

Lake Superior State University Catalog



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1998-2000

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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.

About this Catalog...

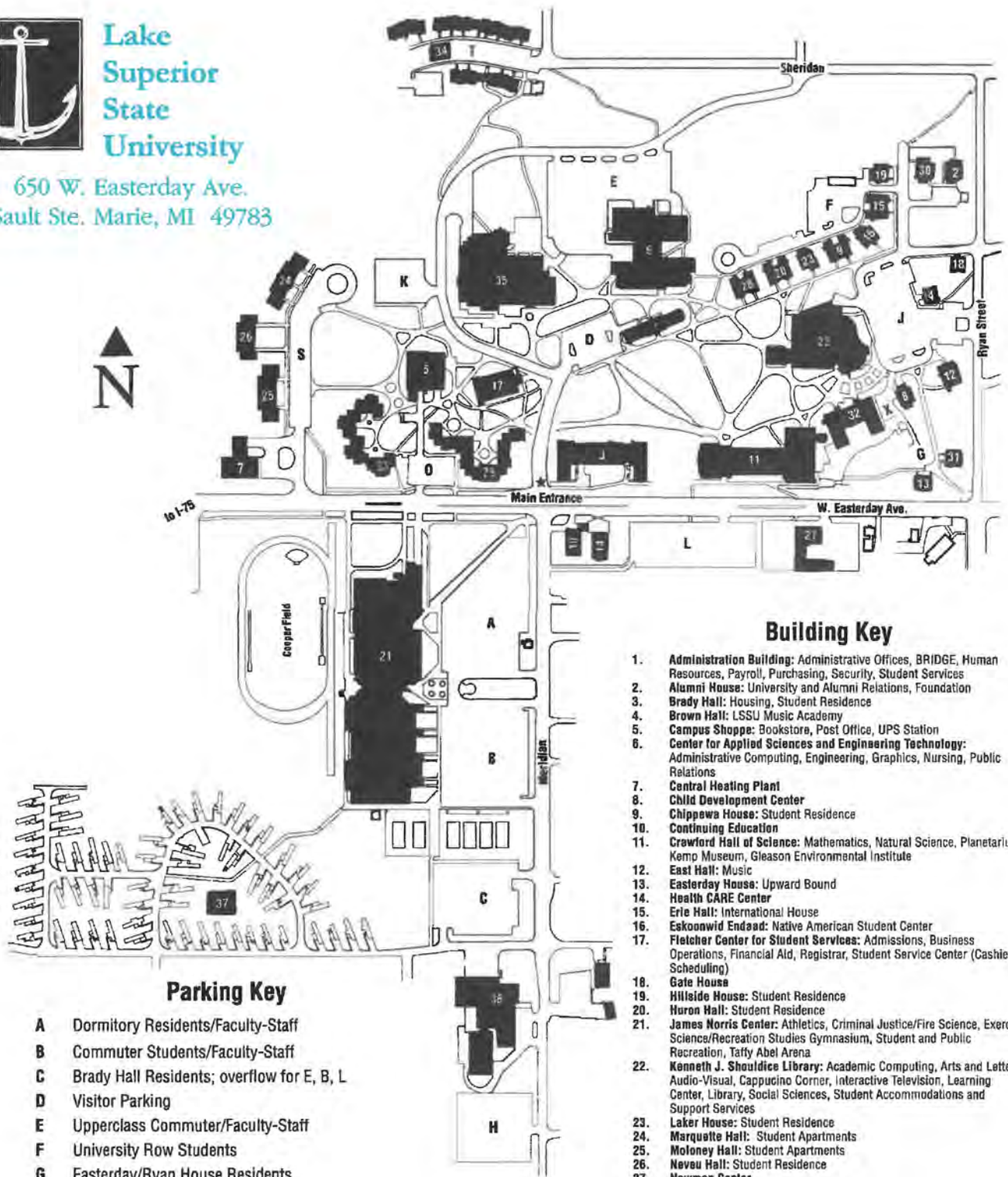
The Lake Superior State University **Catalog** does not constitute a contract between the University and its students on either a collective or individual basis. Changes sometimes occur after the **Catalog** has been printed. Lake Superior State University does not assume a contractual obligation with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

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



Lake Superior State University

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



Parking Key

- A Dormitory Residents/Faculty-Staff
- B Commuter Students/Faculty-Staff
- C Brady Hall Residents; overflow for E, B, L
- D Visitor Parking
- E Upperclass Commuter/Faculty-Staff
- F University Row Students
- G Easterday/Ryan House Residents
- H Overflow for A, C, F, G, S, T
- J Faculty/Staff
- K Moloney, Neveu, Marquette and Townhouse Residents; Visitor and Campus Shoppe
- L Upperclass Commuter/Faculty-Staff
- O Dormitory Residents
- S Moloney, Neveu and Marquette Hall Residents
- T Townhouse Residents
- X 30-Minute Parking

NO PARKING ON ANY UNIVERSITY DRIVE.

Building Key

1. **Administration Building:** Administrative Offices, BRIDGE, Human Resources, Payroll, Purchasing, Security, Student Services
2. **Alumni House:** University and Alumni Relations, Foundation
3. **Brady Hall:** Housing, Student Residence
4. **Brown Hall:** LSSU Music Academy
5. **Campus Shoppe:** Bookstore, Post Office, UPS Station
6. **Center for Applied Sciences and Engineering Technology:** Administrative Computing, Engineering, Graphics, Nursing, Public Relations
7. **Central Heating Plant**
8. **Child Development Center**
9. **Chippewa House:** Student Residence
10. **Continuing Education**
11. **Crawford Hall of Science:** Mathematics, Natural Science, Planetarium, Kemp Museum, Gleason Environmental Institute
12. **East Hall:** Music
13. **Easterday House:** Upward Bound
14. **Health CARE Center**
15. **Erie Hall:** International House
16. **Eskoonwid Endead:** Native American Student Center
17. **Fletcher Center for Student Services:** Admissions, Business Operations, Financial Aid, Registrar, Student Service Center (Cashier, Scheduling)
18. **Gate House**
19. **Hillside House:** 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, 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, Center for Career and Employment Services/Cooperative Education Services, Counseling and Testing, Education, Elementary and Secondary Education faculty, EUPISD Math/Science Center, Graduate and International Programs
33. **The Village:** Senter, Chelberg, Kemp and Youngs Houses — Student Residence
34. **Townhouses:** Student Residence
35. **Walker Cislak Student and Conference Center:** Campus Style Shoppe, Catering, *Compass* (student newspaper), Conference Rooms, Corner Pocket, Food Services, Galley, ID Information, Quarterdeck, Student Lounge and Game Room
36. **Leno A. Pianosi Maintenance Center**
37. **Blair-Hastings Mobile Home Park**

Welcome to a better tomorrow ...



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

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

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

Superior describes our University as a whole. Outstanding academic programs and professionals who are here to teach provide the foundation for your career. Excellent student life programs, great people, and a tremendous athletic program which includes national championship-caliber hockey, make the Lake State experience truly special. We have produced some of the best doctors, lawyers, teachers and other professionals in the land.

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

Robert D. Arbuckle

Robert D. Arbuckle, President

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
 - Council on Medical Education and Hospitals of the American Medical Association.
 - Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202 - Telephone: (410) 347-7700, in manufacturing engineering technology.
 - 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 LSSC

in 1970. University status was granted in 1987 to the state's smallest public institution of higher learning. Enrollment has grown from the original class of 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 (101,000) allows for an international flavor abounding with the opportunities of a city, and the safety and comfort of a small town.



Expectations for Student Learning

Lake Superior State University utilizes a Student Academic Achievement Plan developed by the faculty 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.



Programs

Master's degree

Business Administration

Post-Baccalaureate degree

Legal Assistant Studies

Bachelor's degrees (four-year programs)

Accounting

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

Biology

*Botany • Ecology • General
Pre-Professional
Pre-Dentistry • Pre-Medicine • Pre-Optometry
Pre-Pharmacy • Pre-Veterinary Medicine*

Zoology

Business Administration

Marketing • Management

Clinical Laboratory Science

Computer and Mathematical Science

Computer Engineering

Computer Science

Criminal Justice

*Corrections • Criminalistics (MLEOTC certified)
Generalist • Law Enforcement (MLEOTC certified)
Loss Control • Public Safety (MLEOTC certified)*

Early Childhood Education

Electrical Engineering

Digital Systems • Robotics and Automation • Electrical-Mechanical

Elementary Education*

*Biology • English Language and Literature • Geology
History • Mathematics • Social Science • Sociology*

Engineering Management

English Language and Literature

Environmental Chemistry

Environmental Engineering Technology

Environmental Science

Exercise Science

Athletic Training

Finance and Economics

Fine Arts Studies

Fire Science

Engineering Technology • Generalist • Hazardous Materials

Fisheries and Wildlife Management

Fisheries Management • Wildlife Management

Geology

Environmental Geology

History

Human Services

Individualized Studies

Legal Assistant Studies

*Legal Administration • Criminal Law • Personal Injury
Labor Law • Legislative/Constitutional Law*

Manufacturing Engineering Technology

Robotics and Automation

Mathematics

Actuarial and Business Applications

Mechanical Engineering

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 • English Language and Literature
Environmental Chemistry • Environmental Science*

Geology • History • Mathematics

Social Science • Sociology

Social Science

Sociology

Therapeutic Recreation

Associate's degrees

(two-year programs)

Business Administration

Chemistry

Computer Science

Construction Technology

Criminal Justice

Corrections • Law Enforcement

Early Childhood Education

Fire Science

General Engineering

General Engineering Technology

Health Fitness Specialist

Internet Network Specialist

Legal Assistant Studies

Liberal Arts

Machine Tool Technology

Manufacturing Engineering Technology

Natural Resources Technology

Office Administration

Personal Computer Specialist

Substance Abuse Prevention and Treatment

Technical Accounting

Telecommunications Engineering Technology

Certificates (one-year programs)

Information Processing

Personal Computer Specialist

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

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.

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 Admissions Office. It must bear the seal of the institution and signature or stamp of school official.

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

Academic Policies

Student Classifications

0 to 25 credits = freshman

26 to 55 credits = sophomore

56 to 87 credits = junior

88+ = senior

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!

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 4-, 8-, and 12- week sessions. Starting and ending dates are listed on page 316-317 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 Center for Student Services (CSS). The CSS, Counseling Center and departmental offices have the card and instructions. Curriculum change cards must be filed with CSS 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.

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.

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 to bring up a grade and raise your grade point average (GPA). However, you may not repeat a prerequisite course if you have successfully passed the subsequent course. Again, exceptions may be made by the dean of your college. **Note:** You will not receive extra credits for the repeated class but your GPA will be affected. Only the grade of the last attempt is calculated in your GPA.

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. If a course you wish to add is full, you must get an instructor's signature to schedule the course.

Your add or withdrawal from a course is not officially complete 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 Center for Student Services (CSS) and then get the instructor's signature. Return your Late Add Form to CSS.

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 get approval from both your instructor and the Center for Student Services. 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 opportu-

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
Z Deferred	0
CR Credit	0
NCR No Credit	0

nities 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): To receive an I grade in a course which you can not complete, you must meet with your instructor and work out what you need to complete to obtain a grade. You must make up the work by the date specified by the instructor which must be within a maximum of two semesters in attendance or the incomplete grade becomes a failure. Summer semesters count if you are enrolled for classes during the summer. Your instructor will submit an I Form with the grade sheets and you will receive a copy.

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

Z grade: Deferred grades are given when the course work of a particular course extends beyond a single semester.

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 Center for Student Services.

Dean's List: By completing 12 or more credits a semester with a grade point average of 3.50 or higher, you will earn Dean's List honors which acknowledge outstanding academic achievement.

Academic probation: This is a warning that scholastic perfor-

mance 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

Academic Standing Table

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

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

**Students will not be dismissed for academic deficiencies until they have enrolled in at least 19 semester credits at Lake Superior State University.*

***A cumulative grade point average of 2.00 for all credits carried at 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.*

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 Center for Student Services 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 to receive credit by examination in which you may earn a maximum of 30 credits. An examination grade of 2.00 is required to earn credit. There is a fee required for both CLEP exami-

nation and departmental examinations. The credits earned by examination appear on your transcript as CR. 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, Center for Student Services, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783. Enclose \$5 per request to cover the cost of copying and mailing. Student copy transcripts are issued directly to you. 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 director of the Student Services Center 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

Director of the Student Services Center; Academic (complete and official academic record) Personal, Veterans Affairs; Director of the Student Services Center; 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 Student Services Center as noted above.

Section 8. Disclosure of Restricted Information to University Officials

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

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

the University for the purpose for which the disclosure was made.

Section 9. University Officials

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

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

Section 10. Disclosure of Personally Identifiable Information

A. Prior Consent for Disclosure Required

The University shall obtain the written consent of the student before disclosing personally identifiable information from their education records to third parties other than directory information. Consent is not required where the disclosure is to the student.

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

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

1. a specification of the record to be disclosed.
2. the purpose of the disclosure.

3. the party or class of parties to whom disclosure may be made.
4. a statement granting consent for the release of the information.

B. Prior Consent for Disclosure Not Required

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

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

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

1. to federal and state authorities as provided by the Act or other legal authority.
2. in connection with financial aid for which a student has applied or received; provided that the information may be disclosed only:
 - a. to determine the eligibility for financial aid,
 - b. to determine the amount of aid
 - c. to determine the conditions that will be imposed regarding financial aid, or
 - d. to enforce the terms or conditions of the financial aid.
3. to organizations conducting studies on behalf of educational agencies or institutions for developing, validating, or administering predictive tests, administering student aid programs; and improving instruction; provided that the studies are conducted in a manner which does not permit personal identification of students by persons other than the representatives of the organization. The information

must be destroyed when it is no longer needed for the purpose for which the study was conducted.

4. to accrediting organizations in order to carry out their accrediting functions.
5. to comply with a judicial order or lawfully issued subpoena; provided that Lake Superior State University will make a reasonable effort to notify the student of the order or subpoena in advance of compliance.
6. to appropriate parties in an emergency to protect the health or safety of the student or other individuals.

Section 11. Directory Information

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

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

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

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

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

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

Section 12. Record of Disclosures Required to be Maintained

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

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

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

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

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

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

1. financial records and statements of parents or any information contained therein.
2. confidential letters and statements of recommendation placed in the student record prior to January 1, 1975; provided that such letters and statements were solicited with written assurance of confidentiality or sent and retained with a documented understanding of confidentiality. The documents must be used only for the purposes specifically intended.
3. confidential letters and statements of recommendation and statements for which the student has waived the right to inspection as set forth in Section 16 and placed in a student's file after January 1, 1975 respecting:
 - a. admission, or
 - b. application for employment, or
 - c. receipt of an honor or honorary recognition.
4. those records which are defined not to be education records as set forth in Section 3.

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

Section 14. Request to Amend Educational Records

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

The procedures regarding amendment to a student record are:

1. submission of a written request to amend the record in question to the University office responsible for the content of the record.

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

Section 15. Right to a Hearing

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

Procedure of Hearing

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

1. submit a written request for a hearing to the hearing officer and the director of the Student Services Center.
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.

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 Lake State). 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. Lake State uses an overall grade point average (GPA). The average overall GPA for the 1997 freshman class was 2.88 on a scale of a 4.0. The average ACT composite score was a 20.

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 University College 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 Lake State 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

Admissions 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 Lake State, 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.

D grades are transferred only under the following conditions:

1. a 2.00 or greater cumulative GPA, or
2. being granted unconditional admission as a full-time student.

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

The Admissions 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.

Residency Requirement

There is no limit to the number of transfer credits allowed from other institutions. Bachelor's degree candidates must earn at least 32 of their final 40 credits and at least 50 percent of their departmental required 300/400-level credits in Lake State courses.

Regional center students must earn at least 32 of their final 64 credits and at least 50 percent of their departmental required 300/400-level credits in Lake State courses.

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

University College

Lake Superior State University has a long-term commitment to the academic and personal success of all our students. The University College 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 University College. 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 University College (UC) provides *academic support* for the entire campus. The UC operates the Learning Center (described below) 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 UC oversees the development and operation of academic programs at the one- or two-year level.

Learning Center

The Learning Center, located in the KJS Library, offers academic support services to all enrolled students at LSSU, at all levels of learning (freshman through graduate). Tutoring and supplemental instruction (a.k.a. study sessions) are available for many preparatory, 100- and 200-level courses across the disciplines. The Learning Center's Writing Lab tutors assist you with your writing needs while the math lab tutors help you overcome your math frustrations. Seminars on topics such as time management and study skills are held each semester to allow you to maximize your academic performance. When you visit the Learning Center, you will find more than 30 state-of-the-art computers equipped with tutorial and instructional software for many LSSU courses, as well as

various word processing programs, tutorial video and audio libraries. A book lending library and study space are also available for your use. The friendly staff will be happy to assist you in reaching your academic goals.

Office of Student Support Services and Accommodations (OSASS)

OSASS provides two functions for its students. If you are enrolled in an associate's or certificate-level program, you can contact this office for assistance with coursework or help in selecting a career path. The office provides these supportive services through the Carl Perkins Vocational Education grant.

In addition, students who can verify that they face a disabling condition can receive a wide range of services from OSASS. The staff arrange for specialized testing, note takers, scribes, taped texts and a variety of other auxiliary aides for students with disabilities. Students should note that official verification of a disabling condition must be on file before auxiliary aides and accommodations can be provided. If you do have a disabling condition, or if you think you may have a condition such as a learning disability, please contact OSASS as soon as possible.

Former Students

Former full-time Lake State students who stop taking classes for two semesters or more or attend another college or university (not including summer) must apply for readmission before the semester of re-entry. There is no application fee. If you attended another college since leaving Lake State, you must submit official transcripts and meet Lake State's 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 for all A- and G-level courses. Two grading scales are used when evaluating Ontario secondary school applicants (see table). OAC and A-level courses are considered more demanding and their contents more appropriate preparation for university-level courses. B- and W-level courses are never included in the 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").

Foreign Students (Non-Canadian)

Applicants must satisfy entrance requirements comparable to those of United States students. All credentials written in a language other than English must be accompanied by certified English translations.

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 of the student's educational and living expenses while studying in the United States. Foreign student scholarships are not available, and employment opportunities for foreign students are restricted by government regulations.

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.

Grading Scales for Evaluation

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

Limited English Proficiency

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

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

1. Score 550 or above on the TOEFL administered in most countries. For information regarding this test, write: TOEFL, Box 6151, Princeton, New Jersey, 08541-6151 U.S.A. or any United States Information Service Center;
2. Complete Level 109 at any ELS Language Center located in the United States. For information about ELS Centers, write: ELS Language Centers, 5761 Buckingham Parkway, Culver City, California 90230, USA;
3. Complete two years of study at a school, college or university located in an English-speaking country.

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 Lake State. 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, Lake State 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 a Lake State admissions officer 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, selected students may take specific courses at Lake State. Before you register for any class, be sure you meet the following criteria:

- complete the Dual Enrollment Form (available at the LSSU Student Service Center or your high school guidance office),
- be at least a high school junior,
- enroll in 100- or 200-level courses only; 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.)

2. be enrolled at Lake Superior State University.

Placement Testing

ACT 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 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 Lake State.

Credit by examination

You may earn up to 30 semester-hour credits 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

Advanced Placement Program (AP)

Advanced Placement Exams are administered at high schools each May. Lake State 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 any available testing center, including Lake State's Counseling and Testing Center. Lake State offers CLEP exams every month except December and February. You should take the CLEP tests no later than May in order to have the results sent to our Center for Student Services in time for fall semester. 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

ACT Placement

Mathematics

0-16	=	MA081, 082, 083
17-18	=	MA084, 085, 086
19-21	=	MA092, 110, 207
22-26	=	MA103, 109, 111, 140, 150
27-35	=	MA112, 143, 151

English

0-17	=	EN091
18-25	=	EN110
26+	=	EN110-Honors

Reading

0-18	=	SA090
19-21	=	SA106 recommended
22+	=	OK

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 on this page.

Departmental Exams

Departments may provide their own examinations for certain courses. You must have the written approval of the appropriate department head to take the examination. An application form for credit by exam can be found with the department head. The fee will be equivalent to CLEP exams and you will not be charged tuition for the credits earned. An exami-

nation grade of 2.00 or better is required for credit to be earned. Credit earned by exam is recorded as a grade of *CR* on the student's transcript. Some universities may not accept transfer credit earned by departmental exam.

Health Record

Everyone entering Lake State for the first time should complete a

Health History Questionnaire. The form is mailed to admitted students. These questionnaires are not considered for admission to the University. The information helps the University's Health Service better serve your needs.

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

Credit for Clep General Exams

Test	Score Equiv. Reg.	Course	Credit Hours
Humanities	500	HU Electives	8
Mathematics	500	MA Electives	3
Social Sciences & History	500	SS Electives	8
Natural Science	500	NS Electives	8

Credit for Clep Subject Exams

Test	Essay Required	Required Score	Course Equivalents	Credit Hours
Principles of Accounting	No	47	AC132, 133	8
General Biology	No	52*	BL109, 110, 111	8
General Chemistry	No	47	CH115, 116	9
Introductory Business Law	No	51	MB503	3
Information Systems & Computer Appl.	No	52	CS101	3
Principles of Macroeconomics	No	44	EC201	3
Principles of Microeconomics	No	41	EC202	3
Human Growth and Development	No	45	PY265	3
Freshman College Composition	No	47	EN110	3
American Literature	Yes	46	EN231, 232	6
English Literature	Yes	46	EN233, 234	6
American History I	No	45	HS131	4
History of U.S. II	No	45	HS132	4
Western Civilization I	No	46	HS101	4
Western Civilization II	No	47	HS102	4
College Algebra	No	55	MA111	3
College Algebra-Trigonometry	No	45	MA150	4
Calculus with Elementary Functions	No	46	MA151	4
Principles of Marketing	No	48	MK281	3
Principles of Management	No	47	MN360	3
American Government	No	47	PS110	4
Introductory Psychology	No	47	PY101	4
Introductory Sociology	No	47	SO101, 102	6
College German I & II	No	48	Waive GN141, 142 Credit GN241, 242	8
College-Level Spanish I & II	No	50	Waive SP161, 162 Credit SP261, 262	8
College French I & II	No	43	Waive FR151, 152 Credit FR251	4
College French I & II	No	45	Waive FR151, 152 Credit FR251, 252	8

*based on local norms

Residency Definitions

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

A \$20 fee (United States funds) must accompany each Application for Admission to Lake Superior State University. The fee is non-refundable and does not apply toward tuition or other fees.

Definition of Michigan Residency

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. Such evidence should include, but is not limited to, changes in voter registration, drivers license and vehicle registration.
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. Such evidence could include, but is not limited to, changes in voter registration, drivers license and vehicle registration.
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 director of the Student Service Center. Students may appeal these decisions to the vice-president for Student Programs and Services.
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 freshman student who has at least a 3.00 grade point out of a possible 4.00 and a 24 composite on ACT or in the top one-fifth of their graduating class may register as a resident for tuition purposes.

Any student who is in doubt of residence status should contact the director of the Student Service Center 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 until all amounts due the University are paid or satisfactory arrangements are made with the Business Office.

The director of the Student Service Center will deny registration to anyone who is delinquent in any obligation to the University. Additionally, University services

will not be provided until financial obligations are met. Registration is not complete until fees are paid. A check or draft returned to the University and not honored by the bank constitutes nonpayment and results in cancellation of registration.

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

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

There is no official record for auditing classes.

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

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

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

Withdrawal: Should you need to withdraw from the University, you must complete a Withdrawal Form to initiate a refund. The form is available from the Student Service Center. Authorized refunds apply only to tuition and special course fees. If you are on approved University financial aid, or aid through other agencies that mandate recovery of financial assistance, refunds are in accordance with their requirements. You

should check with the director of Financial Aid for assistance or information. Refunds are made accordingly: During the first six days 100 percent refund on withdrawals. Students withdrawing from all classes between the end of the 100 percent refund period and the first 10 percent of the semester will receive a 90 percent refund. Students withdrawing from all classes between the end of the 90 percent refund period and the 25 percent point of the semester will receive a 50 percent refund. Students withdrawing from all classes between the end of the 50 percent period and the 50 percent point of the semester will receive a 25 percent refund. No refunds are provided for dropping one or two classes.

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

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

Room and Board Applications

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

The exceptions are:

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

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

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

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

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

Financial Aid

Notification of scholarship awards begins November 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, loan, grant, and/or work assistance. Full-time undergraduates take priority in aid awards.

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

You can obtain 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 by completing the financial aid section of the Admissions Application; obtain forms from your high school principal or counselor or write to the Financial Aid Office, Lake Superior State University, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783.

If you are already enrolled, forms are available from the Financial Aid Office.

