Michigan College; BS 1976, Central Michigan University; MS 1998, Northern Michigan University

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Mr. Roger Land

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Mr. Maurice Walworth

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Geology and Physics
Dr. Lewis Brown

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Mr. Mark Terwilliger

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Dr. Kevin Schmaltz

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Shibley, John R., Photographer/Staff Writer, Public Relations

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Thompson, William G., Manager of Ice Arena and Grounds, Physical Plant

Waligora, Richard J., Director, Physical Plant; BS 1988, MS 1990, Michigan Technological University

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Bugbee, Thomas R., Vice President for Student Affairs/Secretary to the Board of Trustees; BA 1973, Michigan State University; MA 1974, Eastern Michigan University

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University Calendar

2002-2003

Fall Semester • 2002

Classes Begin	SEPTEMBER 4, Wednesday, 8 a.m.
Final Day to Add Classes	11, Wednesday, 5 p.m.
Canadian Thanksgiving	OCTOBER 7, Monday
Final Day to Drop Classes	29, Tuesday, 5 p.m.
Thanksgiving Recess	NOVEMBER 26, Tuesday, 10 p.m.
Classes Resume	DECEMBER 2, Monday
Classes End	13, Friday
Final Examinations	16-20, Monday-Friday
Semester Ends	20, Friday, 6 p.m.

Spring Semester • 2003

Instruction Begins	JANUARY 13, Monday, 8 a.m.
Final Day to Add Classes	20, Monday, 5 p.m.
Spring Break Begins	FEBRUARY 28, Friday, 10 p.m.
Classes Resume	MARCH 10, Monday, 8 a.m.
Final Day to Drop Classes	14, Friday, 5 p.m.
Classes End	APRIL 25, Friday
Final Examinations	28-30, Monday-Wednesday
Final Examinations	MAY 1-2, Thursday-Friday
Semester Ends	2, Friday, 6 p.m.
Commencement	3, Saturday

Summer Semester • 2003

Instruction Begins for 6- and 12-Week Classes	MAY 12, Monday
Memorial Day (no classes)	26, Monday
Instruction Ends for First 6-Week Classes	JUNE 23, Monday
Instruction Begins for Second 6-Week Classes	24, Tuesday
Independence Day (no classes)	JULY 4, Friday
Classes End for Second 6-Week and 12-Week Classes	AUGUST 5, Tuesday
Semester Ends	5, Tuesday

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