Scholarship requirements: Incoming freshmen must be in the upper

15 percent of their graduating class, have a 3.40 (or higher) grade point average and ACT score of 26. The recipient of any award must be a full-time student carrying 12 academic hours or more (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.

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

These forms may be obtained from local high school counselors or principals or the LSSU Financial Aid Office. The form must be received by the processor before February 21 (incoming freshmen) or March 21 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 College Work-Study, Federal Supplemental Educational Opportunity Grant, Federal Direct Loans, Federal PLUS Loans, State of Michigan and Institutional Scholarship, Grant, Loan and Work Programs.

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 G.P.A. of 1.93 or higher.

Application of Policy

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

Quantative Standards

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 is terminated after six semesters (assoc.), 12 semesters (four-year degree), and four semesters (master's), or after attempting 150 percent of the credits required for the degree.

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/Summer Semester

Enrolled Credits	Credits to be Earned (75%)
12+	9
11	8
10	7
9	6
8	6
7	6
6	4
5-1	100%

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

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)*

Graduate Students

Fall/Spring/Summer 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.

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

If completion of 1 grades or other record changes warrant a reinstatement, the student must present a written notice from the Registrar/Scheduling Office to the Financial Aid Office by the end of the semester following cancellation of aid.

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 full tuition or higher.*

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

Financial Aid Suspension

No aid will be granted once a student's eligibility is suspended, including but not limited to the Federal Direct Loan, Perkins Student Loan, Federal Direct PLUS Loan, College 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, Native American Tuition Waiver and Institutional Scholarships and Grants.

To remove financial aid suspension status, a student must have attained the minimum cumulative grade point average and credit earned requirements while not receiving financial aid processed through the University. Successful students must then advise the Financial Aid Office in writing that they meet 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 Programs and Services. 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.

Student Rights:

You have the right to know:

1. the available financial aid programs. They are listed in the Financial Aid section of this Catalog.
2. deadlines for submitting applications for each available financial aid program.
3. how financial aid will be distributed, how decisions on that distribution are made and the basis for these decisions. (Contact Financial Aid Office.)
4. how your financial need was determined. This includes how costs for tuition and fees, room and board, travel, books and supplies, personal and miscellaneous expenses, etc., are considered in your budget. (See Award Letter.)
5. what resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need. (Contact Financial Aid Office.)

6. how much of your financial need as determined by the institution has been met. (See Offer of Aid letter.)
7. 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 Office of Student Accommodations and Support Services in room 144 of the KJS Library.
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.)
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:

And finally, you have the right to request:

- 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

Board of Trustees Distinguished Student Scholarship* — Value: \$4000 a year for study in any LSSU degree curriculum. Applicants must be Michigan residents, graduates or near-graduates of properly accredited high schools, have taken the ACT test, and rank in the upper 10 percent of their high school classes. Renewable up to four years.

Board of Trustees Laker USA Scholarship: This scholarship is awarded to U.S. students who qualify for in-state tuition discounts. Awarded to students in the top 20 percent of their graduating class, or with a 3.00 GPA and a score of 24 on the ACT. The value of the scholarship is the difference between out-state and in-state tuition, currently \$3594. The award is renewable if the recipient meets the university scholarship renewal criteria.

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

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

Board of Trustees Michigan Valedictorian Scholarship —

Value: \$1200. Awarded to Michigan high school valedictorians applying for admission each year. Recipients must be graduates of Michigan high schools and rank first in their high school class. These scholarships may complement other university scholarships the student recipient qualifies for. Renewable for up to four years.

Board of Trustees Ontario Community College Scholarship: Value: one-half tuition awarded to graduates of Ontario community colleges who have a 3.5 or higher grade point average. Each scholarship's value is estimated at \$1875 or one-half tuition. The scholarships are renewable for the student's fourth year of study.

Board of Trustees Ontario Scholarship* — Value: variable up to full tuition per year, for study in any degree curriculum offered by the University. Applicants must be residents of Ontario, and graduates of an Ontario high school. The scholarship is renewable up to four years.

Board of Trustees Scholarship*: Value: up to \$2000 a year for study in any LSSU degree curriculum. Applicants must be residents of Michigan, graduates or near-graduates of properly accredited high schools, have taken the ACT test, and rank in the upper 15 percent of their high school classes. Renewable up to four years.

Board of Trustees United States and Foreign Scholarships* — Value: variable up to full tuition per year, for study in any degree curriculum offered by the University. Applicants must be from states other than Michigan or from foreign countries. Students must have a 3.5 GPA and a minimum 27 ACT score. Preference is given to students from states adjacent to Michigan.

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

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

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

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

Richard I. Blankenbaker Memorial Award — Value: up to full tuition. Established by the family

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

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

Russell D. Bruce Recreation Department Scholarship — Value: \$500. This annual scholarship honors Dr. Russell D. Bruce, the first department head (1976-1987) of recreation disciplines at LSSU. Awarded to a recreation or exercise science major at the end of the spring semester of the junior year, the selection is based on scholarship (3.00 or better), leadership, and service contributions to the Recreation Club or Exercise Science Professional Club and Lake Superior State University. The recommendation of the recreation department faculty is submitted to the Financial Aid Committee for approval.

Central Savings Bank Scholarship — Value: tuition and books.

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

Marion and Raymond Chelberg Outstanding Science Athlete Scholarship Fund — Value: variable. The Chelbergs were one of the original families starting up the newly opened Michigan College of Mining and Technology, Sault Branch in 1946. Together they enhanced both the scientific and cultural aspects of Sault Ste. Marie.

Professor Raymond Chelberg, longtime head of the Chemistry program at Lake Superior State College, was dedicated to the undergraduate student and thoroughly enjoyed the chemistry laboratory and classroom. His desire to help every student was his hallmark. Outside the classroom, Professor Chelberg enjoyed athletic competition and took great pride in the student-athlete who also excelled in academics.

Marian was tremendously active in anything musical in the community. She taught music appreciation at MCMT (Lake Superior State), was one of the founders of Musicale, and was choir director at Central Methodist Church.

It is the desire of the Chelberg family that an annual scholarship be made to the outstanding sci-

ence/athletic student at the end of his/her junior year and that his/her name be inscribed on the plaque that commemorates the outstanding contributions of Marian and Raymond Chelberg.

Awarded annually to an outstanding student majoring in any of the natural sciences (biology, geology, environmental science, mathematics) and excelling in at least one varsity sport at Lake Superior State University. If a qualified applicant is not available from these majors, the scholarship may be given to a student from any other major. Recipients must have completed a minimum of five semester of which at least 30 hours must be at Lake Superior State University, have a minimum 3.00 GPA, demonstrated leadership abilities and contributed significantly to the success of the team on which he/she was a letter winner.

During the eighth week of spring semester, coaches, in conjunction with the director of Athletics, will identify eligible athletes. The athletic director, in conjunction with department heads, will then pick the top candidate, plus one alternate, and forward their recommendation to the Financial Aid Committee for final approval. Notification will be given at the spring sports banquet for the fall awards.

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

following academic year. Recipients may reapply annually.

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

Ronald "Bud" Cooper Endowment Scholarship — Value: \$600. The Ronald "Bud" Cooper Scholarship is presented to an individual in women's sports on a rotating basis if allowable by NCAA regulations: softball, tennis, volleyball 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 next year's top priority. The award will be made to a junior student for use in their senior year. Ronald "Bud" Cooper spent more than 30 years of his life as an athlete, coach and athletic director at Lake Superior State University. In that time he demonstrated a tremendous loyalty to his teammates, staff and the University. His tenacity matched his loyalty as an athlete, performing well in competition and in the classroom. Bud Cooper was a superb athlete for the Sault Branch and an exceptional coach and longtime athletic director. Bud is one of two men instrumental in establishing a hockey program and the Athletic Hall of Fame. His passion and support of the University as an athlete, coach, athletic director, alumnus and faculty emeritus is unsurpassed. Recipient selected by the Athletic Department and recommended to the Financial Aid Committee.

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

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

Vivian M. Day Endowed Nursing Scholarship — Value: variable. The purpose of this endowed award is to enhance financial support for nursing students who have achieved sophomore status in the nursing program at LSSU who have demonstrated leadership and dedication to the profession.

This endowed award was established with a gift of \$10,000 stock from Maurice and Vivian Day in the summer of 1995. The scholarship is named after Vivian Day, a longtime registered nurse. She and Maurice were originally from the Barbeau area, but also have a residence in Zephyrhills, Florida.

Eligible students must have attained at least sophomore status in the nursing program and earned at least 26 LSSU credits, graduated from a high school in the Upper Peninsula, be enrolled as a full-time nursing student, and maintain a minimum 3.00 cumulative GPA. Selection is made by the Nursing Department with a recommendation to the Financial Aid Committee.

Michael D. Della-Moretta Memorial Scholarship — Value: variable. In honor of Michael Della-Moretta, 1977 alumnus, a navy pilot killed

while serving aboard the U.S.S. *Independence* off Iran in 1981. He once said the happiest years of his life were at Lake Superior State University. The award is based on academic achievement and financial need. Preference is given to Upper Peninsula residents with an interest in biological science or a lab science major including math and computer science.

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

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

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

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

Jim Fallis Endowed Athletic Award — Value: variable. This award was established with the proceeds from a golf tournament held in the summer of 1993 in Gaylord, Michigan. The award is named after Jim Fallis, the first four-time All-American at Lake Superior State College. Following graduation (B.A., 1974), Jim Fallis coached and taught for 12 years at LSSU. He served as the University's director of Athletics from 1986-1993. The annual proceeds from the endowment shall be utilized to enhance the financial support of a returning student-athlete.

The recipient of this award must meet the following criteria:

1. Be classified as a sophomore, junior or senior in eligibility.
2. Have been an All-American honoree the previous academic year. The All-American designation must have been earned by placing at the national championships in individual sports or having been named to the All-American team in a team sport.
3. Be an enrolled student-athlete and eligible per NCAA rules covering participation in varsity sports at LSSU.
4. Maintain a minimum cumulative GPA of 2.5.
5. Due to NCAA rules, an individual who is receiving full equivalency grant-in-aid is not eligible for this award. This fund is intended to enhance the financial support of an individual who is not on a full grant-in-aid equivalency.
6. 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. Strong consideration should be given to those who come closest to meeting the intent of the award.

To best carry out the intent of this endowment, the following guidelines are in effect:

At the conclusion of the academic year the coaches with eligible student-athletes will submit the names of the athletes to a committee made up of the director of Financial Aid, LSSU Foundation director and the faculty athletic representative for LSSU. This committee will select the student-athlete that, in their opinion, most reflects the qualities of Mr. Fallis.

Frank Fazi Endowed Scholarship — Value: variable. To financially assist students who are enrolled at Lake Superior State University in any of the degree curricula in the School of Business and Economics. Awarded to incoming freshman with a 3.00 or higher GPA and a graduate of an Eastern Upper Peninsula high school. Preference given to majors in the School of Business and Economics. This scholarship is named in honor of Frank Fazi, who is a longtime supporter to the Sault area community and to Lake Superior State University. Frank has played an active role in many organizations and projects for the betterment of the community. He was also an outstanding athlete playing for the Michigan Tech-Sault Branch Hornet's basketball team. He was inducted into the LSSU Athletic Hall of Fame in 1995. Not renewable.

Fine and Performing Arts Scholarship: Value: variable. Recipients must attend full-time (12 or more credits) at LSSU. Incoming freshmen students must have a 3.0 GPA, while continuing students must have a cumulative GPA of 3.0 or better. Preference will be given to students majoring in one or more of the Fine and Performing Arts programs. The application deadlines will coincide with the semester dates as prescribed by the University. The application format will be that used for other scholarship programs. Each request will be reviewed and awarded by the

Financial Aid Committee. The award is renewable if the student meets the University's scholarship renewal requirements.

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

Fletcher Scholarship Fund — Value: up to \$4,000 a year. A native of Sault Ste. Marie, H. Thayer Fletcher founded the first endowment scholarship fund at LSSU. Remembering his talented high school classmates who, during the depths of the Depression could not attend college, Mr. Fletcher was dedicated to helping worthy young people. Upon his death, he bequeathed nearly half a million dollars to the University for this purpose.

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

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

geology. Candidates are selected by the geology faculty.

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

Gilbert Gleason Fisheries and Wildlife Scholarship — Value: variable. Established by family and friends in honor of Gilbert Gleason, professor emeritus of LSSU where he taught and advised in the Biological Science Department for 28 years. He was the first teacher of Biology at Michigan College of Mining and Technology — Sault Branch. He was instrumental in the establishment of the Natural Wildlife History Museum at LSSU. His life was devoted to his student and his love for the outdoors. It was his wish to provide assistance to those with the appreciation for the outdoor environment.

Eligible applicants are students of junior or senior status who do not qualify for federal grants and have completed 56 credits at LSSU as a fisheries and wildlife major with a 3.00 or higher GPA, prior to the fall of the junior year. If there are no eligible fisheries and wildlife majors, a biology major may be considered. Renewable for senior year if recipient maintains a minimum 3.00 grade point average.

Selection of the recipient will be in the spring semester by a three-person committee consisting of the dean of Science and Natural Resources, chair of the Biology Department and the director of the Gale Gleason Environment Institute. The committee will submit their recommendation to the

Financial Aid Committee for their approval.

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

Dennis Hardt Memorial Scholarship — Value: variable. Established by Mrs. Jean Hardt and classmates in memory of Dennis Hardt, a 1977 electrical engineering technology graduate. Awarded to a high school senior that has been accepted into the Electrical Engineering program. Student's high school grade point average, rank in class and ACT test scores will be the prime selection criteria. If a graduating senior is not available, it may be awarded to a currently enrolled electrical engineering student who has completed at least 26 Lake Superior State University credits and has a 3.00 grade point average. Renewable.

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

Successful applicants will have demonstrated interests in public service reflected through leadership roles and volunteer activities

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

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

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

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

Hudson, Coates, Kline Scholarship — Value: minimum \$2000. Established by the Hudson Foundation in memory of prominent Sault Ste. Marie lawyers Roberts P. Hudson, Claude W. Coates and Robert C. Kline. The Hudson Foundation administers funds for educational and charitable purposes in Chippewa County, Michi-

gan. Awarded to a graduating Sault Area High School senior accepted for admission in any undergraduate degree program. Selections are based on high school grades, ACT test scores, class rank and financial need. The award is renewable for up to four years.

John Kalesky Memorial Endowed Scholarship Fund — Value: \$900. Established by his family in memory of John Kalesky, a 1985 geology alumnus, and awarded to a high school senior admitted into the geology program. Preference is given to students with need. The selection is based on high school grades, ACT test scores and class rank. The award may be granted to a current geology student after one year (26 credits) of study at the University. Eligible students must have a GPA of 3.0 or higher. The award is renewable.

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

George and Virginia Lahodny Endowment Scholarship Fund — Value: minimum of \$500 and up to full tuition depending on the annual earnings of the fund. Qualified applicants include entering freshmen, community college graduates, or currently enrolled students who have completed three full-time semesters at LSSU. The scholarships are

awarded on the following criteria: Entering freshmen are judged on their high school grade point average, ACT test score and rank in class; community college graduates considered on their community college GPA; current LSSU students considered on their grade point average. This is a merit award. Scholarships are renewable based on the same academic grade point average as required for a Board of Trustees Scholarship.

Lambda/School of Business Scholarship Endowment — Value: \$500. This endowed award was created by contributions of over \$100,000 from the business and Lambda alumni. The fund drive was spearheaded by Dr. Madan Saluja, professor of business at LSSU. The annual proceeds from the endowment shall benefit students enrolled in the LSSU Business program.

The recipient must have attained junior or senior status in the business program and have earned at least 52 LSSU credits, maintain a minimum of 3.00 GPA and have demonstrated campus/community leadership and dedication in working in the business profession. Selection is by the Lambda/School of Business Scholarship Committee made up of faculty and alumni who will consider applicants and make its recommendations to the Financial Aid Committee for approval. At least four awards of a minimum of \$500 each will be equally divided to juniors and seniors (example: four awards — two juniors and two seniors will be selected) in the fall semester and the same in the spring semester.

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

based on GPA, ACT scores and class rank (upperclass students on GPA only).

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

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

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

Franklin F. Otis Award — Established in memory of Franklin F. Otis, professor of mathematics from 1948-1978. This award recognizes the hard-working sophomore or higher student enrolled in mathematics or computer and mathematical science programs. The applicant must have earned at least 26 LSSU credits, have a minimum 2.5 GPA overall and at least a 3.0 GPA in computer science and mathematics

courses. A letter of application should be sent to the designated mathematics faculty member the first week of October for consideration. The applicant must be a resident of Michigan or Wisconsin at the time of application.

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

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

Don and Reta Prohazka Memorial Scholarship — Value: \$1000. Established in memory of Don and Reta Prohazka who believed strongly in the importance of providing opportunities for the youth of Michigan's Upper Peninsula, and worked diligently to assist them in achieving their higher educational goals. In 1948, Don Prohazka was named to the Board of Control for the Soo Branch of Houghton's Michigan College of Mining and Technology (later to become Lake Superior State University). Upon his acceptance he said, "College

education for the youth of our state becomes increasingly more necessary in this era...and more particularly to those of our immediate area. I shall consider it my duty to furnish the opportunity for all young people seeking better living through knowledge." It is in this sentiment that the family of Don and Reta Prohazka have established this endowment scholarship. This \$100,000 endowment was established by the family of Don and Reta Prohazka. Representative for the family is Barbara Larson, daughter of Don and Reta Prohazka.

Successful candidates will have graduated from an Upper Peninsula high school they have attended for at least three years. Awards are based on grade point average and ACT score. Financial need will be considered, but all interested students are urged to apply. This scholarship is renewable up to four years for study in any LSSU degree curriculum. If an eligible high school senior is not available, the scholarship may be awarded to a Lake Superior State University student who has completed 26 or more credits at LSSU. Preference will be given to students with Upper Peninsula ties and a cumulative grade point average of 2.8 or higher.

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

Ross N. Roe Scholarship — Value: variable. This endowment was established through a gift from Ross N. Roe. Applicants must be

enrolled at least half time (six or more credits) at the main campus or a regional site. Incoming freshmen students must have a 2.50 or better high school grade point average and continuing students must have a cumulative GPA of 3.00 or higher at LSSU. Applicants must also be a volunteer in regard to the I-500 Snowmobile Race held each February in Sault Ste. Marie, Michigan or a member of the volunteer's family.

The I-500 Snowmobile committee will recommend candidates to the University. Candidates will be reviewed and awarded by the Financial Aid Committee of the University. The award is renewable if the student meets the University's scholarship renewal requirements.

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

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

SMO Foundation Endowed Scholarship — Value: variable. Established by Stanley Tomcyek family, native and longtime resi-

dents of Sault Ste. Marie, to assist LSSU sophomores majoring in pre-medicine or pre-pharmacy. Recipients must be residents of either Chippewa, Mackinac or Luce Counties, have 3.50 college GPA and have financial need.

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

Chris Yanni Memorial Award — Value: variable. To be awarded to a member of the LSSU men's cross country team who has consistently been one of the top seven runners for the men's team, and has made significant contributions to the success of the cross country program.

This award was established by friends and family in memory of Chris Yanni who had a strong interest in outdoor recreational activities and a concern for the protection of natural resources. Chris was a strong advocate for athletics and the virtues of clean, healthy living.

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, have a minimum cumulative GPA of 2.00, be a citizen of Canada or the United States (preference will be given to those applicants from Northern Ontario or Michigan).

Recipient must have run for the LSSU men's cross country team for at least one full season and be returning to LSSU and competing for the cross country team the following year.

Selection of the recipient will be made by a committee appointed by the Athletic Department and will submit their recommendation to

the Financial Aid Committee for their approval.

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

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

Sault/Loretto High School Memorial Scholarship — Value: \$500. The scholarship was established in 1990 by a group of Sault High/Loretto graduates to assist Sault High graduates attending Lake Superior State University. Applicants must be graduates of Sault Area High School and enrolled full-time. Selection is based on grade point average, ACT test score and high school class rank. If a graduating senior is not available for the scholarship, it may be awarded to a current LSSU student who is a Sault High graduate. Renewable.

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

Dr. Kenneth J. Shouldice Memorial Scholarship — Value: variable. Named in honor of the first

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

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

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

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

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

Earl and Minnie Walker Endowment Scholarship Fund — Value: up to full tuition. Established in memory of Earl and Minnie Walker, long time residents and community leaders in Strongs, Michigan. The Walkers valued education, and encouraged their

children and others to pursue a college education. Awards are based on academic achievement and financial need.

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

War Memorial Hospital Medical Staff Nursing Scholarship — Value: variable. Established and funded by the War Memorial Hospital medical staff to assist eligible students enrolled in the nursing program at Lake Superior State University.

Eligible students must be college sophomores or juniors enrolled in the BSN or BSN completion program as full- or part-time students. Recipients must be from the tri-county area, demonstrate financial need and carry a GPA of 3.00 or higher.

The scholarship is renewable subject to the recipient meeting the Board of Trustee Scholarship renewal criteria.

Selection shall be made at the beginning of the second semester of the appropriate academic year. The Department of Nursing and a designated member of the War Memorial Hospital staff shall recommend their selection to the Financial Aid Committee.

Michigan Competitive Scholarship

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

Memorials

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

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

1. have been continuous residents of Michigan for a 12-month period before July 1 of the award year.
2. be a high school graduate.
3. participate in the National American College Test (ACT) and attain a qualifying score.
4. not have engaged in any university, normal school, junior college or other advanced training following graduation from high school and prior to the qualifying examination.
5. have complied with all other provisions of the law and rules and regulations adopted by the authority.
6. demonstrate financial need.

Good academic standing with at least a 2.00 grade point average and meeting satisfactory progress requirements is required to renew a scholarship. High school seniors must obtain ACT test registration materials from their high school counselor and mail them before the deadline for the October ACT examination.

Federal Pell Grants

Federal student aid review begins with PELL Grants that provide a foundation of financial assistance to which other forms of aid may be added. A distinguishing feature of

this program is a central concept of entitlement, guaranteeing those who demonstrate 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.
3. be U.S. citizens or permanent residents.
4. not be in default on a Stafford or Perkins Student Loan, and not owe a refund for a PELL Grant or other federal aid.

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

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

The Board of Trustees Grant Program

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

Federal Supplemental Educational Opportunity Grants

The Higher Education Act of 1965 created this program of financial assistance to help college students with the greatest financial need. Supplemental Educational Opportunity Grants may be used to meet all or part of student financial need (up to \$4000 in any one year).

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

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

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

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

Tuition Incentive Program (TIP): The TIP Program pays tuition and fees for students of lower-income families. Eligible students must: be Michigan residents; be graduates from high school or have obtained a GED after May 1, 1988; before reaching age 20, be accepted for admission into an associate degree

program; and file a TIP application. Applications are available from the Family Independence Agency, high school guidance and college financial aid offices. Applications must be filed before high school graduation.

Loans

Federal Perkins Loans

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

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

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

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

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

Deferment of payment is available if:

1. you are enrolled and attending as at least a half time student at an institution of higher education.
2. for any period not to exceed three (3) years

- A. unable to find full-time employment.
- B. experiencing economic hardship.

Cancellation: Loans may be canceled for:

1. certain types of teaching,
2. full-time qualified provider of early intervention services for the disabled,
3. full-time nurse or medical technician,
4. full-time law enforcement or corrections officer,
5. death or disability of the student,
6. full-time staff of Head Start Program.

Federal Direct Student Loan (Stafford Loan)

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. The federal government pays the interest until six months after graduation or the date the student ceases to be at a least half-time student.

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

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

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 Parent (PLUS) Loan

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

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

Nursing Student Loan

The Nursing Education Loan Program provides loans of up to \$2500 a year for bachelor's degree or completion nursing programs. 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, not in default on any education loans and pass all credit standards. Students who cannot pass the credit standards must have a qualified cosigner.

The minimum loan is \$500 and maximum is \$10,000 per academic year. Interest is fixed or variable. Repayment is a minimum of \$50 a month and must be repaid in 15 years. Applications are available at the Financial Aid Office or by

calling the Student Loan Authority at 1-800-877-5659.

Canada Student Loans

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 a full-time student;
6. send a confirmation of program information form and a copy of social insurance number card with the application.

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 the loan was taken.

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

Short-Term Loan Funds

Bean Loan Fund

Valma L. Curtis Memorial Fund

Robert P. and Ella B. Hudson Foundation, Inc. Loan Fund

Don Lenick Memorial Loan Fund

Shirley Light Memorial Loan Fund Steinman Loan Fund.

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

Generally, loans up to \$200 are allowed for no longer than 30 days during the school year when classes are in session. These loans are signature loans and do not bear interest if repaid when due. A minimum \$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 Student Financial Aid Office.

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 \$1,400 during the school year and up to \$3,500 in the summer with an on-campus job.

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

Federal College Work Study

If you can demonstrate financial need and need a job to help pay University expenses, you may be eligible for employment by Lake

Superior State University under the federally supported Work-Study Program.

19-hour load: 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 approximately \$3,500.

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

Michigan Work Study

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

Vocational Rehabilitation

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

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

Programs for Native Americans

Bureau of Indian Affairs Scholarship Grant: Members or those eligible for membership in a

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

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

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

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

Applicants must 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 Native American Tuition Waiver for the tuition for eligible students each semester. Students must be accepted for admission into an eligible program and meet the satisfactory progress policy of the University.

Veterans

Veterans, Children of Deceased, or Totally Disabled Veterans

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

Veterans' Standards of Progress

Grade point average requirements are the same as the University academic probation and dismissal policy. If your grade point average falls into the dismissal category, the Student Service Center will notify the Veterans Administration of your dismissal and benefits terminated.

Withdrawal or Dropping a Class — You are required to notify the Student Service Center 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 Student Service Center. 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), *Lake State This Week*, WLSO (student radio station), *The John Door*, web page at www.lakers.edu.

Room and Board

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

The Navigator is a useful guide for all students, that can answer many of your questions concerning University life. Copies are available in the Student and Residential Life Office.

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

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

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

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

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

"Financial hardship" is a situation in which the total resources of the student and family added to the total financial aid available from the University does not equal the dollar amount budgeted by the Financial Aid Office as the minimum required for on-campus residency. In such a situation, there are two alternatives: a) withdrawal from the dormitory or b) 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.

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

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

Dining

The Quarterdeck is a full-service cafeteria offering three meals a day. A complete and modern cafeteria, the 'Deck is in the 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 the following sports: men's and women's basketball, cross country, tennis, men's track and golf, and women's volleyball and softball. Laker ice hockey competes at the NCAA Division I level.

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

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

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

Counseling/Testing

You are encouraged to take advantage of our counseling and testing services. Professional counselors are available at the Counseling and Testing Center (located in South Hall) to help with academic, personal or vocational problems.

Vocational testing and counseling programs are invaluable in assessing your interests and potential. This service is available to you throughout the year. The center maintains a complete file of individual test folders, which include all orientation test results for our students. If you wish to have your scores interpreted, simply make an appointment at the center.

If you are interested in personal and social growth through group dynamics, stop by the Counseling 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. Nursing professionals are available most week days between 8 a.m. and 5 p.m. 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 LSSU students.

Upward Bound

Upward Bound is a program for high school students who have the potential to be the first person in their family to attend college. It consists of a six-week summer residential program, including academic classes and enrichment activities. During the school year,

students receive tutoring and counseling from Upward Bound staff. About 60 students from the Eastern Upper Peninsula participate each year.

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 staff are given priority in admission; however, children from the community can be admitted as space allows. Children must be toilet trained. The center, licensed by the State of Michigan Department of Social Services, provides developmentally sound experiences for the child across a range of social, emotional, physical and cognitive dimensions. It is a place where young children can develop a strong relationship with both adults and children. Each morning and afternoon, under the supervision of an experienced staff, students enrolled in the child development program plan and supervise large group, art, snack and small group experiences for the children. A significant portion of each day is devoted to exploratory play. During exploratory play, children may move throughout the various learning areas of the center, electing to participate in any one of a wide variety of activities and interact with learning materials. The Child Development Center is located on 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 Computing 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 and 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 Kenneth J. Shouldice 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-to-one 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 these accounts are available in the Internet computer lab. Internet access is also available via dial-up at home for students both on and off campus. LSSU is currently working on a plan that will bring Ethernet connectivity to all campus residents.

The Helpdesk, located in the Kenneth J. Shouldice Library, assists students with general computing problems related to any of the above services. General sessions are also offered to students on Internet access, campus databases and general computer use. Information can also be attained from residence hall assistants and the President's Council.



Continuing Education

Mission Statement:

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

- **Evening & Weekend Courses**

Degree Completion Programs
Certificate Programs

- **Distance Education**

- **Summer School**

- **Regional Centers**

Alpena
Escanaba
Petoskey
Traverse City

- **Graduate Degree Program — MBA**

- **EDventures**

Professional Development
Community Enrichment
Lake Superior Elders & Elderhostel
Customized Training

Continuing Education provides educational opportunities for non-traditional students in LSSU's service region. In cooperation with academic departments, we create opportunities to meet the educational needs of adult students through alternative delivery options such as distance learning, flexible schedules, off-campus degree programs and weekend courses. Continuing Education provides a focus for external and off-campus degree programs, continuing education, evening and weekend courses and public service programs. All are flexible and accessible to learners whose job, family and community responsibilities conflict with traditional academic schedules. 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, North Central Michigan College in Petoskey and Northwestern Michigan College in Traverse City. Students may earn a master of business administration (MBA) and bachelor of science degrees in business administration, accounting, nursing (BSN completion program for registered nurses), criminal justice/generalists 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. Downlink satellite capabilities are also available.

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 include courses and activities for adults and children. Adult enrichment courses include computers, exercise, crafts, art, language, personal finance and gardening.

Elderhostel is a nonprofit educational travel program for participants 60 years or older. Hostellers stay a week on campus studying with LSSU professors. They also enjoy field trips, social activities and areas of local interest.

Lake Superior Elders (LSE) addresses the needs of retired and semi-retired adults through continued educational pursuits. This "Learning in Retirement Center" has a monthly program featuring guest speakers on various topics. 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).

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 and color 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.

The library also maintains a closed-circuit television system for delivery of programs across campus. 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.



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. Requirements are of five categories: general education, bachelor of arts or bachelor of science, departmental, competency in mathematics and writing (required for students entering before fall 1997 and new transfer students entering before fall 2000), and residency.

Associate's degrees and certificates: A minimum of 62 credits is required for an associate's degree. At least three credits each of English and speech, plus six other general education credits, are required. Competency in mathematics and writing is required for an associate's degree. There is also a residency requirement.

Minors: Academic minor programs are also offered in a wide variety of disciplines. A minimum of 20 credits is required for a minor, and some require more. 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 of the final 64 credits and at least 50 percent of their departmental required 300/400 level credits in courses offered by Lake Superior State University. Associate'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 require-

ments 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.

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, assistant to the provost for academic records and provost. 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.

Competency in Mathematics

for students entering before fall 1997 and new transfer students entering before fall 2000.

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

mathematics component of the ACT test.

Transfer students who have previously completed a course equivalent to MA092, with a grade of 2.00 or higher, or a higher-level math class (specifically excluding MA207) will have satisfied the University's mathematics graduation requirement.

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

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

Competency in Writing *for students entering before fall 1997 and new transfer students entering before fall 2000.*

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

The test consists of a read/respond format in which a passage is supplied and students use it as the basis for the essay. At least three topics from across the curriculum will be available for each test. You will have three hours to complete the test. The rising junior test will be given during the final exam

week of EN205, EN210 or EN215 at scheduled group times in place of the final examination. All other test sessions must be scheduled by the Counseling and Testing Center located in South Hall.

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

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

Waiver of Competency Requirements

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

Those potentially eligible for a waiver are required to initiate their

appeal through the University Counseling and Testing Center. Those students who obtain the necessary certification must provide the Counseling and Testing Center with documentation of such. The Counseling and Testing Center shall then notify the assistant to the provost for academic records of the waiver. Enrollment restrictions stated above, as appropriate, continue in effect until a student has provided this documentation to the Counseling and Testing Center.

General Education (33 credits) —

for students entering before fall 1997 and new transfer students entering before fall 2000.

General education consists of courses required regardless of specialized areas of study. The purpose of general education is to develop skills and knowledge useful for all students, regardless of their career choices. Requirements in English and speech enhance fundamental skills of writing and speaking. Requirements in humanities, natural sciences and social sciences broaden intellectual perspective and familiarize students with fundamental fields of human knowledge.

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

Speech (3) - SD101.

Humanities (8) - any HU course or courses, or any of the courses AT250, 251; FR251; GN241; MU110, 111, 112, 113, 140, 141, 160, 161, 220, 221, 250, 251, 260; NA240; PL204, 205, 302; SD251, 252; or SP261, 305, 306; any second-year modern language course other than English; with a maximum of four semester credits per discipline or total in languages other than English (excluding HU) are allowed to count for this requirement. Four

credits of one modern language other than English and four credits of another cannot be used.

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

Natural Science (8) - At least one course from each of the following two categories: life sciences - BL105, 109, 122, 204; or both NS103 and 104; physical sciences - CH105, 108, 115, GE111, 112, 114; GG106, 108; NS101, 102, 105, 107, 110, 119; PH221, 222, 231.

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

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

General Education — *for new students entering fall 1997 or later*

Transfer students will be under the old general education requirements until fall 2000.

Communication Skills

EN 110 Freshman Composition

Select one course from the following three courses: EN 205, EN 210, EN 215

SD 101

Four additional communication intensive courses included in degree requirements.

Mathematics — Mathematics or statistics course at 100 level or higher with grade of C- or higher

Statistics course or component of course included in degree requirements — *Consult your advisor to*

determine the most appropriate statistics elective for your program: CJ 345, MA 110, MA 207, MA 308, MA 309, PS 211, PY 210, SO 302

Computer literacy — One course or component of course included in degree requirements

Critical thinking — One course or component of course included in degree requirements

Ethics — One course or component of course included in degree requirements

Aesthetics — HU 251 - Humanities I (4)

Elective, including courses in specialized areas, e.g., art, music, world civilization and courses representing non-western works and/or women (3 or 4 credits): AT 250, AT 251, HU 252, HU 256, HU 261, HU 262, HU 490, MU 110, MU 111, MU 112, MU 113, MU 140, MU 141, MU 160, MU 161, MU 220, MU 221, MU 250, MU 251, NA 240

Cultural Diversity — One course or component of course included in degree requirements: BA 308, ES 450, EV 285, GG 306, HE 328, HS 230, HS 361, HS 371, HU 255, ID 300 - (component) to be taken with one offering of UN 103; MU 260, NA 225, NA 230, NA 235, RC 450, SO 103, SO 225, SO 226, SO 321, TE 250, UN 103 (to be taken with ID300).

Social Science — Two social science courses (6 to 8 credits); EC 201, EC 202, EC 208, EC 209, EC 302, GG 201, GG 302, GG 321, GG 360, HS 101, HS 102, HS 131, HS 132, HS 235, HS 301, HS 302, HS 310, HS 315, HS 316, HS 331, HS 332, NA 320, PS 110, PS 160, PY 101, SO 101, SO 102, SO 113.

Natural Science — Two natural science courses associated with labs (8 Credits); BL 105, BL 109, BL 122, BL 204, CH 108, CH 115, GE 111, GE 114, GG 106, GG 108, NS 101, NS 102, NS 103/104, NS 110, NS 119, PH 221, PH 231.

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 in the Academic Records Office. 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.

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 program 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, will receive 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 State. All credits with grade points completed at

other colleges (percentages are converted to letter grades) will be figured in computing grade point averages for honors diplomas and medallions at LSSU.

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

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.



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 Engineering, Mathematics and Business, page 231.

Mission Statement:

The Master of Business Administration program offers general business education to students from diverse academic backgrounds. The program develops and enhances leadership skills for early- and mid-career managers. Cultural and international diversity characterizes the students. Students benefit from this diversity.

MBA faculty members believe that a good, quality program reflects the dynamic nature of business in a global economy. They continually assess and improve program focus and quality.

Outcomes:

- Graduates will demonstrate knowledge of the common professional component. They will understand the economic, legal, political, cultural and global environment of business.
- Graduates will demonstrate skills in research, communication, teamwork and critical thinking.
- Graduates will advance in their professions.
- Graduates will demonstrate involvement in professional and community affairs.
- Courses will be offered at times convenient to students and consistent with program integrity.

Admission Requirements

Admission to the MBA program will be based on the following requirements:

1. possession of a recognized baccalaureate degree, comprising a minimum of 120 semester credits, from an accredited college or university.
2. two letters of recommendation, one preferably from an academic source and one required from an employer or supervisor.
3. completion of the application form.
4. official transcripts of all previous post-secondary work, with certified translations for non-English transcripts, from which an undergraduate grade point average (GPA) can be computed.
5. minimum points from Formula 1 or Formula 2 (next page), with additional restrictions on verbal and quantitative scores. All applicants must have official scores reported for the Graduate Management Admissions Test (GMAT) taken within the past five years.
6. For students whose primary language is not English, the University may require the Test of English as a Second Language (TOEFL) as a diagnostic. English as a Second Language (ESL) support services will be made available to students who require additional English speaking, listening or reading skills.

Master of Business Administration

Formula 1

Applicants must have a minimum of 1000 points using Formula 1 based on the GPA (4.0 scale) from the last 60 semester credits of undergraduate work [$200 \times \text{GPA} + \text{GMAT score} \geq 1000$].

Formula 2

Applicants must have a minimum of 950 points using Formula 2 based on the GPA (4.0 scale) for all undergraduate work [$200 \times \text{GPA} + \text{GMAT score} \geq 950$].

For full admission, minimum scores of 28 for the quantitative GMAT score and, for candidates whose first language is English, 25 for the verbal GMAT score are required. Applicants who do not receive the minimum quantitative or verbal scores will be required to complete additional preparatory work for full admission.

Applicants who are denied admission may appeal to the Graduate Admissions Committee.

Application Procedure

Those seeking admission into the MBA program must complete the following steps.

- Complete an Application for Admission and submit it with a \$25 non-refundable application fee (U.S. funds) to the Admissions Office.
- Official transcripts of all undergraduate and graduate work should be requested to be sent to the Admissions Office directly by the institution from which credit was earned.
- Official copies of GMAT (Graduate Management Admission Test) scores, taken within the past five years, should be sent to the Admissions Office.
- Two letters of recommendation, one required from an employer, should be sent to the Admissions Office.
- For students whose first language differs from English, an official copy of the TOEFL (Test of English as a Foreign Language) score should be sent to the Admissions Office.

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 Prof. Component		21
600-Level Electives		15
Total 600-Level Requirement		36

Master of Business Administration

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
MK384	Physical Distribution	3
MK486	International Marketing	3
MN365	Human Resource Management	3

Course substitutions, waivers, transfer credit: Waivers of requirements and course substitutions can only be granted by the chair of the MBA program. 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 within eight years from date of admission.

Guest Students

Students who have not been accepted formally into the MBA program are classified as guest students and may enroll in classes provided they have the necessary prerequisites. Students who wish to use credit earned as a guest student toward the MBA degree

Grades

The following grades are awarded to MBA students:

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

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

Students who earn a "D" or "F" grade will be immediately referred to the MBA Standards and Policy Committee for review. Courses with grades of "D" or "F" must be repeated or the student will not be eligible to graduate.

must apply and be accepted into the program. A maximum of six credits earned as a guest student may be applied toward the degree requirements. **No exceptions to this maximum will be allowed.**

Registration and Scheduling Information

Course registration and scheduling begins upon receipt of the scheduling bulletin each semester. All registration and scheduling is processed through the Continuing 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

Master of Business Administration

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.

Non-Credit Option

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

For more information, please contact the Contact the Continuing Education Office at 906-635-2802.

Legal Assistant Studies

See College of Arts, Letters
and Social Sciences, page 211.

Program Description:

The legal assistant profession is one of the occupations projected to grow the fastest through the year 2005 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.

Post-Baccalaureate Certificate

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

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?

Legal Assistant Studies

Legal Assistant Studies Post-Baccalaureate Certificate

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 or	
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

**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:*

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
	Law courses offered in MBA programs	2-4

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		
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>
					<u>16</u>
SUMMER					
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

Accounting

See College of Engineering, Mathematics and Business, page 231.

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 (61 credits)

AC132	Principles of Accounting I**	4
AC133	Principles of Accounting II**	4
AC232	Intermediate Accounting I	4
AC233	Intermediate Accounting II	4
AC332	Cost Accounting I	4
AC333	Cost Accounting II	4
AC334	Accounting Information Systems	3
BA211	Business Statistics**	3
BA231	Business Communications**	3
BA254	Business Law I	3
BA255	Business Law II	3
BA466	Business Policy**	3
EC201	Prin. of Macroeconomics**	3
EC202	Prin. of Microeconomics**	3
FN341	Managerial Finance**	4
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 Description:

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.

Bachelor of Science

Tracks

Public Accounting

Industrial/Managerial

Data Processing and Accounting

150-Hour Program

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?

Accounting

Accounting Public Accounting Track Bachelor of Science

Public/CPA	(18 credits)	
AC421	Federal Taxation I	3
AC422	Federal Taxation II	3
AC427	Auditing	4
AC432	Advanced Accounting I	3
AC433	Advanced Accounting II	3
DP151	Spreadsheets	2

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	Freshman Composition*	3	NS	Life/Physical Science Elective	3-4
DP151	Spreadsheets	2		Aesthetics Elective	3-4
NS	Life/Physical Science Elective	3-4		Soc Sci Elective	3-4
		<u>15-16</u>			<u>16-19</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
EN210	Research Paper Process	3	BA231	Business Communications	3
	or*	3	BA211	Business Statistics	3
EN215	Intro. to Literature & Research	3-4			
	Aesthetics Elective	3-4			
		<u>16-17</u>			<u>16</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
	Science Lab	1		Electives	6
NS	Life/Physical Science Elective	3-4			<u>16</u>
		<u>14-16</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>

*English composition may be taken either fall or spring semester.

Bachelor's Degrees

Accounting Industrial Accounting Track Bachelor of Science

Industrial/CMA	(17-18 credits)	
AC421	Federal Taxation I	3
AC427	Auditing	4
BA403	Business, Government and Society	3
DP151	Spreadsheets	2
DP225	Word Processing Techniques	2
	or	
OA111	Keyboarding/Document Formatting I	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	Freshman Composition*	3	NS	Life/Physical Science Elective	3-4
DP151	Spreadsheets	2		Aesthetics Elective	3-4
NS	Life/Physical Science Elective	3/4	DP225	Word Processing Techniques	2
		<u>15-16</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 Microeconomics	3
EN210	Research Paper Process	3	BA231	Business Communications	3
	or*	3	BA211	Business Statistics	3
EN215	Intro. to Literature & Research	3-4			
	Aesthetics Elective	3-4			
		<u>16-17</u>			<u>16</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	3-4		Electives	8
	Science Lab	1-2			<u>18</u>
		<u>15-17</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>			

*English composition may be taken either fall or spring semester.

Accounting Data Processing and Accounting Track Bachelor of Science

DP/Accounting	(24-25 credits)
DP151 Spreadsheets	2
DP151 Database	2
DP160 Personal Computer Workstation Operating System	3
DP163 Troubleshooting and Repair of Personal Computers	3
DP225 Word Processing Techniques	2
OA111 Keyboarding/Document Formatting I	3
DP241 Desktop Publishing	3
DP260 Personal Computers Network Operating Systems	3
DP263 Storage, Protection & Recovery of Personal Computer	3
MN464 Organizational Behavior	3

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 Freshman Composition*	3	Life/Physical Science Elective	3-4
DP151 Spreadsheets	2	DP225 Word Processing Techniques	2
DP160 Personal Computers Workstation Operating Systems	3	DP163 Troubleshooting and Repair of Personal Computers	3
	<u>15</u>		<u>15-16</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
EN210 Research Paper Process or*	3	DP263 Storage, Protection & Recovery of Personal Computer	3
EN215 Intro. to Literature and Research		BA211 Business Statistics	3
DP260 Personal Computers Network Operating Systems	3		<u>16</u>
	<u>15</u>		
Third Year			
AC332 Cost Accounting I	4	AC333 Cost Accounting II	4
FN341 Managerial Finance	4	Life/Physical Science Elective	3-4
MK281 Marketing Principles & Strategy	3	AC334 Accounting Information Systems Elective	3
DP241 Desktop Publishing	3	BA231 Business Communications	3
DP151 Database	2	Life/Physical Science Lab	1-2
	<u>16</u>		<u>17-19</u>
Fourth Year			
HU Aesthetics Elective	3-4	HU Aesthetics Elective	3-4
MN365 Human Resource Management	3	MN464 Organizational Behavior	3
BA308 Cultural Diversity	7	BA466 Business Policy Electives	3
	<u>3</u>		<u>6</u>
	16-17		16

*English composition may be taken either fall or spring semester.

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
DP151	Spreadsheets	2
DP151	Data Base	2
DP225	Word Processing Techniques	2
	<i>or</i>	
OA111	Keyboarding/Document Formatting I	3
DP241	Desktop Publishing	3
MN464	Organizational Behavior	3
MN360	Principles of Management	3
MN464	Organizational Behavior	3

General education requirements and sufficient elective credits must be completed so that at least 128 semester credits have been earned.

Bachelor's Degrees

FALL		SPRING			
First Year					
AC132	Principles Accounting I	4	AC133	Principles of Accounting II	4
MA111	College Algebra	3	SD101	Fund. of Speech Communication	3
EN110	Freshman Composition*	3		Life/Physical Science Elective	3-4
DP151	Spreadsheets	2	DP151	Database	2
NS	Life/Physical Science Elective	3-4		Elective	3
		<u>16</u>		Life/Physical Science Lab	1-2
					<u>16-18</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
EN210	Research Paper Process		BA231	Business Communications	3
	<i>or</i> *	3	BA211	Business Statistics	3
EN215	Intro. to Literature & Research	3			<u>16</u>
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
	Aesthetics Elective	3-4	AC334	Accounting Information Systems	3
MN360	Principles of Management	3	Soc Sci	Elective	3
		<u>15</u>	DP225	Word Processing Techniques	2
					<u>15</u>
Fourth Year					
BA403	Government, Business & Society	3		Aesthetics Elective	3-4
AC432	Advanced Accounting I	3	AC433	Advanced Accounting II	3
MN464	Organizational Behavior	3	NS/MA/SS	Elective	4
BA308	Cultural Diversity	3		Electives	3
DP241	Desktop Publishing	3			<u>13-14</u>
		<u>15</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**	8
		<u>13</u>			<u>14</u>

*English composition may be taken either fall or spring semester.

**See your advisor for suggested electives.

Biology

See College of Natural and Health Sciences, page 245.

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 Description:

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 (50 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL220	Genetics	4
BL280	Biometrics	3
BL395	Junior Seminar	1
BL499	Senior Thesis	2
CH115	General Chemistry I	5
CH116	General Chemistry II	4
EN110	Freshman Composition	3
EN210	Research Paper Process	3
MA111	College Algebra	3
MA112	Calculus for Business and Life Sciences	4
MA207	Principles of Statistical Methods	3
SD101	Fund. of Speech Communication	3

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?

Biology

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 page 216.

The following courses must be successfully completed to obtain this degree:

BA Biology		(29 credits)
BL330	Animal Physiology	4
	<i>or</i>	
BL315	Plant Physiology	3
BL337	General Ecology	3
BL420	Population Genetics & Evolution	3
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CS101	Intro. to Microcomputer Applications	3
	Foreign Language*	8

*All eight credits must be in one language.

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	Freshman Composition	3	MA112	Calculus for Business & Life Sciences	4
		<u>15</u>	SD101	Fund. of Speech Communication	3
					<u>15</u>
Second Year					
BL204	General Microbiology	4	EN210	Research Paper Process	3
CS101	Intro. to Microcomputer Applications	3		Social Science Elective (GenEd)	3-4
MA207	Principles of Statistical Methods	3	CH225	Organic Chemistry II	4
CH225	Organic Chemistry I	4	HU251	Humanities I	4
BL	Elective	3			<u>14-15</u>
		<u>17</u>			
Third Year					
BL337	General Ecology	3	BL330	Animal Physiology	4
BL220	Genetics	3		<i>or</i>	
	Foreign Language I	4	BL315	Plant Physiology	3
	Aesthetics Elective (GenEd)	3-4		Foreign language II	4
		<u>14-15</u>		Social Science Elective (GenEd)	3
			BL395	Junior Seminar	1
				Free Electives	4
					<u>16</u>
Fourth Year					
BL	Elective	5	BL499	Senior Thesis	2
	Cultural Diversity Elective (GenEd)	3	BL420	Population Genetics & Evolution	3
	Free Elective	8		Free Electives	11
		<u>16</u>			<u>16</u>

Bachelor's Degrees

Biology Botany Concentration Bachelor of Science

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

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
BL420	Population Genetics & Evolution	3
BL437	Plant Ecology	3
BL408	Plant Systematics	3
CH225	Organic Chemistry I and	
CH226	Organic Chemistry II	8
	<i>or</i>	
CH220	Survey of Organic Chemistry and	
CH231	Quantitative Analysis	4
CH351	Introductory Biochemistry	4
CS101	Intro. to Microcomputer Applications	3
	Physical Science Electives	8

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
EN110	Freshman Composition	3	CH116	General Chemistry II	4
MA111	College Algebra	3	CS101	Intro. to Microcomputer Applications	3
		<u>15</u>	MA112	Calculus for Business and Life Sciences	4
					<u>15</u>
Second Year					
BL202	Field Botany	3	BL204	General Microbiology	4
BL230	Introduction to Soils	4	BL280	Biometrics	3
BL240	Natural History of Vertebrates	3	CH220	Survey of Organic Chemistry	4
MA207	Principles of Statistical Methods	3	EN210	Research Paper Process	3
SD101	Fund. of Speech Communication	3		Social Science Elective	3
		<u>16</u>			<u>17</u>
Third Year					
BL220	Genetics	4	BL201	Plant Morphology	3
BL337	General Ecology	3	CH351	Introductory Biochemistry	4
BL395	Junior Seminar	1		Cultural Diversity Elective	3
CH231	Quantitative Analysis	4		Aesthetics Elective	3
	Social Science Elective	3		Elective	3
		<u>15</u>			<u>16</u>
Fourth Year					
BL437	Plant Ecology	3	BL315	Plant Physiology	4
BL499	Senior Thesis	2	BL420	Population Genetics & Evolution	3
	Physical Science Elective	4	BL408	Plant Systematics	3
HU251	Humanities I	4		Physical Science Elective	4
	Elective	2		Elective	2
		<u>15</u>			<u>16</u>

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.

The following courses must be successfully completed to obtain this degree:

Ecology		(51 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	
BL440	Stream & Wetland Ecology	3	
CH225	Organic Chemistry I <i>and</i>		
CH226	Organic Chemistry II	8	
<i>or</i>			
CH220	Survey of Organic Chemistry <i>and</i>		
CH231	Quantitative Analysis	4	
CH351	Introductory Biochemistry	4	
CS101	Intro. to Microcomputer Applications	4	
Physical Science Electives			8
EV220	GPS/GIS Techniques	3	
<i>or</i>			
EV230	Intro. to Geographical Information Systems, GIS	3	

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
EN110	Freshman Composition	3	CH116	General Chemistry II	4
MA111	College Algebra	3	CS101	Intro. to Microcomputer Applications	3
		<u>15</u>	MA112	Calculus for Business and Life Sciences	4
					<u>15</u>
Second Year					
BL202	Field Botany	3	BL204	General Microbiology	4
BL240	Natural History of the Vertebrates	3	BL280	Biometrics	3
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
EN210	Research Paper Process	3	SD101	Fund. of Speech Communication	3
MA207	Principles of Statistical Methods	3	Elective		2
		<u>16</u>			<u>16</u>
Third Year					
BL220	Genetics	4	CH351	Introductory Biochemistry	4
BL230	Introduction to Soils	4	EV230	Introduction to GIS	3
BL337	General Ecology	3	Aesthetics Elective		3
BL395	Junior Seminar	1	Cultural Diversity Elective		3
		<u>3</u>	Elective		3
		<u>15</u>			<u>16</u>
Fourth Year					
BL345	Limnology	3	BL420	Population Genetics & Evolution	3
BL437	Plant Ecology	3	BL440	Stream & Wetland Ecology	3
BL499	Senior Thesis	2	Physical Science Elective		4
		<u>4</u>	Social Science Elective		3
HU251	Humanities I	4	Elective		3
		<u>16</u>			<u>16</u>

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.

The following courses must be successfully completed to obtain this degree:

General Biology		(51 credits)	
Biology Electives*		25	
BL420	Population Genetics & Evolution	3	
CH225	Organic Chemistry I <i>and</i>		
CH226	Organic Chemistry II	8	
<i>or</i>			
CH220	Survey of Organic Chemistry <i>and</i>		
CH231	Quantitative Analysis	4	
CH351	Introductory Biochemistry	4	
CS101	Intro. to Microcomputer Applications	3	
Physical Science Electives			8

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

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
EN110	Freshman Composition	3	CH116	General Chemistry II	4
MA111	College Algebra	3	CS101	Intro. to Microcomputer Applications	3
		<u>15</u>	MA112	Calculus for Business and Life Science	4
					<u>15</u>
Second Year					
BL220	Genetics	4	BL	Biology Elective	3
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	EN210	Research Paper Process	3
		<u>3</u>	Elective		3
		<u>17</u>			<u>16</u>
Third Year					
BL	Biology Elective	3	BL204	General Microbiology	4
BL395	Junior Seminar	1	BL	Biology Elective	4
CH351	Introductory Biochemistry	4	BL	Biology Elective	4
		<u>4</u>	Physical Science Elective		4
HU251	Humanities I	4			<u>16</u>
		<u>16</u>			
Fourth Year					
BL	Biology Elective	3	BL420	Population Genetics & Evolution	3
BL	Biology Elective	4	BL	Biology Elective	4
BL499	Senior Thesis	2	Social Science Elective		3
		<u>3</u>	Elective		5
		<u>15</u>			<u>15</u>

Biology

Biology Pre-Professional Studies Concentration Bachelor of Science

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

The following courses must be successfully completed to obtain this degree:

Pre-professional Studies		(51 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
CH351	Introductory Biochemistry	4
CS101	Intro. to Microcomputer Applications	3
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

Bachelor's Degrees

Biology Zoology Concentration Bachelor of Science

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

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
Any two of the following three courses:		
BL310	Ichthyology	3
BL311	Mammalogy	3
BL312	Ornithology	3
BL330	Animal Physiology	4
BL337	General Ecology	3
BL303	Entomology	3
BL405	Animal Behavior	3
BL420	Population Genetics & Evolution	3
CH225	Organic Chemistry I and	
CH226	Organic Chemistry II	8
or		
CH220	Survey of Organic Chemistry and	
CH231	Quantitative Analysis	4
CH351	Introductory Biochemistry	4
CS101	Intro. to Microcomputer Applications	3
	Physical Science Electives	8

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
EN110	Freshman Composition	3	CH116	General Chemistry II	4
MA111	College Algebra	3	CS101	Intro. to Microcomputer Applications	3
		<u>15</u>	MA112	Calculus for Business and Life Sciences	4
					<u>15</u>
Second Year					
BL220	Genetics	4	BL204	General Microbiology	4
CH225	Organic Chemistry I	4	BL280	Biometrics	3
MA207	Principles of Statistical Methods	3	CH226	Organic Chemistry II	4
EN210	Research Paper Process	3	SD101	Fund. of Speech Communication	3
	Social Science Elective	3		Elective	3
		<u>17</u>			<u>17</u>
Third Year					
BL332	Embryology (alternate years)	3	BL243	Vertebrate Anatomy	4
BL395	Junior Seminar	1	BL320	Cell Biology	4
CH351	Introductory Biochemistry	4	BL330	Animal Physiology	4
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
HU251	Humanities I	4			<u>16</u>
		<u>16</u>			
Fourth Year					
BL423	Immunology	4	BL420	Population Genetics & Evolution	3
BL499	Senior Thesis	2	BL433	Histology (alternate years)	3
	Cultural Diversity Elective	3	BL480	Advanced Clinical Microbiology	3
	Aesthetics Elective	3		Elective	5
	Social Science Elective	3			<u>14</u>
		<u>15</u>			

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
EN110	Freshman Composition	3	CH116	General Chemistry II	4
MA111	College Algebra	3	CS101	Intro. to Microcomputer Applications	3
		<u>15</u>	MA112	Calculus for Business and Life Sciences	4
					<u>15</u>
Second Year					
BL220	Genetics	4	BL24	General Microbiology	4
BL240	Natural History of the Vertebrates	3	BL280	Biometrics	3
MA207	Principles of Statistical Methods	3	BL312	Ornithology	3
SD101	Fund. of Speech Communication	3	CH220	Survey of Organic Chemistry	4
	Cultural Diversity Elective	3	EN210	Research Paper Process	3
		<u>16</u>			<u>17</u>
Third Year					
BL310	Ichthyology	3	BL243	Vertebrate Anatomy	4
BL337	General Ecology	3	BL330	Animal Physiology	4
CH351	Introductory Biochemistry	4	BL395	Junior Seminar	1
	Physical Science Elective	4		Physical Science Elective	4
	Social Science Elective	3		Aesthetics Elective	3
		<u>17</u>			<u>16</u>
Fourth Year					
BL303	Entomology	3	BL405	Animal Behavior	3
CH231	Quantitative Analysis	4	BL420	Population Genetics & Evolution	3
HU251	Humanities I	4	BL499	Senior Thesis	2
	Elective	4		Social Science Elective	3
		<u>15</u>		Elective	3
					<u>14</u>

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.

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.

The following courses must be successfully completed to obtain this degree:

BS Biology Secondary Education (58 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

Group Science Minor

CH220	Survey of Organic Chemistry	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4
GE111	Physical Geology I	4
GE112	Physical Geology II	4

Professional Component

TE150	Reflections on Teaching & Learning	3
TE250	Student Diversity & Schools	3
TE301	Students and the Context of Learning	4
TE401	Teaching, Learning and Assessment in the Classroom	5
TE402	Crafting Teaching Practice	6
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

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	Freshman Composition	3	MA112	Calculus for Bus & Life Sci	4
		<u>15</u>	HU251	Humanities I	4
					<u>16</u>
Second Year					
EN210	Research Paper Process	3	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 (GenEd)	3
BL240	Natural History of the Vertebrates	3	CH220	Survey of Organic Chemistry	4
MA207	Principles of Statistical Methods	3	SD101	Fund. of Speech Communication	3
		<u>16</u>			<u>16</u>
Third Year					
BL337	General Ecology	3	BL330	Animal Physiology	4
BL220	Genetics	4	BL204	General Microbiology	4
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
TE301	Students and the Context of Learning	4	BL395	Junior Seminar	1
		<u>15</u>	BL	Electives	3
					<u>16</u>
Fourth Year					
BL405	Animal Behavior	3	BL499	Senior Thesis	2
BL	Elective	2		Aesthetics Elective (GenEd)	3
GE111	Physical Geology I	4	GE112	Physical Geology II	4
TE401	Teaching of Subject Matter to Diverse Learners	5	TE402	Crafting Teaching Practice	6
	Social Science Elective (GenEd)	3			<u>15</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>

Business Administration

See College of Engineering, Mathematics and Business, page 231.

Bachelor of Science

Specialties in:
Management
Marketing

Career Choices:

Manager
Chief Executive Officer
President
Human Resource Manager
Marketing Manager

Student Profile:

Are you...

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

Program Description:

This degree requires successful completion of a curriculum with a minimum of 128 semester hours as prescribed on the following page. It provides you with a broad background in business administration by presenting courses covering all the major functional areas of business involvement. Students are encouraged to complete a minor, a specialty or an internship to learn more about a particular area of business administration. Refer to the Minors section of this catalog for the various business-related minors. See page 232 regarding this program's accreditation.

Career Description:

Manager/Chief Executive Officer/President — guides and directs the organization. Sets goals and determines methods to achieve those goals. Is concerned with recruiting and training personnel. Conducts performance evaluations for the business.

Human Resource Manager — is concerned with the recruitment, hiring, training and promotion of the workforce to fit the needs of the organization.

Will be involved in complying with various state and federal regulations.

Marketing Manager — 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.

Business Administration Bachelor of Science

Business Courses Component		(54 Credits)
AC132	Principles of Accounting I*	4
AC133	Principles of Accounting II*	4
BA211	Business Statistics*	3
BA231	Business Communications*	3
BA254	Business Law I	3
BA255	Business Law II	3
BA403	Business, Government & Society*	3
BA466	Business Policy*^	3
DP151	Computer Applications	3
EC201	Prin. of Macroeconomics**	3
EC202	Prin. of Microeconomics**	3
FN341	Managerial Finance**	4
MK281	Marketing Principles & Strategy*	3
MN360	Principles of Management	3
MN365	Human Resource Management*	3
MN464	Organizational Behavior	3
MA111	College Algebra*	3

General education requirements and sufficient elective credits must be completed so that at least 128 credits have been earned.

Students are encouraged to use free electives to complete a minor, a specialty or an internship.

* May count toward 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.

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	Freshman Composition*	3		Life/Physical Science Elective	3-4
	Life/Physical Science Elective	3-4	BA211	Business Statistics	3
DP151	Computer Applications	3		Elective	3
		16-17			16-17
Second Year					
MK281	Marketing Principles & Strategy	3	HU	Aesthetics Elective	3-4
BA254	Business Law I	3	BA255	Business Law II	3
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN210	Research Paper Process	3	BA231	Business Communications	3
	or*	3		Elective	3
EN215	Intro. to Literature & Research	3			16
HU	Aesthetics Elective	4			15-16
		15-16			15-16
Third Year					
SS	Elective	3	MN365	Human Resource Management	3
FN341	Managerial Finance	4		General Education or Free Electives	13
MN360	Principles of Management	3			16
	Electives	6			16
		16			16
Fourth Year					
BA403	Business, Government & Society	3	BA466	Business Policy	3
MN464	Organizational Behavior	3		Electives	12
	Electives	6			15
BA302	Managing Cultural Diversity	3			15
		15			15

*English composition may be taken either fall or spring semester.

Business Administration Management Specialty Bachelor of Science

Total Credits Required	13	
Required Courses:		
MN451	Labor Law	4
MN461	Management Simulation	3
MN469	Collective Bargaining	3
MN471	Production Operations Management	3

Business Administration Marketing Specialty Bachelor of Science

Total Credits Required	18	
Required Courses:		
MK381	Consumer Behavior	3
MK387	Advertising	3
MK480	Marketing Research	3
MK481	Marketing Management	3
MK486	International Marketing	3
MK	Elective	3

Clinical Laboratory Science

See College of Natural and Health Sciences, page 245.

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?

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 Description:

Clinical Laboratory Scientist — performance of 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.

The degree in clinical laboratory science includes the following courses in addition to the biology core (see page 77) in order to qualify to take the national registry examinations. **Note:** BL280, BL395 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
CS101	Intro. to Microcomputer Applications	4
CH220	Survey of Organic Chemistry	4
CH231	Quantitative Analysis	4
CH232	Instrumental Analysis	4
CH351	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	Freshman Composition	3	MA112	Calculus for Business & Life Science	4
		<u>15</u>	HU251	Humanities I	4
					<u>16</u>
Second Year					
EN210	Research Paper Process	3	BL380	Hematology	3
BL204	General Microbiology	4		or	
CS101	Intro. to Microcomputer Applications	3	BL480	Advanced Clinical Microbiology	4
	Social Science Elective (Gen Ed)	3	BL330	Animal Physiology	4
MA207	Principles of Statistical Methods	3		Social Science Elective (Gen Ed)	3
		<u>16</u>	CH220	Survey of Organic Chemistry	4
			SD101	Fund. of Speech Communication	3
					<u>17-18</u>
Third Year					
BL422	Parasitology	3	BL423	Immunology	4
BL220	Genetics	4	CH232	Instrumental Analysis	4
CH231	Quantitative Analysis	4	CH351	Biochemistry	4
	Cultural Diversity (Gen Ed)	3	BL380	Hematology	3
	Aesthetics	2-3		or	
		<u>16-17</u>	BL480	Advanced Clinical Microbiology	4
					<u>15-16</u>

Computer and Mathematical Sciences

See College of Engineering, Mathematics and Business, page 231.

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.

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

Career Description:

Computer Programmer — designs, writes and tests computer programs; programming can be done at the applications level or the systems level.

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.

Bachelor of Science

Career Choices:

Computer Programmer

Systems Analyst

Database Administrator

Student Profile:

Do you ...

feel comfortable with numerical problems?

like working with computers?

enjoy the challenge of problem-solving?

Computer and Mathematical Sciences

Computer and Mathematical Sciences Bachelor of Science

Departmental Requirements (70 credits)

CS101	Intro. to Microcomputer Applications	3
CS105	Intro. to Computer Programming	3
CS121	Survey of Computer Science	3
CS201	Data Structures and Algorithms	3
CS205	Computer Organization and Architecture	3
CS211	Database Applications	3
CS221	Computer Networks	3
CS290	Independent Study in Computer Science	3
CS312	File and Database Management	3
CS321	Computer Graphics	3
CS333	Systems Programming	3
CS334	Operating Systems Concepts	3
CS418	Software Engineering	3
CS490	Research Topics in Computer Science	4
MA143, 144	Calculus for Engineering I, II or	8
MA151, 152	Calculus I, II	
MA215	Fundamental Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA261	Intro. to Numerical Methods	3
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	4
MA351	Graph Theory	3

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

FALL		SPRING			
First Year					
MA150	Precalculus Mathematics (or elective)	4	MA151	Calculus I	4
CS101	Intro. to Microcomputer Applications	3	CS121	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3		Science Course	3-4
EN110	Freshman Composition	3		Electives	<u>5</u>
	Elective	<u>2</u>			15-16
		15			
Second Year					
MA215	Fund. Concepts of Mathematics	3	MA216	Discrete Mathematics and Problem Solving	3
MA152	Calculus II	4	CS211	Database Applications	3
CS201	Data Structures and Algorithms	3	SD101	Fund. of Speech Communication	3
EN210	Research Paper Process	3		Science Course	4
	Elective	<u>3</u>	CS290	Independent Study in Computer Science	<u>3</u>
		16			16
Third Year					
HU251	Humanities I	4	MA351	Graph Theory	3
MA308	Probability and Mathematical Statistics	4	CS334	Operating Systems Concepts	3
CS205	Computer Organization and Architecture	3	CS221	Computer Networks	3
		<u>3</u>		Electives	<u>6</u>
CS333	Systems Programming	3			15
	Elective	<u>3</u>			
		16			
Fourth Year					
MA261	Intro. to Numerical Methods	3	SO103	Cultural Diversity	3
MA305	Computational Linear Algebra	3	HU252	Humanities II	4
CS418	Software Engineering	3	CS321	Computer Graphics	3
CS312	File & Database Management	3	CS490	Research Topics in Computer Science	4
	Elective	<u>3</u>		Elective	<u>3</u>
		15			16

Computer Engineering

See College of Engineering, Mathematics and Business, page 231.

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 theoretical 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 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 and sales.

Bachelor of Science

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 applying theories in laboratories?
like working with mechanical systems?

Computer Engineering

Computer Engineering Bachelor of Science

Departmental requirements:

Mathematics

MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA207	Principles of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1
MA243	Calculus and Linear Algebra for Engineers	4
MA343	Differential Equations for Engineers	4

Computer Science

CS101	Intro. to Microcomputer Applications	3
CS105	Intro. to Computer Programming	3
CS121	Survey of Computer Science	3
CS201	Data Structures	3
CS205	Computer Organization and Architecture	3
CS221	Computer Networks	3
CS333	Systems Programming	3
CS334	Operating Systems Concepts	3

Sciences

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

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
EG491	Senior Design Projects I	3
EG495	Senior Design Projects II	3
RS460	Control Systems	4
	Engineering Electives	9

Technical electives

EE425	Digital Signal Processing	3
EE440	Electromagnetic Fields	3
EM220	Statics	3
MA215	Fund. Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA308	Probability & Mathematical Statistics	4
RS385	Robotics Engineering	3
RS430	Machine Vision & systems Integration	4

FALL

First Year

EN110	Freshman Composition	3
	Humanities/Aesthetics Elective	3
CS101	Intro. to Microcomputer Applications	3
CS105	Intro. to Computer Programming	3
MA150	Precalculus Mathematics	(4)
		<u>12-16</u>

Second Year

MA144	Calculus for Engineering II	4
PH231	Applied Physics for Engineers and Scientists I	4
CS201	Data Structures	3
CS205	Computer Organization and Architecture	3
EE250	Micro-controller Fundamentals	4
		<u>18</u>

Third Year

MA343	Differential Equations for Engineers	4
EE310	Network Analysis I	5
CS333	Systems Programming	3
EE370	Electronics I	4
		<u>16</u>

Fourth Year

EG491	Engineering Design Project I	3
RS460	Control Systems	4
	Technical Elective	3
	Social Science Elective	3
EE420	Digital Design	4
		<u>17</u>

SPRING

EN205	Technical Report Writing	3
CS121	Survey of Computer Science	3
EE125	Digital Fundamentals	4
MA143	Calculus for Engineering I	4
	Social Science Elective	3
		<u>17</u>

MA243	Calculus and Linear Algebra for Engineers	4
PH232	Applied Physics for Engineers and Scientists II	4
EE210	Circuits and Machines	4
SD101	Fund. of Speech Communication	3
		<u>15</u>

MA207	Prin. of Statistical Methods	3
CS334	Operating Systems Concepts	3
EE355	Micro-controller Systems	4
CS221	Computer Networks	3
	Technical Elective	3
		<u>16</u>

EG495	Engineering Design Project II	3
	Humanities/Aesthetics Elective	3
	Cultural Diversity	3
	Technical Elective	3
	Social Science Elective	3
		<u>16</u>

Computer Science

See College of Engineering, Mathematics and Business, page 231.

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 workforce.

Career Description:

Computer Programmer — designs, writes and tests computer programs; programming can be done at the applications level or the systems level.

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.

Bachelor of Science

Career Choices:

Computer Programmer

Systems Analyst

Database Administrator

Student Profile:

Do you...

like working with computers?

enjoy the challenge of problem-solving?

Computer Science

Computer Science Bachelor of Science

Departmental Requirements (58 credits)

CS101	Intro. to Microcomputer Applications	3
CS105	Intro. to Computer Programming	3
CS121	Survey of Computer Science	3
CS201	Data Structures and Algorithms	3
CS205	Computer Organization and Architecture	3
CS211	Database Applications	3
CS221	Computer Networks	3
CS290	Independent Study in Computer Science	3
CS312	File and Database Management	3
CS321	Computer Graphics	3
CS333	Systems Programming	3
CS334	Operating Systems Concepts	3
CS418	Software Engineering	3
CS490	Research Topics in Computer Science	4
MA109	Trigonometry and Vectors	2
MA111	College Algebra	3
MA112	Calculus for Business and Life Science	4
MA207	Prin. of Statistical Methods	3
MA305	Computational Linear Algebra	3

Other Requirements (11 credits)

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

Total Credits: 124

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

FALL		SPRING		
First Year				
	Elective (or MA092*)	4	MA111 College Algebra	3
CS101	Intro. to Microcomputer Applications	3	CS121 Survey of Computer Science	3
CS105	Intro. to Computer Programming	3	Science Course	4
EN110	Freshman Composition	3	MA109 Trigonometry and Vectors	2
	Elective	2	Electives	2
		<u>15</u>		<u>14</u>
Second Year				
MA112	Calculus for Business and Life Sciences	4	MA305 Computational Linear Algebra	3
AC132	Principles of Accounting I	4	CS211 Database Applications	3
CS201	Data Structures and Algorithms	3	SD101 Fund. of Speech Communication	3
EN210	Research Paper Process	3	AC133 Principles of Accounting II	4
	Elective	3	CS290 Computer Science Project	3
		<u>17</u>		<u>16</u>
Third Year				
MA207	Prin. of Statistical Methods	3	BA121 Introduction to Business	3
CS205	Computer Organization and Architecture	3	CS334 Operating Systems Concepts	3
CS333	Systems Programming	3	CS221 Computer Networks	3
	Electives	7	Electives	6
		<u>16</u>		<u>15</u>
Fourth Year				
CS418	Software Engineering	3	CS321 Computer Graphics	3
CS312	File & Database Management	3	CS490 Research Topics in Computer Science	4
	Electives	9	SO103 Cultural Diversity	3
		<u>15</u>	Electives	6
				<u>16</u>

*If MA092 is taken, four additional elective credits are necessary.

Criminal Justice

See College of Arts, Letters
and Social Sciences, page 211.

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 Law Enforcement Officers Training Council (MLEOTC). 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 MLEOTC certification as well as Michigan Firefighter Training Council certification.

Career Description:

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?

Criminal Justice

Criminal Justice Corrections Emphasis Bachelor of Science

General Education Requirements (25* credits)

Major Requirements (46 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ130	Client Relations in Corrections	3
CJ140	Correctional Client Growth and Development	3
CJ220	Institutional Corrections	3
CJ240	Community Based Corrections	3
CJ250	Correctional Law	3
CJ319	Substantive Criminal Law	3
CJ321	Ethical Issues in Public Safety	3
CJ330	Correctional Casework	3
CJ345	Statistics and Design for Public Safety	4
CJ355	Juvenile Justice	3
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9

Support Courses (20 credits)

PS110	Intro. to American Government & Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology**	3
SO214	Criminology**	3
SO103	Cultural Diversity**	3

Minor (20 credits)

Electives (13 credits)

*Eight hours included in support courses.
**B.S. requirement.

FALL		SPRING			
First Year					
CJ101	Intro. to Criminal Justice	3	SD101	Fund. of Speech Communication	3
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
CJ110	Introduction to Corrections	3	CJ130	Client Relations in Corrections	3
EN110	Freshman Composition Elective	3		Elective	5
		<u>15</u>			<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
EN210	Research Paper Process	3	PY259	Abnormal Psychology	3
PY101	Introduction to Psychology Elective	4	SO103	Cultural Diversity	3
		<u>2</u>		Natural Science Elective	4
		<u>15</u>			<u>16</u>
Third Year					
CJ250	Correctional Law	3	CJ330	Correctional Casework	3
SO214	Criminology	3	CJ321	Ethical Issues in Public Safety	3
	Natural Science Elective	4		Humanities Elective	4
	Elective	3	CJ345	Statistics & Design for Public Safety	4
	Minor	3	CJ355	Juvenile Justice	3
		<u>16</u>			<u>17</u>
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>			<u>15</u>

Bachelor's Degrees

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
CJ201	Firearms Training	1
CJ243	Investigation	3
CJ313	Crisis Intervention of Deviant Behavior**	3
CJ319	Substantive Criminal Law**	3
CJ321	Ethical Issues in Public Safety	3
CJ345	Statistics and Design for Public Safety	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law**	3
CJ444	Criminalistics	4

Support Courses (60 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany***	2
CH115	General Chemistry I****	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	3
CH232	Instrumental Analysis	3
CH351	Introductory Biochemistry	4
HE190	Prehospital Emergency Care & Crisis Intervention I**	3
HE191	Prehospital Emergency Care & Crisis Intervention II**	3
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
RA197	Physical Fitness for Law Enforcement*****	2
SO214	Criminology	3

Electives (2-5 credits)

- *Sixteen hours included in support
- **MLEOTC courses
- ***B.S. requirement
- ****Repeated twice
- *****or MA151/MA143

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	SD101 Fund. of Speech Communication 3
EN110 Freshman Composition 3	BL109 General Biology 4
MA111 College Algebra 3	<u>15</u>
17	
Second Year	
CH225 Organic Chemistry I 4	CH226 Organic Chemistry II 4
CH231 Quantitative Analysis 3	CH232 Instrumental Analysis 3
BL110 Zoology 2	BL111 Botany 2
CJ201 Firearms 1	PY259 Abnormal Psychology 3
CJ243 Investigation 3	EN210 Research Paper Process 3
PY101 Introduction to Psychology 4	Elective 3
17	18
Third Year	
CH351 Biochemistry 4	NS101 Conceptual Physics 3
Humanities Elective 4	SO214 Criminology 3
PS110 Intro. to American Government and Politics 4	CJ345 Statistics & Design for Public Safety 4
Elective 4	CJ402 Criminal Justice Internship 3-9
18	17
Fourth Year	
CJ319 Substantive Criminal Law* 3	CJ321 Ethical Issues in Public Safety* 3
Electives 2	CJ313 Crisis Intervention of Deviant Behavior* 3
CJ401 Senior Seminar 3	CJ444 Criminalistics* 4
HE190 Pre-Hospital Emergency Care & Crisis Intervention I* 3	CJ409 Procedural Criminal Law* 3
RA197 Physical Fitness for Law Enforcement 1	HE191 Prehospital Emergency Care & Crisis Intervention II* 3
12	17

*MLEOTC course.
**MLEOTC students only.

Criminal Justice

Criminal Justice: Generalist Emphasis Bachelor of Science

General education requirements (25* credits)

Major requirements (42 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Correction	3
CJ345	Statistics and Design for Public Safety	4
CJ401	Senior Seminar	3
	Other CJ Classes****	26

Support courses** (20 credits)

PS110	Intro. to American Government and Politics	4
PS120	Legal Processes	3
PY101	Intro. to Psychology	4
PY259	Abnormal Psychology***	3
SO103	Cultural Diversity****	3
SO214	Criminology***	3

Electives (37 credits)

*Eight hours included in support courses.

**At least 20 hours of support or electives
at 300-400 level.

***B.S. requirement.

****Minimum 19 credit hours at 300-400 level.

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	Freshman Composition	3	SD101	Fundamentals of Speech	3
CJ	Elective	3	CJ	Elective	3
		<u>3</u>			<u>3</u>
		15			13
Second Year					
CJ110	Introduction to Corrections	3	PY259	Abnormal Psychology	3
EN210	Research Paper Process	3		Humanities Elective	4
PY101	Introduction to Psychology	4		Natural Science Elective	4
	Humanities Elective	4	CJ	Elective	3
CJ	Elective	3	SO103	Cultural Diversity	3
		<u>3</u>			<u>3</u>
		17			17
Third Year					
	Elective	3	SO214	Criminology	3
CJ	Electives	6		Natural Science	4
	Elective	5	CJ345	Statistics & Design for Public Safety	4
		<u>5</u>		Electives	5
		14			16
Fourth Year					
CJ401	Seminar	3	CJ	Electives	8
	Electives	12		Electives	9
		<u>12</u>			<u>9</u>
		15			17

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 of Deviant Behavior	3
CJ319	Substantive Criminal Law	3
CJ321	Ethical Issues in Public Safety	3
CJ345	Statistics for Design and Public Safety	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4
FS101	Introduction to Fire Science	3

Support Courses (20 credits)

PS110	Intro. to American Government and Politics**	4
PS120	Intro. to Legal Processes**	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology	3
SO103	Cultural Diversity	3
SO214	Criminology	3

Electives (31 credits)

*Eight hours included in support courses.
**B.S. requirement.

FALL	SPRING
First Year	
CJ101 Intro. to Criminal Justice	3
CJ102 Police Process	3
CJ110 Introduction to Corrections	3
EN110 Freshman Composition Elective	3
16	
CJ Elective	3
PS110 Intro. to American Government and Politics	4
PS120 Introduction to Legal Processes	3
SD101 Fund. of Speech Communication	3
SO103 Cultural Diversity	3
16	
Second Year	
CJ201 Firearms	1
CJ212 Loss Control	1
EN210 Research Paper Process	3
FS101 Introduction to Fire Science	3
PY101 Introduction to Psychology	4
CJ243 Investigation	3
17	
CJ206 Law Enforcement/Loss Control Internship	3
PY259 Abnormal Psychology	3
SO214 Criminology	3
Humanities Elective	4
Natural Science Elective	4
17	
Third Year	
Elective	3
Humanities Elective	4
Natural Science Elective	4
Elective	2
13	
CJ313 Crisis Intervention of Deviant Behavior	3
CJ321 Ethics	3
CJ345 Statistics	4
Elective	5
15	
Fourth Year	
CJ401 Senior Seminar	3
CJ319 Substantive Criminal Law Electives	3
8	
CJ402 Criminal Justice Internship	3-9
CJ409 Procedural Criminal Law	3
CJ444 Criminalistics	4
Electives	6
16	

Criminal Justice

Certification 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 of Deviant Behavior**	3
CJ319	Substantive Criminal Law**	3
CJ321	Ethical Issues in Public Safety**	3
CJ345	Statistics and Design for Public Safety	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law**	3
CJ444	Criminalistics**	4
FS101	Introduction to Fire Science	3

Support Courses (28 credits)

HE190	Prehospital Emergency Care & Crisis Intervention I**	3
HE191	Prehospital Emergency Care & Crisis Intervention II**	3
PS110	Intro. to American Government and Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology***	3
RA197	Physical Fitness for Law Enforcement****	2
SO103	Cultural Diversity***	3
SO214	Criminology***	3

Electives (23 credits)

*Eight hours included in support courses

**MLEOTC courses

***B.S. requirement

****Repeated twice

FALL		SPRING			
First Year					
CJ101	Intro. to Criminal Justice	3	CJ Elective	3	
CJ102	Police Process	3	PS110	Intro. to American Government and Politics	4
CJ110	Introduction to Corrections	3	PS120	Intro. to Legal Process	3
EN110	Freshman Composition	3	SD101	Fund. of Speech Communication	3
	Elective	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
EN210	Research Paper Process	3	SO214	Criminology	3
FS101	Introduction to Fire Science	3		Humanities Elective	4
CJ243	Investigation	3		Natural Science Elective	4
	Elective	3			<u>17</u>
		<u>16</u>			
Third Year					
	Humanities Elective	4	CJ402	Criminal Justice Internship	3-9
	Natural Science	4	CJ345	Statistics & Design or Public Safety Electives	4
SO103	Cultural Diversity	3			<u>7</u>
	Elective	4			<u>14</u>
		<u>15</u>			
Fourth Year					
CJ319	Substantive Criminal Law* Electives	3	CJ321	Ethical Issues in Public Safety*	3
CJ401	Senior Seminar	3	CJ313	Crisis Intervention of Deviant Behavior*	3
RA197	Physical Fitness for Law Enforcement I**	1	CJ444	Criminalistics*	4
HE190	Pre-hospital Emergency Care and Crisis Intervention I*	3	RA197	Physical Fitness for Law Enforcement I**	1
		<u>13</u>	CJ409	Procedural Criminal Law*	3
			HE191	Pre-hospital Emergency Care and Crisis Intervention II*	3
					<u>17</u>

*MLEOTC course

**MLEOTC students only

**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 MLEOTC certification and 91 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	S0214	Criminology	3
PS110	Intro. to American Government and Politics	4		Humanities Elective	4
	Humanities Elective	4			13
		17			
Fourth Year					
CJ201	Firearms Training	1	CJ345	Statistics & Design for Public Safety	4
CJ212	Loss Control	3	CJ402	Criminal Justice Internship	3
CJ243	Investigation	3	PS120	Intro. to Legal Process	3
FS101	Introduction to Fire Science	3	PY259	Abnormal Psychology	3
PY101	Introduction to Psychology	4	S0103	Cultural Diversity	3
		14			16
Fifth Year					
CJ319	Substantive Criminal Law*	3	CJ313	Crisis Intervention of Deviant Behavior	3
CJ401	Senior Seminar	3	CJ321	Ethical Issues in Public Safety*	3
HE190	Prehospital Emergency Care and Crisis Intervention I*	3	CJ409	Procedural Criminal Law*	3
RA197	Physical Fitness for Law Enforcement**	1	CJ444	Criminalistics*	4
	Elective	4	HE191	Prehospital Emergency Care and Crisis Intervention II*	3
		14	RA197	Physical Fitness for Law Enforcement**	1
					17

*MLEOTC course
**MLEOTC students only

Criminal Justice

Criminal Justice Loss Control Emphasis Bachelor of Science

Bachelor's Degrees

General Education Requirements (25* credits)

Major Requirements (54 credits)

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3
CJ110	Introduction to Corrections	3
CJ201	Firearms Training	1
CJ206	Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3
CJ243	Investigation	3
CJ306	Security Systems	3
CJ319	Substantive Criminal Law	3
CJ341	Fire Cause & Arson Investigation	3
CJ345	Statistics	4
CJ401	Senior Seminar	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS321	Industrial Fire Protection	3

Support Courses (32 credits)

CS101	Intro. to Microcomputer 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

Electives (13 credits)

*Eight hours included in support courses.
**B.S. requirement.

FALL		SPRING		
First Year				
CJ101	Intro. to Criminal Justice	3	FS111 Hazardous Materials	3
CJ102	Police Process	3	PS110 Intro. to American Government and Politics	4
CJ212	Loss Control	3	PS120 Introduction to Legal Process	3
EN110	Freshman Composition	3	SD101 Fund. of Speech Communication	3
PY101	Introduction to Psychology	4	SO214 Criminology	3
		16		16
Second Year				
CJ110	Introduction to Corrections	3	CJ206 Law Enforcement/Loss Control Internship	3
CJ201	Firearms Training	1	CS101 Intro. to Microcomputer Applications	3
FS101	Introduction to Fire Science	3	PY259 Abnormal Psychology	3
CJ243	Investigation	3	Humanities Elective	4
EN210	Research Paper Process	2	Natural Science Elective	4
TC110	Industrial Safety	15		17
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
FS312	Hazardous Materials Management	4	FS321 Industrial Fire Protection	3
		15	CJ345 Statistics & Design for Public Safety	4
				16
Fourth Year				
CJ401	Senior Seminar	3	CJ402 Criminal Justice Internship	3-9
CJ319	Substantive Criminal Law	3	CJ409 Procedural Criminal Law	3
MN365	Human Resource Management Electives	3	CJ444 Criminalistics	4
		3	MN451 Labor Law	4
		12	Electives	3
				17

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
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	3
or		3
FS401	Fire Science Senior Seminar	3-9
CJ402	CJ Internship	3-9
or		3-9
FS403	Fire Science Internship	3
CJ409	Procedural Criminal Law**	4
CJ444	Criminalistics	3
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics and Pumps	3
FS205	Fire Protection Systems & Equipment	3
FS211	Tactics & Strategy	3
Support Courses (28 credits)		
HE190	Prehospital Emergency Care & Crisis Intervention I**	3
HE191	Prehospital Emergency Care & Crisis Intervention II**	3
PS110	Intro. to American Government and Politics	4
PS120	Intro. to Legal Processes	3
PY101	Introduction to Psychology	4
PY259	Abnormal Psychology***	3
RA197	Physical Fitness for Law Enforcement****	2
SO214	Criminology***	3
SO103	Cultural Diversity***	3

Electives (17 credits)

*Eight hours included in support courses

**MLEOTC courses

***B.S. requirement

****Repeated twice

FALL			SPRING		
First Year					
CJ101	Intro. to Criminal Justice	3	PS110	Intro. to American Government and Politics	4
CJ102	Police Process	3	PS120	Intro. to Legal Process	3
EN110	Freshman Composition	3	SD101	Fund. of Speech Communication	3
FS101	Introduction to Fire Science Elective	3		Natural Science Electives	4
		<u>15</u>	FS111	Hazardous Materials	<u>3</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
EN210	Research Paper Process Elective	3		Humanities Elective	4
		<u>17</u>			<u>16</u>
Third Year					
	Humanities Elective	4	SO214	Criminology	3
	Natural Science Elective	4	CJ402	Criminal Justice Internship	3-9
SO103	Cultural Diversity Electives	3	or		3-9
		<u>3</u>	FS403	Fire Science Internship	4
		<u>14</u>	CJ345	Statistics & Design for Public Safety Electives	<u>4</u>
					<u>14</u>
Fourth Year					
CJ319	Substantive Criminal Law*	3	CJ321	Ethical Issues in Public Safety*	3
RA197	Physical Fitness for Law Enforcement**	1	CJ313	Crisis Intervention of Deviant Behavior*	3
CJ401	Criminal Justice Senior Seminar	3	CJ444	Criminalistics*	4
or		3	RA197	Physical Fitness for Law Enforcement*	1
FS401	Fire Science Senior Seminar Electives	4	CJ409	Procedural Criminal Law*	3
HE190	Pre-hospital Emergency Care and Crisis Intervention I	3	HE191	Prehospital Emergency Care and Crisis Intervention II	3
		<u>3</u>			<u>3</u>
		<u>14</u>			<u>17</u>

*MLEOTC course **MLEOTC students only

Early Childhood Education

See Teacher Education, page 216.

Bachelor of Arts
Bachelor of Science

Career Choices:

Administrative position
Teaching position
Social Worker

Student Profile:

Are you ...
interested in the care and
development of children from
birth to age 8?

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 Description:

Graduates of this program normally seek administrative or teaching positions with day care centers (private, public, and military base centers), head start programs, social work agencies, and in non-certified public and private school programs, and other facilities designed for the care and development of young children.

Administrative Position — acts as a center's director or assistant director.

Teaching Position — acts as lead teacher, assistant teacher or Head Start teacher.

Social Worker — works in social work agencies (need social work certification).

Early Childhood Education

Early Childhood Education Bachelor of Science or Bachelor of Arts

AT235	Art for Classroom Teacher	3
BL105	Function of the Human Body	4
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
EN110	Freshman Composition	3
EN210	Research Paper Process	3
	<i>or</i>	
EN215	Intro. to Literature & Research	3
HE104	Nutrition for Early Childhood	3
HE181	First Aid	1
HU251	Humanities I	4
HU	Elective	4
MU2	Music for Classroom Teacher	3
NS	Elective	4
PY155	Lifespan Development	
	<i>or</i>	
PY265	Child & Adolescent Development	3
PY301	Exceptional Child & Adolescent	3
SD101	Fund. of Speech Communication	3
S0113	Sociology of the American Family	3
	Approved Minor	20-24
	Free Electives	

See
department
for required
courses

Bachelor's Degrees

Education — Elementary Teaching Secondary Teaching

See Department of Education, page 216,
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 at the end of their sophomore year.

Details of current teaching certificates, program requirements, policies and procedures should be obtained at the Department of Teacher Education at 906-635-2811.

You will find majors and minors which are acceptable as teaching options in the Minors section of this catalog.

Career Description:

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 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.

**Contact the Department
of Teacher Education for
program requirements.**

Electrical Engineering

See College of Engineering, Mathematics and Business, page 231.

Program Description:

Electrical engineering 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 control systems, or electrical/mechanical*. The *digital systems option* will give you additional knowledge in digital design, digital signal processing and micro-controller systems. The *robotics and control systems 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 and sales.

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 mechanical systems?

Electrical Engineering

Electrical Engineering Bachelor of Science

Departmental Requirements (97 Credits)

Mathematics

MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA207	Prin. of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1
MA243	Calculus and Linear Algebra for Engineers	4
MA343	Differential Equations for Engineers	4

Sciences

CH108	Applied Chemistry	4
PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Engineering

EG101	Introduction to Engineering	2
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
EE370	Electronic Devices	4
EE375	Electronic Circuits	4
EE440	Electromagnetic Fields	3
EG265	"C" Programming	3
EG491	Engineering Design Project I	3
EG495	Engineering Design Project II	3
EM220	Statics	3
RS460	Control Systems	4

Students must complete one of the following options:

Digital Systems Engineering Electives

EE355	Microcontroller Systems	4
EE420	Digital Design	4
EE425	Digital Signal Processing	3

Robotics and Automation Electives

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

Electrical-Mechanical Engineering Electives

(Select EM320 and 3 others)		
ME225	Strength of Materials	3
ME275	Engineering Materials	3
EM320	Dynamics (Required)	4
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3

FALL		SPRING			
First Year					
EN110	Freshman Composition	3	EN205	Technical Report Writing	3
	Humanities or Aesthetics	3	CH108	Applied Chemistry	4
EG101	Introduction to Engineering	2	EE125	Digital Fundamentals	4
MA150	Pre-calculus Mathematics (if needed)	4	EE105	Fabrication Fundamentals	1
	Social Science Elective	3	MA143	Calculus for Engineering I	4
		<u>11</u>			<u>16</u>
Second Year					
MA144	Calculus for Engineering II	4	MA243	Calculus and Linear Algebra for Engineers	4
PH231	Applied Physics for Engineers and Scientists I	4	PH232	Applied Physics for Engineers and Scientists II	4
EE210	Circuits and Machines	4	EM220	Statics	3
EE250	Microcontroller Fundamentals	4	SD101	Fund. of Speech Communication	3
		<u>16</u>	EG265	"C" Programming	3
					<u>17</u>
Third Year					
MA343	Differential Equations for Engineers	4	MA207	Prin. of Statistical Methods	3
EE310	Network Analysis I	5	MA208	Statistical Applications for Quality Control	1
EE330	Electro-Mechanical Systems	4	EE315	Network Analysis II	3
EE370	Electronic Devices	4	EE375	Electronic Circuits	4
		<u>17</u>		Engineering Elective	4
					<u>15</u>
Fourth Year					
EG491	Engineering Design Project I	3	EG495	Engineering Design Project II	3
EE440	Electromagnetic Fields	3		Humanities or Aesthetics	4
RS460	Control Systems	4		Engineering Elective	3
	Cultural Diversity	3		Social Science	3
	Engineering Elective	4			<u>15</u>
		<u>17</u>			

General education requirements (29 Credits)

Lower-Division Courses

EN110	Freshman Composition	3
EN205	Technical Report Writing	3
	Humanities or Aesthetics	4/3
SD101	Fund. of Speech Communication	3

Upper-Division Courses

	Humanities or Aesthetics	4
	Cultural Diversity	3
	Social Science	6

Engineering Management

See College of Engineering, Mathematics and Business, page 231.

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 accepted for a wide range of technical programs.
- Technical courses provide a focus in modern robotics and automated manufacturing methods.
- Program is designed for working adults. Most courses are offered evenings and weekends to meet the needs of employed students.
- The program is also offered at Bay de Noc Community College, North Central Michigan College, and Northwestern Michigan College. This provides students with the option of completing almost all of the degree requirements at one of these locations.

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

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
FN341	Managerial Finance	4
MN360	Principles of Management	3
MN471	Production Management	3

School of Engineering and Technology (24-25 Credits)

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
EE210	Circuits and Machines	4
RS365	Programmable Logic Controllers	3
RS280	Robotics Technology	3
RS480	Control Systems and Automation	4
	Technical Elective**	4

**Elective must be approved by an advisor in the appropriate school.

General Education* (13 Credits)

	Humanities or Aesthetics	6-8
	Natural Science Elective	3-4
BA308	Cultural Diversity	3

* Students must satisfy all University general education requirements.

FALL		SPRING		
Third Year				
AC132	Principles of Accounting I	4	AC133 Principles of Accounting II	4
RS280	Robotics Technology	3	MT225 Statics & Strength of Materials	3
MN360	Principles of Management	3	or	
MA143	Calculus for Engineering I	4	EE210 Circuits and Machines	4
	Natural Science Elective	3-4	BA Elective	3
		17-18	MA207 Principles of Statistical Methods	3
			MA208 Statistical Applications for Quality Control	1
			Technical Elective	4
				18-19
Fourth Year				
AC332	Cost Accounting	4	RS365 Programmable Logic Controllers	3
FN245	Principles of Finance	3	EC302 Managerial Economics	4
	or		BA308 Managing Cultural Differences	3
FN341	Managerial Finance	4	Humanities or Aesthetics	4/3
RS480	Automated Manufacturing Systems	4		13-14
MN471	Production Management	3		
	Humanities or Aesthetics	3-4		
		17-18		

English Language and Literature

See College of Arts, Letters and Social Sciences, page 211.

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.

Career Description:

A sound liberal arts education is a satisfactory and sought-after preparation for many vocational and professional areas: communication and 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

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?

Core requirements to the three bachelor's degrees:

EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3

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, 42 semester hours of credit in the courses specified below (or their equivalents) plus sufficient additional hours of free electives to make up a required total of 124 hours. EN215 Introduction to Literature and Research is the recommended second composition course. Majors in English must complete one minor in an area to be approved by the chair of the department.

Required Courses:

EN231	American Literature I	3
EN232	American Literature II	3
EN233	English Literature I	3
EN234	English Literature II	3
EN420	History of the English Language	3
EN421	History of Literary Criticism	3
EN430	Chaucer	3
EN431	Milton & the Metaphysical Poets	3
EN432	Shakespeare	3
	Second Year Modern Foreign Language	8

Nine semester hours must be selected from:

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

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

All students with a major or minor in English should pick up a course rotation sheet from the English Department office, room 219 in the library. Most 300 and 400 EN courses rotate and are taught alternate years.

FALL		SPRING		
First Year				
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication*	3
	First-year Foreign Language	4	First-year Foreign Language	4
	General Education	3	General Education	3
	General Education or Minor	3-4	General Education or Minor	3-4
	General Education or Minor	3-4	General Education or Minor	3-4
		16-17		16-17
Second Year				
EN215	Intro. to Literature and Research	3	EN Option	3
EN233	English Literature I	3	EN234 English Literature II	3
EN231	American Literature I	3	EN231 American Literature II	3
	General Education or minor	3	General Education or Minor	3
	or		Second-year Foreign Language	4
	English Option	4		16
	Second-year Foreign Language	4		
		16		
Third or Fourth Years (see course rotation list on page 219).				
Fall/Even		Spring/Odd		
EN331	Development of the Novel in England and America II/Option	3	EN334 Approach to Poetry/Option	3
	or		EN321 Rhetoric and Composition Theory/Option	3
EN421	History of Literary Criticism	3	EN431 Milton	3
EN430	Chaucer	3	General Education or Minor	3-4
	General Education or Minor	3-4	General Education or Minor	3-4
	General Education or Minor	3-4		15-17
		15-17		
Fall/Odd		EN333		
EN330	Development of the Novel in England and America I/Option	3	Studies in the Drama: the Genre and Theater in Context	3
EN332	Short Story/Option	3	EN432 Shakespeare	3
EN322	Structure of the English Language	3	EN420 History of the English Language	3
	General Education or Minor	3-4	General Education or Minor	3-4
	General Education or Minor	3-4	General Education or Minor	3-4
		15-17		15-17

*May be taken fall or spring semester.

English Language and Literature

English Language and Literature — Elementary Teaching Certification Bachelor of Arts

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

1. 47 semester credit hours in the courses specified below or their equivalents;
2. The planned program for elementary teachers, excluding the English section; and
3. 21 credits in teacher education courses TE150, 250, 301, 401, and 402.

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

Literature	15
EN231 American Literature I	3
EN232 American Literature II	3
EN233 English Literature I	3
EN234 English Literature II	3
EN335 Children's Literature	3

Non-Literature	9
EN220 Advanced Composition	3
EN320 Responding to Writing or	3
ED420 Emergent Literacy	3
EN322 Structure of the English Language	3

Select nine credits from:

EN235 Survey of Native American Literature	3
EN332 The Short Story	3
EN333 Studies in the Drama: The Genre and Theatre in Context	3
EN334 Approach to Poetry	3
EN432 Shakespeare	3

Select six credits from:

EN236 Literature and Culture	3
HU255 World Mythology	3
EN321 Rhetoric and Composition Theory or	3
SD307 Classical/Contemporary Rhetoric	3
EN420 History of the English Language	3

Other major requirement:

Second Year Foreign Language	8
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FALL		SPRING	
First Year			
SD101 Fund. of Speech Communication*	3	HU251	4
EN110 Freshman Composition*	3	First-year Foreign Language	4
TE150 Reflections on Learning & Teaching	3	MA110 Explorations in Mathematics	3
Planned Program - Science	4	Planned Program - Science	3
First-year Foreign Language	4	CS101 Intro. to Microcomputer Applications	3
	<u>17</u>		<u>17</u>
Second Year			
EN215 Intro. to Literature and Research*	3	EN220 Advanced Composition	3
TE250 Student Diversity and Schools*	3	Second-year Foreign Language	4
EN233 English Literature I	3	EN234 English Literature II	3
MA103 Number Systems and Problem Solving (MA092 required)	4	MA104 Geometry and Measurement	4
Second-year Foreign Language	4	PY265 Child & Adolescent Development	3
	<u>17</u>		<u>17</u>
Third Year			
TE301 Students and the Contexts of Learning	4	EN232 American Literature II	3
EN231 American Literature I	3	EN335 Children's Literature	3
EN322 Structure of the English Language	3	Planned Program - Social Science	4
EN320 Responding to Writing	3	EN Option	3
or	3	Planned Program - Social Science	4
ED420 Emergent Literacy	3		<u>17</u>
Planned Program - Social Science	4		
	<u>17</u>		
Fourth Year			
Planned Program - Social Science	4	TE402 Teaching, Learning and Assessment in the Classroom II	6
TE401 Teaching, Learning and Assessment in the Classroom I	5	EN Option	3
EN Option	3	EN Option	3
EN Option	3	EN Elective	3-4
	<u>15</u>		<u>15-16</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>

*May be taken fall or spring semester.

English Language and Literature

English Language and Literature — Secondary Teaching Certification Bachelor of Arts

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

- 50 semester hours of credit in the courses specified below or their equivalents;
- A minor approved for teacher certification; and
- 21 credits in teacher education courses TE150, 250, 301, 401, and 402.

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

Literature 1	5
EN231 American Literature I	3
EN232 American Literature II	3
EN233 English Literature I	3
EN234 English Literature II	3
EN421 History of Literary Criticism	3

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

Select six credits from each of the following categories:

Genre	6
EN330 Development of the Novel in England and America I	3
or	
EN331 Development of the Novel in England and America II	3
EN332 The Short Story	3
EN333 Studies in the Drama: The Genre and Theatre in Context	3
EN334 Approach to Poetry	3

Major Authors	6
EN430 Chaucer	3
EN431 Milton and the Metaphysical Poets	3
EN432 Shakespeare	3
EN433 Seminar in Major American and English Writers	3

Optional	6
EN221 Creative Writing	3
EN235 Survey of Native American Literature	3
EN321 Rhetoric and Composition Theory	3
EN322 Structure of the English Language	3
EN330 Development of the Novel in England and America I	3
EN331 Development of the Novel in England and America II	3
EN332 The Short Story	3

FALL		SPRING	
First Year			
SD101 Fund. of Speech Communication*	3	EN110 Freshman Composition*	3
First-year Foreign Language	4	First-year Foreign Language	4
TE150 Reflections on Learning*	3	TE150 Reflections on Learning*	3
or		or	
General Education		General Education	
or		or	
Minor		Minor	
General Education or Minor	3	General Education or Minor	3
General Education or Minor	3-4	General Education or Minor	3-4
	16-17		16-17

Second Year			
EN215 Intro. to Literature and Research*	3	EN220 Advanced Composition	3
Second-year Foreign Language	4	Second-year Foreign Language	4
EN233 English Literature I	3	EN234 English Literature II	3
TE250 Student Diversity and Schools*	3	TE250 Student Diversity and Schools*	3
or		or	
Minor		Minor	3
or		or	
Option	3-4	EN Option	
Minor or EN Option	3-4	EN232 American Literature II	3
	16-17		16

Third Year			
EN231 American Literature I	3	TE301 Students and the Contexts of Learning	4
EN320 Responding to Writing	3	EN321 Rhetoric and Composition Theory/Option	3
EN421 History of Literary Criticism	3	EN334 Approach to Poetry/Option	3
EN331 Development of the Novel in England and America I/Option	3	EN431 Milton/Option	3
EN430 Chaucer/Option	3	General Education or Minor	3-4
	15		16-17

Fourth Year			
EN330 Development of the Novel in England and America I/Option	3	EN333 Studies in the Drama: the Genre and Theater in Context	3
EN332 The Short Story/Option	3	EN432 Shakespeare/Option	3
EN332 Structure of the English Language	3	EN420 History of the English Language	3
TE401 Teaching, Learning and Assessment in the Classroom I	5	TE402 Teaching, Learning and Assessment in the Classroom II	6
EN Option or Minor	3		15
	17		

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

*May be taken spring or fall semester.

EN333 Studies in Drama: The Genre and Theatre in Context	3
EN334 Approach to Poetry	3
EN430 Chaucer	3
EN431 Milton and the Metaphysical Poets	3
EN432 Shakespeare	3
EN433 Seminar in Major American and English Writers	3

Other Requirements:	
2nd-Year Foreign Language	8

Environmental Chemistry

See College of Natural and Health Sciences, page 245.

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 coursework 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.

The secondary teaching major, environmental chemistry/secondary education, combines a major in chemistry with an interdisciplinary minor in the natural sciences to prepare science teachers at the junior and senior high school level. Students combine a strong concern and background in environmental issues and solutions, with an interest in a career as a secondary teacher. Students complete requirements for a chemistry major with the interdisciplinary group science (DX endorsement) minor, leading to teacher certification which enables you to teach all science subjects grades 7-12. Teacher education programs at LSSU include a full fifth year teaching internship. Contact the Teacher Education Department for additional information

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 contaminant, 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.

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 Chemistry Secondary Teaching Degree

Career Choices:

Environmental Chemist
Environmental Field Technician
Field Chemist
Environmental Specialist
Physical Science Technician
Physical or Biological Scientist
Pollution Control Specialist
Laboratory Chemist
Junior/Senior High Science Teacher

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?
- an interest in a career as a teacher and mentor to students grades 7-12?

Environmental Chemistry

Environmental Chemistry Bachelor of Science

Degree Requirements

Biology (19 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
CH232	Instrumental Analysis	4
CH341	Environmental Chemistry I: Water and Water Pollution Control	4
CH342	Environmental Chemistry II: Air and Solid Wastes	4
CH351	Introductory Biochemistry	4
CH353	Introductory Toxicology	3
CH361	Physical Chemistry	4

Environmental Science (19 credits)

EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4
EV395	Junior Seminar	1
EV425	Environmental Systems Analysis	3
EV499	Senior Thesis	2
ID300	The Human Environment	3
NS103	Environmental Science	3

Other Departments (31 credits)

CS101	Intro. to Microcomputer Applications	3
MA151	Calculus I	4
MA152	Calculus II	4
MA207	Prin. of Statistical Methods	3
PH221	Elements of Physics I*	4
PH222	Elements of Physics II*	4
	Directed Elective	4
	Directed Elective	4

Directed Electives (select one of the following— minimum 3 credits)

BL130	Introduction to Remote Sensing	3
BL230	Introduction to Soils	4
BL445	Limnology	3
EV220	GPS/GIS Techniques	3
EV230	Intro. to Geographical Information Systems, GIS	3
EV285	Epidemiology	3
EV490	Independent Study in Environmental Science	3-4
GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE311	Principles of Hydrology	3
GE312	Groundwater Hydrology	3
ID300	The Human Environment	3
ID399	Internship in Environmental Chemistry	3-4

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
MA109	Trigonometry and Vectors**	2	CH116	General Chemistry II	4
MA151	Calculus I	4	EN110	Freshman Composition	3
NS103	Environmental Science	3	MA152	Calculus II	4
		<u>18</u>			<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
	Social Science Elective	3	MA207	Prin. of Statistical Methods	3
	English Composition II	3	SD101	Fund. of Speech Communication	3
CS101	Intro. to Microcomputer Applications	3		Social Science Elective	3
		<u>17</u>			<u>17</u>
Third Year					
EV313	Solid & Hazardous Waste*	3	EV425	Environmental Systems Analysis	3
	Directed Elective	4	EV395	Junior Seminar	1
CH231	Quantitative Analysis	4	CH232	Instrumental Analysis	4
BL204	General Microbiology	4	HU251	Humanities	4
		<u>15</u>	EV341	Environmental Chemistry I: Water and Water Pollution Control	4
		<u>16-17</u>			<u>16</u>
Fourth Year					
BL337	General Ecology	3	EV499	Senior Thesis	1
CH351	Introductory Biochemistry	4	CH353	Introduction to Toxicology	3
EV311	Environmental Law	3		Aesthetics Elective	3-4
CH342	Environmental Chemistry II: Air and Solid Wastes	4	CH361	Physical Chemistry	4
	Cultural Diversity Elective	2-3		Directed Elective	4
		<u>16-17</u>			<u>15-16</u>

*Taken in alternate years.

**You will be offered the chance to have course waived by examination. If taken, it can be used as a free elective.

*Competency in trigonometry is required to take physics. 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 125 semester credits are earned.

Environmental Chemistry

Environmental Chemistry Secondary Teaching Degree Chemistry Major with Interdisciplinary Group Science Teaching Minor

Degree Requirements:

Environmental Chemistry Major and Group Science Minor (76 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
CH232	Instrumental Analysis	4
CH341	Environmental Chemistry I: Water and Water Pollution Control	4
CH342	Environmental Chemistry II: Air and Solid Wastes	4
CH351	Introductory Biochemistry	4
EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
EV395	Junior Seminar	1
EV425	Environmental Systems Analysis	3
EV499	Senior Seminar	2
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL337	General Ecology	3
GE111	Physical Geology I	4
GE112	Physical Geology II	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

Support Courses (10 credits)

CS101	Intro. to Microcomputer Applications	3
MA151	Calculus I	4
MA207	Statistics	3

Other General Education (22 credits)

English	6
Social Sciences	6
Humanities	7
Speech	3

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
BL109	General Biology	4	BL110	General Zoology	2
MA151	Calculus I	4	BL111	General Botany	2
CS101	Intro. to Microcomputer Applications	3	EN110	Freshman Composition	3
		<u>16</u>		Social Science Elective	3
					<u>14</u>
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
BL337	General Ecology	3	MA207	Statistics	3
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
	English Composition II	3	SD101	Fund. of Speech Communication	3
TE150	Reflections on Learning and Teaching	3	TE250	Student Diversity and Schools	3
		<u>17</u>			<u>18</u>
Third Year					
CH231	Quantitative Analysis	4	CH232	Instrumental Analysis	4
EV311	Environmental Law	3	CH341	Environmental Chemistry I: Water and Water Pollution Control	4
GE111	Physical Geology I	4	EV395	Junior Seminar	1
	Social Science Elective	3	GE112	Physical Geology II	4
TE301	Students and the Context of Learners	4	HU251	Humanities I	4
		<u>18</u>			<u>17</u>
Fourth Year					
CH342	Environmental Chemistry II: Air and Solid Wastes	4	EV425	Environmental Systems Analysis	3
EV313	Solid & Hazardous Waste	3	EV499	Senior Seminar	2
CH351	Introductory Biochemistry	4		Aesthetics Elective	3-4
TE401	Teaching of Subject Matter to Diverse Learners	5	TE402	Crafting Teaching Practice	6
		<u>16</u>			<u>14-15</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 on Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>			<u>12</u>

Professional Courses (45 credits)

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Students and the Context of Learning	4
TE401	Teaching of Subject Matter to Diverse Learners I	5
TE402	Crafting Teaching Practice	6
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

Environmental Engineering Technology

See College of Engineering, Mathematics and Business, page 231.

Bachelor of Science

133-Hour Program

Career Choices:

Environmental Technologist

Bachelor's Degrees

Program Description:

Environmental engineering technology is a broad-based program that combines the study of science and technology.

- Science focus in environmental science and chemistry.
- Technical focus in electrical and mechanical engineering technology.
- Science and technical courses provide a mix of lecture and laboratory sessions.

Program Focus — This program provides a strong foundation in environmental science, chemistry, engineering and engineering technology.

Career Description:

The program will prepare you to manage problems in air, water and solid waste pollution. As an example, you might assist engineers in designing products or processes that generate less waste and pollution. You might also plan and conduct a study to measure pollution, and then map out a strategy for reducing it. You could also assist companies with federal and state regulations, or work in industrial waste management.

Environmental Engineering Technology

Environmental Engineering Technology Bachelor of Science

Required Courses

Engineering and Technology Courses

EG491	Engineering Design Project I	3
ET110	Applied Electricity & PLC	4
ET175	Applied Electronics	4
MT225	Statics and Strength of Materials	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME430	Thermodynamics II & Heat Transfer	4
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3
	Technical Elective	4

Environmental Science Courses

EV311	Environmental Law	2
EV341	Environmental Chemistry I	3
EV313	Solid and Hazardous Waste	3
EV425	Environmental System Analysis	3

Mathematics and Science Courses

BL204	General Microbiology	4
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
	or	
CH220	Survey of Organic Chemistry	4
CH231	Quantitative Analysis	3
CH342	Environmental Chemistry II	4
CH361	Physical Chemistry	4
GE410	Engineering Geology	4
MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
MA143	Calculus for Engineering I	4
PH221	Elements of Physics I	4
NS103	Intro. to Environmental Science	3
NS104	Intro. to Environmental Science Lab	1
MA207	Prin. of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1
MA144	Calculus for Engineering II	4

Support Courses

EN110	Freshman Composition	3
EN205	Technical Report Writing	3
CS101	Intro. to Microcomputer Applications	3
SD110	Fund. of Speech Communication	3
EC302	Managerial Economics	4

General Education Courses

	Humanities/Aesthetics	6-8
	Social Science	3
	Cultural Diversity	3

Total credits: 133

FALL		SPRING			
First Year					
MA109	Trigonometry and Vectors	2	MA143	Calculus for Engineering I	4
MA140	Algebra for Technologists	4	CS101	Intro. to Microcomputer Appl.	3
EN110	Freshman Composition	3	CH116	General Chemistry II	4
CH115	General Chemistry I	5	NS103	Intro. to Environmental Science	3
		<u>17</u>	NS104	Intro. to Environmental Science Lab	1
					<u>17</u>
Second Year					
PH221	Elements of Physics I	4	MA207	Prin. of Statistical Methods	3
MT225	Statics and Strength of Materials	3	MA144	Calculus for Engineers II	4
CH225	Organic Chemistry I	4	BL204	General Microbiology	4
	or		SD101	Fund. of Speech Communication	3
CH220	Survey of Organic Chemistry	4	MA208	Statistical Applications for Quality Control	1
EN205	Technical Report Writing	3		Cultural Diversity	3
ET110	Applied Electricity & PLC	4			<u>18</u>
		<u>18</u>			
Third Year					
	Technical Elective	4	EV311	Environmental Law	3
CH231	Quantitative Analysis	3	ME335	Fluid Mechanics	3
EV341	Environmental Chemistry I	4	ET175	Applied Electronics	4
	Social Science	3	ME336	Thermodynamics I	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4	CH342	Environmental Chemistry II	4
		<u>4</u>			<u>17</u>
		<u>18</u>			
Fourth Year					
EG491	Engineering Design Project I	3	EC302	Managerial Economics	4
	Humanities/Aesthetics	3		Humanities/Aesthetics	4
GE410	Engineering Geology	4	CH361	Physical Chemistry	4
EV313	Solid and Hazardous Waste	3	EV425	Environmental Systems Analysis	4
ME430	Thermodynamics II and Heat Transfer	4			<u>16</u>
		<u>4</u>			
		<u>17</u>			

Bachelor's Degrees

Environmental Science

See College of Natural and Health Sciences, page 245.

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?

an interest in a career as teacher and mentor to students grades 7-12?

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 (DX endorsement) major with a chemistry minor, leading to teacher certification which enables the student to teach all science subjects grades 7-12. Teacher education programs at LSSU include a full fifth year teaching internship. 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 contaminant, 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.

Environmental Science Bachelor of Science

Degree Requirements:

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 (23 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
CH232	Instrumental Analysis	4

Environmental Science (19 credits)

NS103	Environmental Science	3
EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4
EV395	Junior Seminar	1
EV499	Senior Thesis	2
ID300	The Human Environment	3

Other Departments (31 credits)

CS101	Intro. to Microcomputer Applications	3
GE311	Hydrology	3
GE111	Physical Geology I	4
MA111	College Algebra*	3
MA112	Calculus for Business and Life Sciences*	4
MA207	Principles of Statistical Methods	3
PH221	Elements of Physics I*	4
PH222	Elements of Physics II*	4

Directed Electives (select one of the following— minimum 3 credits)

BL130	Introduction to Remote Sensing	3
CH353	Introduction to Toxicology	3
CH342	Environmental Chemistry II: Air and Solid Wastes	4
EV220	GPS/GIS Techniques	3
EV230	Introduction to Geographic Information Systems, GIS	3
EV285	Epidemiology	3
EV490	Independent Study: Environmental Science	3-4
GE112	Physical Geology II	4

*Students with adequate preparation in mathematics are advised to take MA151-152 in place of MA111-112 and PH231-232 in place of PH221-222. Competency in trigonometry is required to take physics. See advisor for details. Additionally, a student is required to satisfy general education requirements (natural science requirements are met by above classes) and free electives so that 125 semester credits are earned.

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
MA109	Trigonometry and Vectors**	2	CH116	General Chemistry II	4
MA151	Calculus I	4	EN110	Freshman Composition	3
NS103	Environmental Science	3	MA152	Calculus II	4
		<u>18</u>			<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
	Social Science Elective	3	MA207	Principles of Statistical Methods	3
	English Composition II	3	SD101	Fund. of Speech Communication	3
CS101	Intro. to Microcomputer Applications	3		Social Science Elective	3
		<u>17</u>			<u>17</u>
Third Year					
EV313	Solid and Hazardous Waste*	3	EV425	Environmental Systems Analysis	3
	Directed Elective	4	EV395	Junior Seminar	1
CH231	Quantitative Analysis	4	CH232	Instrumental Analysis	4
BL204	General Microbiology	4	HU251	Humanities	4
		<u>15</u>	EV341	Environmental Chemistry I: Water and Water Pollution Control	4
		<u>16-17</u>			<u>16</u>
Fourth Year					
BL337	General Ecology	3	EV499	Senior Thesis	1
CH351	Introductory Biochemistry	4	CH353	Introduction to Toxicology	3
EV311	Environmental Law	3		Aesthetics Elective	3-4
CH342	Environmental Chemistry II: Air and Solid Wastes	4	CH361	Physical Chemistry	4
	Cultural Diversity Elective	2-3		Directed Elective	4
		<u>16-17</u>			<u>15-16</u>

*Taken in alternate years.

**You will be offered the chance to have course waived by examination. If taken, it can be used as a free elective.

Environmental Science

Environmental Science Secondary Teaching Degree Interdisciplinary Group Science Teaching Major with Chemistry Minor

Group Science Teaching Major and Chemistry Minor (72 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL337	General Ecology	3
EV311	Environmental Law	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4
EV395	Junior Seminar	1
EV499	Senior Seminar	2
GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	4
NS103	Environmental Science	3
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4
NS119	Astronomy	3
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

Support Courses (10 credits)

MA111	College Algebra	3
MA112	Calculus for Business and Life Sciences	4
MA207	Statistics	3

Other General Education (22 credits)

English	6
Social Science	6-8
Aesthetics	7-8
Speech	3

Professional Courses (45 credits)

TE150	Reflections on Learning	3
TE250	Student Diversity and Schools	3
TE301	Students and the Context of Learning	4
TE401	Teaching of Subject Matter to Diverse Learners	5
TE402	Crafting Teaching Practice	6
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

FALL		SPRING			
First Year					
BL109	General Biology	4	BL110	General Zoology	2
CH115	General Chemistry I	5	BL111	General Botany	2
EN110	Freshman Composition	3	CH116	General Chemistry II	4
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
		<u>16</u>		English Composition II	<u>3</u>
					15
Second Year					
TE150	Reflections on Learning and Teaching	3	CH226	Organic Chemistry II	4
CH225	Organic Chemistry I	4	MA112	Calculus for Business & Life Sciences	4
MA111	College Algebra	3	NS103	Environmental Science	3
	Social Science Elective	3	MA207	Statistics	3
CS101	Intro. to Microcomputer Applications	3	TE250	Student Diversity and Schools	3
		<u>16</u>			<u>17</u>
Third Year					
CH231	Quantitative Analysis	4		Aesthetics Elective	3-4
GE111	Physical Geology I	4	EV395	Junior Seminar	1
BL337	General Ecology	3	NS119	Astronomy	3
HU 251	Humanities I	4	CH232	Instrumental Analysis	4
		<u>15</u>	TE301	Students and the Context of Learning	<u>4</u>
					15-16
Fourth Year					
GE215	Historical Geology	4	EV341	Environmental Chemistry I: Water and Water Pollution Control	4
EV311	Environmental Law	3	EV499	Senior Seminar	2
	Social Science Elective	3	GE112	Physical Geology II	4
TE401	Teaching of Subject Matter to Diverse Learners	5	TE402	Crafting Teaching Practice	6
		<u>15</u>			<u>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>

Exercise Science

See College of Natural and Health Sciences, page 245.

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.

The athletic training concentration is designed to prepare you for a career in athletic training and to sit for the National Athletic Trainers' Association (NATA) Board of Certification examination. In order to become a NATA Certified Athletic Trainer (ATC), you must complete the course work outlined in the NATA's "Competencies in Athletic Training," complete the necessary clinical observation hours and possess a bachelor's degree. The Lake Superior State University Athletic Training Program is designed to allow you to achieve this criteria and prepare you for a career in the profession of athletic training.

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.

Certified Athletic Trainer — works in secondary schools, colleges and universities; conditioning and rehabilitation in professional sports; sports medicine clinics; and industry.

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.

Bachelor of Science

Concentration in Athletic Training

Career Choices:

Certified Athletic Trainer
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 lifestyle?
have good communication skills?
possess critical thinking skills?
have a high level of manual dexterity?

Exercise Science

Exercise Science Bachelor of Science

Exercise Science Requirements (44 credits)

ES141	Introduction to Movement	3
ES242	Sports Medicine	3
ES248	Psychology of Sport and Performance and Coaching	3
ES262	Exercise Physiology I	3
ES268	Fitness Evaluation I - Field Tests	3
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
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 (33)

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
HE208	Nutrition	2
HE232	Pathophysiology	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	Psychological Aspects of Exercise and Athletic Rehabilitation	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
RC101	Intro. To Recreation & Leisure Services	3
RC105	Program Development and Leadership in Recreation & Leisure Services	3
RC212	Instructional Methods in Adapted Aquatics	2
RC240	Foundations of Therapeutic Recreation	3
RC482	Administration of Recreation & Leisure Services	4

FALL		SPRING			
First Year					
BL121	Anatomy & Physiology I	4	BL122	Anatomy & Physiology	4
EN110	Freshman Composition	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	PY101	Introduction to Psychology	4
		<u>17</u>			<u>17</u>
Second Year					
CH105	Life Chemistry II	4	EN210	Research Paper Process	3
ES242	Sports Medicine	3	ES295	Practicum	1
ES248	Psychology of Sport and Performance and Coaching	3	ES362	Exercise Physiology II	3
ES262	Exercise Physiology I	3	HE208	General Electives	3
	Humanities	4		Nutrition	2
		<u>17</u>		Humanities	4
					<u>16</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	ES358	Research Methods in Exercise Science	3
ES/RC	Elective	3	ES390	Recreation Leadership Apprenticeship	1
SD101	Fund. of Speech Communication	3	ES/RC	Elective	2
		<u>15</u>		General Electives	3
					<u>15</u>
Fourth Year					
	Cognate Elective	6		Cognate Elective	6
ES440	Exercise Physiology Seminar	2	ES295	Practicum	1
ES444	Exercise Prescription	2	ES390	Recreation Leadership Apprenticeship	1
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	6			
	(following either 3rd or 4th year)				

Cognate Electives (12 credits)

BL330	Animal Physiology	4
BL423	Immunology	4
HE190	Prehospital Emergency Care & Crisis Intervention I	3
HE191	Prehospital Emergency Care & Crisis Intervention II	3
HE209	Pharmacology	3
HM480	Grantwriting	3
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4
PY459	Physiological Psychology	3

Elective credits (approximately 11) and general education requirements must be completed so that at least 125 semester credits have been earned.

Exercise Science Athletic Training Concentration Bachelor of Science

Exercise Science with Athletic Training Concentration Requirements (46 credits)

ES141	Introduction to Movement	3
ES230	Athletic Training I	3
ES232	Athletic Training II	3
ES234	Preventative Taping Techniques	1
ES262	Exercise Physiology I	1
ES268	Fitness Evaluation I - Field Tests	2
ES301	Athletic Training Practicum I	1
ES302	Athletic Training Practicum II	1
ES344	Kinesiology	3
ES345	Modalities and Therapeutic Rehabilitation in Sports Medicine	3
ES349	Orthopedic Assessment in Sports Medicine	3
ES358	Research Methods in Exercise Science	3
ES401	Athletic Training Practicum III	1
ES402	Athletic Training Practicum IV	1
ES434	Neurological Basics of Motor Learning	3
ES452	Athletic Training Administration	3
ES492	Internship	6
ES496	Selected Research Topics	3

Cognate Requirements (19 credits)

BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4
HE189	Medical First Responder	3
HE208	Nutrition	2
HE209	Pharmacology	3
MA207	Principles of Statistical Methods	3

Bachelor of Science Requirements (9 credits)

CH115	General Chemistry I	5
CH116	General Chemistry II	4

Departmental Electives (6 credits)

ES140	Health and Fitness	3
ES248	Psychology of Sport and Performance and Coaching	3
ES348	Fitness Evaluation II - Laboratory Procedures	3
ES362	Exercise Physiology II	3
ES442	Electrocardiography in Exercise Science	2
ES444	Exercise Prescription	2

Cognate Electives (6 credits)

BL220	Genetics	3
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4
PY201	Communication Skills in Counseling	3

FALL		SPRING			
First Year					
BL121	Human Anatomy and Physiology I	4	BL122	Human Anatomy and Physiology II	4
EN110	Freshman Composition	3	EN210	Research Paper Process	3
ES141	Introduction to Movement	3	ES230	Athletic Training I	3
PY101	Introduction to Psychology	4	SD101	Fund. of Speech Communication	3
		<u>14</u>	HU	Elective	<u>4</u>
					17
Second Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
CS101	Intro. to Microcomputer Applications	3	ES234	Preventative Taping Techniques	1
ES232	Athletic Training II	3	ES344	Kinesiology	3
HE189	Medical First Responder	3	PY201	Communication Skills in Counseling	3
MA207	Principles of Statistical Methods	3	HU	Elective	<u>4</u>
		<u>17</u>			15
Third Year					
ES248	Psychology of Sport and Performance and Coaching	3	ES302	Athletic Training Practicum II	1
ES262	Exercise Physiology I	3	ES349	Orthopedic Assessment in Sports Medicine	3
ES301	Athletic Training Practicum I	1	ES358	Research Methods in Exercise Science	3
ES345	Modalities and Therapeutic Rehabilitation in Sports Medicine	3	HE208	Nutrition	2
PY240	Behavior Management	3	HE209	Pharmacology	3
	Elective	<u>3-4</u>		Elective	<u>4</u>
		16-17			16
Fourth Year					
ES268	Fitness Evaluation I - Field Tests	2	ES402	Athletic Training Practicum IV	1
ES401	Athletic Training Practicum III	1	ES492	Internship	6
ES434	Neurological Basics of Motor Learning	3		Departmental Electives	<u>6</u>
ES452	Athletic Training Administration	3			13
ES496	Selected Research Topics	3			
PY385	Health Psychology	<u>3</u>			
		15			

Finance and Economics

See College of Engineering, Mathematics and Business, page 231.

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 128 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 Description:

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 Bachelor of Science

Finance & Economics Core (66 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
DP	Electives	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	Freshman Composition	3	SD101	Fund. of Speech Communication	3
MA111	College Algebra	3	MA112	Calculus for Business	4
	Natural Science Elective	3		Natural Science Elective	3
AC132	Principles of Accounting I	4		Natural Science Lab	1
	Elective	3	AC133	Principles of Accounting II	4
		<u>16</u>			<u>15</u>
Second Year					
EN210	Research Paper Process		BA211	Business Statistics	3
	or	3	EC202	Principles of Microeconomics	3
EN215	Intro. to Literature and Research		BA255	Business Law II	3
	Field Elective	4	BA231	Business Communications	3
EC201	Principles of Macroeconomics	3		Elective	4
BA254	Business Law I	3			<u>16</u>
DP	Elective	3			
		<u>16</u>			
Third Year					
FN341	Managerial Finance	4	MK281	Marketing Principles & Strategy	3
EC309	Intermediate Macroeconomics	3	FN	400-Level Elective	4
	Cultural Diversity Elective	3		Aesthetics Elective	3
	Aesthetics Elective	4		Field Electives	6
	Elective	3			<u>16</u>
		<u>17</u>			
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			<u>16</u>
	Field Elective	3			
		<u>16</u>			

Fine Arts Studies

See College of Arts, Letters and Social Sciences, page 211.

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?

For more information on the components of the Fine Arts Program, please see Dr. John Wilkinson of the College of Arts, Letters and Social Sciences.

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: advertising art and 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 Description:

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.

Fire Science

See College of Arts, Letters
and Social Sciences, page 211.

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 Description:

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.

Bachelor of Science

Emphasis in:

**Engineering
Technology**

Generalist

Hazardous Materials

Career Choices:

Fire Fighter

Fire Safety Officer

Fire Protection Systems Designer

Hazardous Materials Specialist

Student Profile:

Are you...

interested in the safety of others?

physically fit?

Fire Science

Fire Science Engineering Technology Emphasis Bachelor of Science

General Education Requirements (29* credits)

Major Requirements (41 credits)

CJ341	Fire Cause and Arson Investigation	3
CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics and Pumps	3
FS205	Fire Protection Systems & Equipment	3
FS211	Tactics & Strategy	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS312	Hazardous Materials Management	3
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3-9
FS420	Fire Science Certification	4

Support Courses (46 credits)

CS101	Intro. to Microcomputer Applications	3
EM220	Statics	3
MA109	Trigonometry & Vectors	2
MA140	Algebra for Technologists	4
MA143	Calculus for Engineering I**	4
MA144	Calculus for Engineering II**	4
MT225	Statics & Strength of Materials	3
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3
ME430	Thermodynamics II and Heat Transfer	4
PH221	Elements of Physics I	4
TC101	Construction I	3
TC102	Construction II	3
TC118	Drafting	3

Electives (7 credits)

*Four hours included in support courses.

**B.S. requirement.

FALL		SPRING			
First Year					
FS101	Introduction to Fire Science	3	CS101	Intro. to Microcomputer Applications	3
	Electives	3	TC102	Construction II	3
EN110	Freshman Composition	3	SD101	Fund. of Speech Communication	3
MA140	Algebra for Technologists	4	MA109	Trigonometry & Vectors	2
TC101	Construction I	3	FS111	Hazardous Materials	3
		<u>16</u>			<u>14</u>
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems & Equipment	3
EN205	Technical Report Writing or	3	FS211	Tactics and Strategy	3
EN210	Research Paper Process	3	MA144	Calculus for Engineering II	4
MA143	Calculus for Engineering I	4	TC118	Drafting	3
	Social Science Elective	4		Humanities Elective	4
		<u>14</u>			<u>17</u>
Third Year					
FS301	Code Enforcement Inspection and Fire Prevention	3	FS321	Industrial Fire Protection	3
NS	Life Science Elective	4	CJ341	Fire Cause & Arson Investigation	3
PH221	Physics I	4	MT225	Statics & Strength of Materials	3
FS312	Hazmat Management	3	ME335	Fluid Mechanics	3
		<u>14</u>	CJ345	Statistics & Design for Public Safety	4
					<u>16</u>
Fourth Year					
EM220	Statics	3	FS403	Fire Science Internship	3
FS401	Senior Seminar	3	FS420	Fire Management	4
ME336	Thermodynamics	3	ME430	Thermodynamics II and Heat Transfer	4
HU	Electives	4		Electives	4
	Social Science	4			<u>5</u>
		<u>17</u>			<u>16</u>

Fire Science Generalist Emphasis Bachelor of Science

General Education Requirements (33 credits)

Major Requirements (61 credits)

CJ341	Fire Cause & Arson Investigation	3
CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics & Pumps	3
FS205	Fire Protection System Equipment	3
FS211	Tactics & Strategy	3
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	3-9
FS420	Fire Science Certification	4

Minor (20 credits)

Support courses (6 credits)		
TC101	Construction I	3
TC102	Construction II	3

Electives* (28 credits)

*Must include eight hours B.S. requirements.

FALL		SPRING		
First Year				
FS101	Introduction to Fire Science	3	Social Science Elective	4
TC101	Construction I	3	Humanities Elective	4
EN110	Freshman Composition Elective	3	SD101 Fund of Speech Communication	3
		<u>6</u>	TC102 Construction II	3
		15	FS111 Hazardous Materials	<u>3</u>
				17
Second Year				
FS204	Fire Protection Hydraulics and Pumps	3	FS205 Fire Protection Systems Equipment	3
EN205	Technical Report Writing or	3	FS211 Tactics and Strategy Requirement	3
EN210	Research Paper Process	3	BS Natural Science Elective	4
	Social Science Elective	4	Natural Science Elective	<u>3</u>
	Natural Science Elective	<u>4</u>		17
		17		
Third Year				
FS301	Code Enforcement Inspection and Fire Prevention	3	FS321 Industrial Fire Protection	3
BS	Requirement	4	CJ341 Fire Cause & Arson Investigation	3
	Humanities Elective	4	Minor	6
	Minor	<u>4</u>	CJ345 Statistics for Design & Public Safety	<u>4</u>
		15		16
Fourth Year				
FS312	Hazardous Materials Management	4	FS403 Fire Science Internship	3
FS401	Senior Seminar	3	FS420 Fire Science Certification	4
	Minor	6	Minor	4
	Electives	<u>2</u>	Electives	<u>4</u>
		15		15

Fire Science

Fire Science Hazardous Materials Emphasis Bachelor of Science

General Education Requirements (25* credits)

Major Requirements (39 credits)

CJ345	Statistics and Design for Public Safety	4
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics & Pumps	3
FS205	Fire Protection System Equipment	3
FS211	Tactics & Strategy	3
FS301	Code Enforcement Inspection and Fire Prevention	3
FS312	Hazardous Materials Management	4
FS321	Industrial Fire Protection	3
FS401	Senior Seminar	3
FS403	Fire Science Internship	3-9
FS420	Fire Science Certification	4

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

*Eight hours included in support courses.

**B.S. requirement.

***or MA151/MA143

FALL		SPRING		
First Year				
FS101	Introduction to Fire Science	3	FS111 Hazardous Materials	3
EN110	Freshman Composition	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	FS205 Fire Protection Systems Equipment	3
CH225	Organic Chemistry I	4	CH226 Organic Chemistry II	4
CH231	Quantitative Analysis I	4	CH232 Instrumental Analysis	4
BL110	Zoology	3	BL111 Botany	2
EN205	Technical Report Writing	3	SD101 Fund. of Speech Communication	3
	or	3		
EN210	Research Paper Process	1		
		<u>17</u>		<u>16</u>
Third Year				
GG108	Physical Geology	4	FS321 Industrial Fire Protection	3
BL230	Soils	4	Humanities Elective	4
	Social Science Elective	4	NS102 Geology	4
	Humanities Elective	4	FS211 Tactics and Strategy	3
		<u>16</u>	CJ345 Statistics & Design for Public Safety	4
				<u>18</u>
Fourth Year				
FS401	Senior Seminar	3	FS403 Fire Science Internship	3
CH351	Biochemistry	4	FS420 Fire Management	4
FS301	Code Enforcement Inspection and Fire Prevention	3	CJ341 Fire Cause & Arson Investigation	3
		3	Social Science	4
FS312	Hazardous Materials Management	4		<u>14</u>
NS103	Environmental Science	3		
NS104	Environmental Science Lab	1		
		<u>18</u>		

Fisheries and Wildlife Management

See College of Natural and Health Sciences, page 245.

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.

Career Description:

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.

Bachelor of Science

Concentrations in
Fisheries Management
Wildlife Management

Career Choices:

Fisheries & Wildlife Biologist
 Fisheries Biologist
 Wildlife Biologist

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 Requirements

		(78-79 credits)
BL102	Careers in Natural Resources	1
BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL130	Remote Sensing	3
	<i>or</i>	
EV220	GPS/GIS Techniques	
BL140	Intro. to Fisheries & Wildlife	1
BL202	Field Botany	3
	<i>or</i>	
BL284	Forestry	4
BL220	Genetics	4
BL240	Natural History of the Vertebrates	3
BL243	Vertebrate Anatomy	4
BL280	Biometrics	3
BL330	Animal Physiology	4

BL337	General Ecology	3
BL395	Junior Seminar	1
BL440	Stream and Wetland Ecology	3
BL499	Senior Thesis	2
CH115	General Chemistry I	5
CH116	General Chemistry II	4
CH220	Survey of Organic Chemistry	4
CS101	Intro. to Microcomputer Applications	4
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
MA111	College Algebra	3
MA112	Calculus for Business & Life Sciences	4
MA207	Principles of Statistical Methods	3
SD101	Fund. of Speech Communication	3

Fisheries and Wildlife Management

Fisheries and Wildlife Management Bachelor of Science

The following courses must be successfully completed to obtain this degree:

Fisheries & Wildlife Management (24 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

FALL		SPRING			
First Year					
BL102	Careers in Natural Resources	1	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
CH115	General Chemistry I	5	BL140	Introduction to Fisheries & Wildlife	1
EN110	Freshman Composition	3	CH116	General Chemistry II	4
MA111	College Algebra	3	CS101	Intro. to Microcomputer Applications	3
		<u>16</u>	MA112	Calculus for Business & Life Science	4
					<u>16</u>
Second Year					
BL202	Field Botany	3	BL130	Remote Sensing	3
BL240	Natural History of the Vertebrates	3	BL243	Vertebrate Anatomy	4
SD101	Fund. of Speech Communication	3	BL280	Biometrics	3
EN205	Technical Report Writing	3	CH220	Survey of Organic Chemistry	4
MA207	Principles of Statistical Methods	3		Social Science Elective	3
		<u>15</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	BL395	Junior Seminar	1
		<u>16</u>			<u>14</u>
Fourth Year					
BL220	Genetics	4	BL440	Stream and Wetland Ecology	3
BL432	Fisheries Management	3	BL499	Senior Thesis	2
BL439	Wildlife Management	3		Social Science Elective	4
	Cultural Diversity Elective	3		Aesthetics Elective	3
	Elective	3		Elective	3
		<u>16</u>			<u>15</u>

Bachelor's Degrees

Fisheries and Wildlife Management Fisheries Management Concentration Bachelor of Science

The following courses must be successfully completed to obtain this degree:

Fisheries Management (24 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	6

FALL		SPRING			
First Year					
BL102	Careers in Natural Resources	1	BL110	General Zoology	2
BL109	General Biology	4	BL111	General Botany	2
CH115	General Chemistry	5	BL140	Intro. to Fisheries & Wildlife	1
EN110	Freshman Composition	3	CH116	General Chemistry II	4
MA111	College Algebra	3	CS101	Intro. to Microcomputer Applications	3
		<u>16</u>	MA112	Calculus for Business and Life Science	4
					<u>16</u>
Second Year					
BL202	Field Botany	3	BL130	Remote Sensing	3
BL240	Natural History of the Vertebrates	3	BL243	Vertebrate Anatomy	4
SD101	Fundamentals of Speech	3	BL280	Biometrics	3
EN205	Technical Report Writing	3	CH220	Survey of Organic Chemistry	4
MA207	Principals of Statistical Methods	3		Social Science Elective	3
		<u>15</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	BL395	Junior Seminar	1
	Social Science Elective	3	HU251	Humanities I	4
		<u>16</u>			<u>15</u>
Fourth Year					
BL432	Fisheries Management	3	BL440	Stream and Wetland Ecology	3
BL475	Aquatic Entomology	3	BL499	Senior Thesis	2
BL	Biology Elective	3		Biology Elective	3
	Cultural Diversity Elective	3		Aesthetics Elective	3
	Elective	3		Elective	4
		<u>15</u>			<u>15</u>

Fisheries and Wildlife Management

Fisheries and Wildlife Management Wildlife Management Concentration Bachelor of Science

The following courses must be successfully completed to obtain this degree:

Wildlife Management	(24 credits)
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			
BL102 Careers in Natural Resources	1	BL110 General Zoology	2
BL109 General Biology	4	BL111 General Botany	2
CH115 General Chemistry I	5	BL140 Intro. to Fisheries and Wildlife	1
EN110 Freshman Composition	3	CH116 General Chemistry II	4
MA111 College Algebra	3	CS101 Intro. to Microcomputer Applications	3
	16	MA112 Calculus for Business and Life Science	4
			16
Second Year			
BL202 Field Botany	3	BL130 Remote Sensing	3
BL240 Natural History of the Vertebrates	3	BL243 Vertebrate Anatomy	4
SD101 Fund. of Speech Communication	3	BL280 Biometrics	3
EN205 Technical Report Writing	3	CH220 Survey of Organic Chemistry	4
MA207 Principles of Statistical Methods	3	Social Science Elective	3
	15		17
Third Year			
BL220 Genetics	4	BL312 Ornithology	3
BL311 Mammalogy	3	BL330 Animal Physiology	4
BL337 General Ecology	3	BL339 Wildlife Ecology	3
BL Biology Elective	3	BL395 Junior Seminar	1
Aesthetics Elective	3	HU251 Humanities I	4
	16		15
Fourth Year			
BL437 Plant Ecology	3	BL440 Stream and Wetland Ecology	3
BL439 Wildlife Management	3	BL499 Senior Thesis	2
BL Biology Elective	3	BL Biology Elective	3
Cultural Diversity Elective	3	Social Science Elective	3
Elective	3	Elective	4
	16		15

Geology

See College of Natural and Health Sciences, page 245.

Bachelor's Degree

Geology

Options:

Geology:

Environmental Geology

Elementary Teaching

Secondary Teaching

Environmental Science and Geology with Environmental Geology

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?

Program Description:

Geology deals with 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 that change 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 constraints imposed by nature and apply their knowledge to achieve harmony between the human race and its environment.

Career Description:

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.

Geology Bachelor of Science

Geology	(60 Credits)
GE111 Physical Geology I	4
GE112 Physical Geology II	4
GE215 Historical Geology	4
GE216 Structural Geology & Geologic Graphics	4
GE221 Crystallography and Mineralogy	4
GE222 Mineralogy & Petrography	4
GE321 Optical Mineralogy	3
GE331 Introduction to Geophysics	4
GE351 Invertebrate Paleontology I	3
GE352 Invertebrate Paleontology II	3
GE436 Field Geology	6
GE422 Igneous and Metamorphic Petrography	3
GE423 Sedimentary Petrography	3
GE461 Stratigraphy & Sedimentation	4
GE471 Economic Geology I	4
GE472 Economic Geology II	3
Support Courses	(31-32 Credits)
CH115 General Chemistry I	5
CH116 General Chemistry II	4
CS101 Intro. to Microcomputer Applications	3
or	
CS121 Survey of Computer Science	
MA207 Principles of Statistical Methods	3
MA111 College Algebra	
and	
MA112 Calculus for Business and Life Sciences	
or	7-8
MA151 Calculus I	
and	
MA152 Calculus II	
Calculus I & Calculus II	
PH221 Elements of Physics I	
and	
PH222 Elements of Physics II	
or	8
PH231 Applied Physics for Engineers and Scientists I	
and	
PH232 Applied Physics for Engineers and Scientists II	

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

FALL		SPRING	
First Year			
EN110 Freshman Composition	3	MA112 Calculus for Business & Life Sciences	4
MA111 College Algebra*		or	
or	3-4	MA152 Calculus II	4
MA151 Calculus I		GE112 Physical Geology II	4
GE111 Physical Geology I	4	Soc. Sci. Elective	4
Soc Sci Elective	4	CS101 Intro. to Microcomputer Applications	3
	<u>14-15</u>	or	
		CS121 Survey of Computer Science	15
Second Year			
EN210 Research Paper Process	3	Electives	7
GE215 Historical Geology	4	GE222 Mineralogy & Petrography	4
GE221 Crystallography & Mineralogy	4	CH116 General Chemistry II	4
CH115 General Chemistry I	5		15
	<u>16</u>		
Third Year			
GE351 Invertebrate Paleontology I**	3	Cultural Diversity	3
GE471 Economic Geology I**	4	GE472 Economic Geology II**	3
HU251 Humanities I	4	GE352 Invertebrate Paleontology II**	3
SD101 Fund. of Speech Communication	3	Elective	3
MA207 Principles of Statistical Methods	3	Aesthetics	3
	<u>17</u>		15
Summer			
GE436 Field Geology**	6		
Fourth Year			
GE321 Optical Mineralogy**	3	GE422 Igneous & Metamorphic Petrography**	3
GE423 Sedimentary Petrography**	3	GE461 Stratigraphy & Sedimentation**	4
PH221 Elements of Physics I		PH222 Elements of Physics II	
or	4	or	4
PH231 Applied Physics for Engineers and Scientists I		PH232 Applied Physics for Engineers and Scientists II	
Electives	6	GE216 Structural Geology and Geologic Graphics**	4
	<u>16</u>		15

*MA109 Trigonometry and Vectors is required for students without high school trigonometry credit.
**Alternate year courses.

Geology

Geology: Environmental Geology Option Bachelor of Science

Bachelor's Degrees

Geology	(48 credits)
GE111 Physical Geology I	4
GE112 Physical Geology II	4
GE215 Historical Geology	4
GE216 Structural Geology and Geologic Graphics	4
GE221 Crystallography and Mineralogy	4
GE222 Mineralogy & Petrography	4
GE311 Principles Hydrology	3
GE312 Groundwater Hydrology	3
GE331 Introduction to Geophysics	4
GE436 Field Geology	6
GE461 Stratigraphy & Sedimentation	4
GE471 Economic Geology I	4
Support Courses	(45-47 credits)
CH115 General Chemistry I	5
CH116 General Chemistry II	4
CH225 Organic Chemistry I	4
CH226 Organic Chemistry II	4
EV341 Environmental Chemistry	4
CH220 Survey of Organic Chemistry	4
CH231 Quantitative Analysis	4
CH232 Instrumental Analysis	4
CS101 Intro. to Microcomputer Applications	3
CS121 Survey of Computer Science	4
MA111 College Algebra	3-4
MA112 Calculus for Business and Life Sciences	4
MA151 Calculus I	3-4
MA152 Calculus II	4
MA207 Principles of Statistical Methods	3-4
MA308 Probability and Mathematical Statistics	3
NS103 Environmental Science	3
PH221 Elements of Physics I	4
PH222 Elements of Physics II	4
PH231 Applied Physics for Engineers and Scientists I	4
PH232 Applied Physics for Engineers and Scientists II	4

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

FALL		SPRING	
First Year			
MA111 College Algebra	3-4	MA112 Calculus for Business & Life Science	4
MA151 Calculus I*	3-4	MA151 Calculus II	4
EN110 Freshman Composition	3	GE112 Physical Geology II	4
GE111 Physical Geology I	4	NS103 Environmental Science	3
Soc. Sci. Elective	4	SD101 Fund. of Speech Communication	3
	14-15	Elective	3
			17
Second Year			
EN205 Technical Report Writing	3	CS101 Intro. to Microcomputer Applications	3
CH115 General Chemistry I	5	CS121 Survey of Computer Science	4
GE215 Historical Geology	4	CH116 General Chemistry II	4
GE221 Crystallography and Mineralogy	4	GE222 Mineralogy and Petrography	4
	16	Elective	4
			15
Third Year			
CH225 Organic Chemistry I	4	CH226 Organic Chemistry II	4
CH220 Survey of Organic Chemistry	4	EV341 Environmental Chemistry	4
HU251 Humanities I	4	GE216 Structural Geology and Geologic Graphics**	4
PH221 Elements of Physics I	4	PH222 Elements of Physics II	4
PH231 Applied Physics for Engineers and Scientists I	4	PH232 Applied Physics for Engineers and Scientists II	4
Soc. Sci. Elective	4	GE461 Stratigraphy & Sedimentation**	4
	16		16
Summer			
GE436 Field Geology**	6		
Fourth Year			
GE311 Principles of Hydrology**	3	Cultural Diversity	3
CH231 Quantitative Analysis	4	CH232 Instrumental Analysis	4
MA207 Prin. of Statistical Methods	3-4	GE312 Groundwater Hydrology**	3
MA308 Probability and Mathematics	3-4	GE331 Introduction to Geophysics**	4
GE471 Economic Geology I**	4	Aesthetics Elective	3
	14-15		17

*MA109 Trigonometry and Vectors is required for students without high school trigonometry credit.
**Alternate year courses.

Geology Geology/Elementary Teaching Option Bachelor of Science

Planned Program Courses (61-64 credits)

EN110	Freshman Composition	3
EN215	Intro. to Literature and Research	3
EN231	American Literature I or	3
EN232	American Literature II	
EN320	Responding to Writing or	3
ED420	Emergent Literacy	
EN335	Children's Literature	3
GG201	World Regional Geography	4
HS101	History of World Civilization I or	4
HS131	United States History I	
HS102	History of World Civilization II or	4
HS132	United States History II	
HU251	Humanities I	4
MA103	Number Systems and Problem Solving	4
MA104	Geometry and Measurement	4
MA109*	Trigonometry and Vectors	2

*Required for students who have not had high school trigonometry.

MA111	College Algebra	3
MA207	Principles of Statistical Methods	3
PY265	Child and Adolescent Development	3
PS110	Intro. to American Government and Politics or	3-4
PS160	Intro. to Canadian Government and Politics	
SD101	Fund. of Speech Communication Aesthetics Elective	3

Courses Required for Major (50-53 credits)

CH108	Applied Chemistry or	4-7
CH104	Life Chemistry I and	
CH105	Life Chemistry II	
CS105	Intro. to Computer Programming or	
CS101	Intro. to Microcomputer Applications or	3
CS121	Survey of Computer Science	
GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	4
GE216	Structural Geology and Geologic Graphics	4
GE221	Crystallography and Mineralogy	4
GE222	Mineralogy and Petrography	4
GE351	Invertebrate Paleontology I	3
GE352	Invertebrate Paleontology II	3
GE436	Field Geology	6
GG108	Physical Geography: Meteorology and Climatology	4
NS101	Conceptual Physics	3

FALL

First Year

MA109	Trigonometry and Vectors*	2
EN110	Freshman Composition	3
GE111	Physical Geology I	4
TE150	Reflections on Learning and Teaching	3
CS121	Survey of Computer Science or	3
CS101	Intro. to Microcomputer Applications	3
		15

*MA109 is not required for students with high school trigonometry.

Second Year

EN215	Intro. to Literature and Research	3
GE215	Historical Geology	4
HS101	History of World Civilization	4
MA103	Number Systems and Problem Solving	4
		15

Third Year

PS110	Intro. to American Government and Politics	4
GE221	Crystallography & Mineralogy	4
GG201	World Regional Geography	4
TE301	Learner, Learning and Teaching in Context	4
		16

Summer

GE436	Field Geology**	6
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Fourth Year

EN320	Responding to Writing or	3
ED420	Emergent Literacy	
GE351	Invertebrate Paleontology I	3
HU251	Humanities I	4
TE401	Teaching, Learning and Assessment in the Classroom I	5
		15

Fifth Year (internship year)

TE491	Internship: Teaching Diverse Learners I	6
TE601	Professional Roles & Teaching Practice I	3
TE802	Reflection and Inquiry in Teaching Practice I	3
		12

**Alternate year courses.

SPRING

EN232	American Literature II	3
GE112	Physical Geology II	4
GG108	Physical Geography: Meteorology and Climatology**	4
SD101	Fund. of Speech Communication	3
PY265	Child & Adolescent Development	3
		17

CH108	Applied Chemistry	4
MA111	College Algebra	3
HS102	History of World Civilization II	4
MA104	Geometry and Measurement	4
TE250	Student Diversity and Schools	3
		19

EN335	Children's Literature	3
GE216	Structural Geology and Geologic Graphics**	4
GE222	Mineralogy and Petrography	4
MA207	Principles of Statistical Methods	3
NS101	Conceptual Physics	3
		17

GE352	Invertebrate Paleontology II**	3
	Elective	3
	Aesthetics Elective	3-4
TE402	Teaching, Learning and Assessment in the Classroom II	6
		15-16

TE492	Internship: Teaching Diverse Learners II	6
TE603	Professional Roles & Teaching Practice II	3
TE604	Reflection and Inquiry in Teaching Practice II	3
		12

Professional Education Minor (21 credits)

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Students and the Contexts of Learning	4
TE401	Learner Diversity and Teaching: Practicum I	5
TE402	Crafting Teaching Practice	6

Geology

Geology Geology/Secondary Teaching Option Bachelor of Science

Planned Program Courses (36-39 credits)

CS101	Intro. to Microcomputer Applications or	3
CS121	Survey of Computer Science	3
EN110	Freshman Composition	3
EN210	Research Paper Process	3
HU251	Humanities I	4
MA109*	Trigonometry and Vectors	2
<i>*Required for students who have not had high school trigonometry.</i>		
MA111	College Algebra or	3-4
MA151	Calculus I	
MA112	Calculus for Business and Life Sciences or	4
MA152	Calculus II	
MA207	Prin. of Statistical Methods	3
PY101	Introduction to Psychology	3
SD101	Fund. of Speech Communication Aesthetics Elective Social Science Elective	3 3 4

Group Science Minor (25 credits)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
CH115	General Chemistry I	5
CH116	General Chemistry II	4
PH221	Elements of Physics I or	4
PH231	Applied Physics for Engineers and Scientists I	
PH222	Elements of Physics II or	4
PH232	Applied Physics for Engineers and Scientists II	

Courses Required for Major (40 credits)

GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	4
GE216	Structural Geology and Geologic Graphics	4
GE221	Crystallography and Mineralogy	4
GE222	Mineralogy and Petrography	4
GE351	Invertebrate Paleontology I	3
GE352	Invertebrate Paleontology II	3
GE436	Field Geology	6
GG108	Physical Geography: Meteorology and Climatology	4

Professional Education Minor (21 credits)

TE150	Reflections on Learning and Teaching	3
TE250	Student Diversity and Schools	3
TE301	Students and the Contexts of Learning	4
TE401	Learner Diversity and Teaching: Practicum I	5
TE402	Crafting Teaching Practice	6

FALL		SPRING			
First Year					
MA109	Trigonometry and Vectors*	2	CS101	Intro. to Microcomputer Applications or	3
EN110	Freshman Composition	3	CS121	Survey of Computer Science	4
MA111	College Algebra or	3-4	GE112	Physical Geology II	4
MA151	Calculus I		MA112	Calculus for Natural Sciences or	4
GE111	Physical Geology I	4	MA152	Calculus II	4
TE150	Reflections on Learning and Teaching	3	PY101	Introduction to Psychology	4
		13-16			15
<i>*MA109 is not required for students with high school trigonometry.</i>					
Second Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
GE215	Historical Geology	4	GG108	Physical Geography: Meteorology & Climatology	4
EN210	Research Paper Process	3		Aesthetics Elective	3
HU251	Humanities II	4	SD101	Fund. of Speech Communication	3
		16	TE250	Student Diversity & Schools	3
					17
Third Year					
BL109	General Biology	4	BL110	General Zoology	2
GE221	Crystallography & Mineralogy	4	BL111	General Botany	2
PH221	Elements of Physics I or	4	GE216	Structural Geology and Geologic Graphics**	4
PH231	Applied Physics for Engineers and Scientists I		GE222	Mineralogy & Petrography	4
TE301	Students and the Contexts of Learning	4	PH222	Elements of Physics II or	4
		16	PH232	Applied Physics for Engineers and Scientists II	16
Summer					
GE436	Field Geology**	6			
Fourth Year					
GE351	Invertebrate Paleontology I	3	GE352	Invertebrate Paleontology II	3
NS119	Descriptive Astronomy	3	TE402	Teaching, Learning and Assessment in the Classroom II	6
Soc. Sci. Elective		4		Electives	4
TE401	Teaching, Learning and Assessment in the Classroom I	5	MA207	Principles of Statistical Methods	3
		15			16
Fifth Year (internship year; MSU graduate courses)					
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 Practicum II	3
TE602	Reflection and Inquiry in Teaching Practice I	3	TE604	Reflection and Inquiry in Teaching Practice II	3
		12			12
<i>*MA109 Trigonometry and Vectors is required for students without high school trigonometry credit.</i>					
<i>**Alternate year courses.</i>					

Bachelor's Degrees

Geology Environmental Science and Geology with Environmental Geology Option Bachelor of Science, Dual Major

Departmental Requirements (119-122)

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
BL204	General Microbiology	4
BL230	Introduction to Soils	3
BL337	General Ecology	3
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
CS101	Intro. to Microcomputer Applications	3
EV311	Environmental Law	3
EV313	Solid & Hazardous Waste	3
EV341	Environmental Chemistry I: Water & Water Pollution Control	4
EV395	Junior Seminar	1
EV499	Senior Thesis	2
GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	4
GE216	Structural Geology and Geological Graphics	4
GE221	Crystallography & Mineralogy	4
GE222	Mineralogy & Petrography	4
GE311	Principles of Hydrology	3
GE312	Groundwater Hydrology	3
GE436	Field Geology	6
GE461	Stratigraphy & Sedimentation	4
ID300	Human Environment	3
MA109	Trigonometry and Vectors*	2

*Required for students who have not had high school trigonometry.

MA111	College Algebra and	
MA112	Calculus for Business and Life Sciences	
	or	7-8
MA151	Calculus I and	
MA152	Calculus II	
MA207	Principles of Statistical Methods	3
NS103	Environmental Science	3
PH221	Elements of Physics I and	
PH222	Elements of Physics II	
	or	8
PH231	Applied Physics for Engineers and Scientists I	
	and	
PH232	Applied Physics for Engineers and Scientists II	

Nine credits of free electives and three credits of designated electives are required. GE112 serves as a designated elective for the environmental science major. A minimum of 153 semester credits is required for the dual major.

FALL		SPRING			
First Year					
CH115	General Chemistry I	5	CH116	General Chemistry II	4
GE111	Physical Geology I	4	GE112	Physical Geology II	4
MA109	Trigonometry & Vectors*	2	EN110	Freshman Composition	3
MA111	College Algebra		MA112	Calculus for Business and Life Science	
	or	3-4		or	4
MA151	Calculus I		MA152	Calculus II	
NS103	Environmental Science	3			15
		15-18			
Second Year					
CH225	Organic Chemistry I	4	CH226	Organic Chemistry II	4
GE221	Crystallography & Mineralogy	4	MA207	Principles of Statistical Methods	3
EN205	Technical Report Writing	3	GE222	Mineralogy & Petrography	4
BL109	General Biology	4	BS110	General Zoology	2
		15	BL111	General Botany	2
					15
Third Year					
BL337	General Ecology	3	CH232	Instrumental Analysis	4
CH231	Quantitative Analysis	4		Elective	4
GE215	Historical Geology	4	EV341	Environmental Chemistry I: Water & Water Pollution	4
CS101	Intro. to Microcomputer Applications	3	BL230	Introduction to Soils	3
EV311	Environmental Law**	3			15
		17			
Fourth Year					
EV313	Solid and Hazardous Waste**	3	EV395	Junior Seminar	1
PH221	Elements of Physics I		PH222	Elements of Physics II	
	or	4		or	4
PH231	Applied Physics for Engineers and Scientists I		PH232	Applied Physics for Engineers and Scientists II	
SD101	Fund. of Speech Communication	3	GE216	Structural Geology and Geologic Graphics**	4
Soc. Sci.	Elective	4		Soc. Sci. Elective	4
	Cultural Diversity	3	GE461	Stratigraphy & Sedimentation**	4
		17			17
Summer					
GE436	Field Geology**	6			
Fifth Year					
BL204	General Microbiology	4	GE312	Groundwater Hydrology**	3
GE311	Principles of Hydrology**	3	ID300	Human Environment	3
	Elective	3	EV499	Senior Thesis	2
HU251	Humanities I	4	GE331	Introduction to Geophysics**	4
		14		Aesthetics Elective	3
					15

*MA109 is not required for students with high school trigonometry.

**Alternate year courses.

History

See College of Arts, Letters and Social Sciences, page 211.

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?

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 Description:

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.

History Bachelor of Arts Bachelor of Science

Requirements for the bachelor of arts: 1) the general education requirements of the University; 2) one year of foreign language or its equivalent; 3) HS101, 102 History of World Civilization sequence; or HS131, 132 United States History sequence; 4) 16 semester hours of 300- and/or 400-level history courses; 5) HS496 Historical Methods and HS497 Senior Seminar in History; 6) additional history electives to total 30 semester hours; 7) GG106 Physical Geography: Landforms or GE111 Physical Geology I and GG201 World Regional Geography; 8) one course from: GG306, 321, 322, 323, 325, 360, or EC201; and 9) one minor. Total department credits required: 70 semester hours.

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

Bachelor of Arts or Bachelor of Science

FALL		SPRING		
First Year				
EN110	Freshman Composition*	3	HU251 Humanities I	4
SD101	Fund. of Speech Communication	3	Minor	4
NS	Elective	4	NS Elective	4
HS101	History of World Civilization I		HS102 History of World Civilization II	4
	or	4	or	
HS131	United States History I		HS132 United States History II	4
		<u>14</u>		<u>16</u>
Second Year				
GG106	Physical Geography: Landforms		GG201 World Regional Geography	4
	or		History Elective	4
GE111	Physical Geology I	4	HU Elective	4
	History Elective	4	Cognate** or Language	4
EN210	Research Paper Process*			<u>16</u>
	or	3		
EN215	Intro. to Literature & Research*			
	Cognate** or Language	<u>4</u>		
		<u>15</u>		
Third Year				
HS	300- or 400-Level History Elective	4	HS 300- or 400-Level History Elective	4
	Minor	4	Minor	4
	Geography Requirement 300-Level	4	HS440 The Declaration of Independence and the Constitution	4
	or		Minor	4
EC201	Princ. of Macroeconomics	3		<u>4</u>
	Free Elective	<u>4</u>		<u>16</u>
		<u>15-16</u>		
Fourth Year				
HS496	Historical Methods	2	HS497 Senior Seminar in History	2
HS	300- or 400-Level History Elective	4	HS 300- or 400-Level History Elective	4
	Minor	4	Minor	4
	Free Electives	<u>5</u>	Free Elective	4
		<u>15</u>		<u>14</u>

*May be taken fall or spring semester.

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

History

History Elementary Teacher Certification Bachelor of Arts Bachelor of Science

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

- 53 semester credit hours in the courses specified below, or their equivalents;
- The planned program for elementary teachers, excluding the social sciences and history section; and
- 21 credits in teacher education courses TE150, 250, 301, 401, and 402.

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
HS440	United States History II 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	14
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.	Science Cognate from Planned Program		

FALL		SPRING		
First Year				
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication	3
NS110	Chemistry in Society	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		HS132 United States History II	
CS101	Intro. to Microcomputer Applications	3	MA110 Explorations in Mathematics	3
		<u>14</u>	TE150 Reflections on Learning	<u>3</u>
				17

Second Year				
PS110	Intro. to American Government and Politics	4	PS130 Intro. to State and Local Government Planned Program - English	4
GE114	Field Excursions in Earth Science	3	GG201 World Regional Geography	3
TE250	Student Diversity and Schools	3	MA104 Geometry and Measurement	4
EN215	Intro. to Literature and Research	3		<u>4</u>
MA103	Number Systems and Problem Solving	4		15
		<u>18</u>		

Third Year				
HS	300/400-Level History Elective	4	HS440 The Declaration of Independence and the Constitution	4
GG306	Cultural Geography Elective	3	Planned Program - Science	3
	Planned Program - Science	3	TE301 Students and the Contexts of Learning	4
	Planned Program - English	3	PY265 Child & Adolescent Development	3
		<u>16</u>	Planned Program in English	<u>3</u>
				17

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
TE401	Teaching, Learning and Assessment in the Classroom	5	TE402 Teaching, Learning and Assessment in the Classroom II	6
HU	Elective	3	Elective	3
		<u>14</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	3	TE604 Reflection and Inquiry in Teaching Practice II	3
		<u>12</u>		<u>12</u>

*May be taken fall or spring semester.

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

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

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	8
HS102	History of World Civilization II or	
HS131	United States History I and	8
HS132	United States History II	
HS440	The Declaration of Independence and the Constitution	4
HS496	Historical Methods	2
HS497	Senior Seminar in History	2

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

PS110	Intro. to American Government and Politics	4
PS130	Intro. to State and Local Government	4
GG106	Physical Geography: Landforms or	4
GE111	Physical Geology I	4
GG201	World Regional Geography	4
B.A.	1st Year Foreign Language or	8
B.S.	Social Science Cognate	

FALL		SPRING		
First Year				
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication	3
NS	Elective	4	HU251 Humanities I	4
HS101	History of World Civilization I or	4	HS102 History of World Civilization II or	4
HS131	United States History I Minor	4	HS132 United States History II	
		4	TE150 Reflections on Learning and Teaching	3
		15		14
Second Year				
PS110	Intro. to American Government And Politics	4	EN210 Research Paper Process* Cognate**	3
TE250	Student Diversity and Schools	3	GG201 World Regional Geography	4
GG106	Physical Geography: Landforms or	4	PS130 Intro. to State and Local Government	4
GE111	Physical Geology I	4		15
		15		
Third Year				
HS	300/400-Level History Elective Minor	4	HS440 The Declaration of Independence and the Constitution	4
		4	HS	300/400-Level History Elective
		4	Minor	4
HU	Elective	4	TE301 Students and the Contexts of Learning	4
		16		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
TE401	Teaching, Learning and Assessment in the Classroom I Minor	5	TE402 Teaching, Learning and Assessment in the Classroom II	6
		4	Nat Sci Elective	4
		15		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

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

Bachelor's Degrees

Human Services

See College of Arts, Letters
and Social Sciences, page 211.

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.

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 selected from either psychology or sociology. All skill minors require a practicum or internship. A total of 9-16 credits of practicum must be completed between the two skill minors. No more than 16 credits of practicum may be counted for the degree. The general requirements must also be completed.

Career Description:

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.

Individualized Studies

See any college dean

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.

Bachelor of Arts
Bachelor of Science

Career Choices:

Your choice of career

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 of the final 64 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 211.

Bachelor of Science

Specialties in:

Legal Administration

Criminal Law

Personal Injury

Labor Law

Legislative/
Constitutional Law

Bachelor's Degrees

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?

Program Description:

The legal assistant profession is one of the occupations projected to grow the fastest through the year 2005 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 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 (45 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 and Investigative Techniques	3
LA150	The Legal Assistant Profession and Ethical Considerations	3
LA202	Legal Writing and Analysis	3
LA250	Law Office Management, Systems and Technology	3
LA320	Real Estate Law	3
LA321	Family Law	2
LA322	Probate Law & Procedure	3
LA401	Evidence & Trial Practice	3
LA450	Advanced Legal Writing & Interviewing Seminar	3
LA	Elective**	3

General Education (33 credits)*

EN110	Freshman Composition	3
EN210	Research Paper Process	3
PS110	Intro. to American Government and Politics	4
	and	
PS467	Constitutional Law and Civil Liberties	4
SD101	Fund. of Speech Communication	3
	Natural Science	8
	Humanities	8

Cognates - Required (13-15 credits)

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

Word Processing/Computer Science (2-3 credits)

Choose one of the following:

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

Legal Specialty or Minor (20+ credits)

See next page.

Electives (11-12 credits)

Electives are to be chosen in consultation with

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

*May be taken fall or spring semester.

advisor.

*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 for students specializing in legal administration.

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

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	
EC403	Private Enterprise and Public Policy	3
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 or CH105

Manufacturing Engineering Technology

See College of Engineering, Mathematics and Business, page 231.

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.

The B.S. degree program in MfgET at LSSU is accredited nationally by Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202 — Telephone: (410) 347-7700.

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.

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.

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

Bachelor's Degrees

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?

Manufacturing Engineering Technology

Manufacturing Engineering Technology Bachelor of Science

Departmental Requirements:

MfgET B.S. degree - general option departmental requirements (102 Credits)

Mathematics (14 credits)

MA109	Trigonometry and Vectors	2
MA140	Algebra for Technology	4
MA143	Calculus for Engineering I	4
MA207	Principles of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1

Sciences (8 credits)

CH108	Applied Chemistry	4
PH221	Elements of Physics I	4

Engineering Technology (53 credits)

EG491	Engineering Design Project I	3
EG495	Engineering Design Project II	3
ET110	Applied Electricity & PLCs	4
EE125	Digital Fundamentals	4
ET175	Applied Electronics	4
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD & GD&T)	4
ME275	Engineering Materials	3
MT215	Design for Manufacturing	4
MT225	Statics and Strength of Materials	3
MT315	CNC Manufacturing Processes	3
RS280	Robotics Technology	3
RS365	Programmable Logic Controllers	3
RS480	Control Systems & Automation	4
TC110	Industrial Safety	2

Support Courses (27 credits)

CS101	Intro. Microcomputer Applications	3
CS105	Intro. Computer Programming	3
MN360	Principles of Management	3
	Cooperative Education	2
	Math/Science Elective	3
	Technical Elective	7
	Free Electives	6

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 in place of those courses noted as either free electives or technical electives in the curriculum. You can choose courses from several fields including computer science, management, engineering, and technology. 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

FALL		SPRING	
First Year			
MA092	Intermediate Algebra (4)*	ME115	Manufacturing Processes II 3
	or	EN205	Technical Report Writing 3
	Social Science Elective 3	MA140	Algebra for Technologists 4
ME110	Manufacturing Processes I 3	MA109	Trigonometry/Vectors 2
ME140	Computer-Aided Drafting and Geometric Dimension Tolerancing CAD and GD&T) 4	CH108	Applied Chemistry 4
EN110	Freshman Composition 3		16
CS101	Intro. to Microcomputer Applications 3		
	16		
Second Year			
PH221	Elements of Physics I 4	MT225	Statics & Strength 3
ET110	Applied Electricity & PLCs 4	ME275	Engineering Materials 3
MA207	Principles of Statistical Methods 3	SD101	Fund. of Speech Communication 3
MA208	Statistical Applications for Quality Control 1	ET175	Applied Electronics 4
	1	EE125	Digital Fundamentals 4
RS280	Robotics Technology 3		17
	15		
Total credits required to complete associate's degree = 64			
Third Year			
MA143	Calculus for Engineering I 4	MT215	Design for Manufacturing 4
MT315	CNC Manufacturing Processes 3		Free Elective+ 3
CS105	Intro. Computer Programming 3	RS365	Programmable Logic Controllers 3
TC110	Industrial Safety 2		Technical Elective+ 4
MN360	Principles of Management 3		Math/Science Elective+ 3
	15		17
Summer			
	Cooperative Education ++ - 2 credits		
Fourth Year			
	Free Elective 3	EG495	Engineering Design Project II 3
EG491	Engineering Design Project I 3		Cultural Diversity Elective 3
RS480	Control Systems & Automation 4		Humanities/Aesthetics Elective 3
	Technical Elective** 3		Social Science Elective (Economics) 3
	Humanities/Aesthetics Elective 4		12
	17		
Total credits required to complete BS Degree = 127			
* Students placed in MA092 should take the social science elective in a summer or a later semester.			
** To be approved by department chair.			
+ For robotics and automation option: EG265 "C" Programming, MA144 Calculus for Engineering II, and RS430 Systems Integration and Machine Vision are required instead of the electives noted.			
++ If co-op education opportunity is unavailable, a technical elective approved by department chair may be substituted.			

with a strong background in robotics, machine vision, sensors, communications and automation. Only LSSU and one other major university in the USA offer you the 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 100 percent job placement with high and competitive starting salaries. Your emphasis of study in this option will be identified in your transcripts.

Mathematics

See College of Engineering, Mathematics and Business, page 231.

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 Description:

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 Scientist — 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?

Bachelor's Degrees

Mathematics

Mathematics Bachelor of Science

Departmental Requirements (56 credits)

MA151	Calculus I	4
MA152	Calculus II	4
MA251	Calculus III	4
MA215	Fundamental Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA261	Intro. to Numerical Methods	3
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	4
MA309	Applied Statistics	3
MA310	Differential Equations	4
MA341	Abstract Algebra I	3
MA351	Graph Theory	3
MA401	Mathematical Modeling	3
MA411	Advanced Calculus	3
MA490	Research Topics in Mathematics	3

Choose any two (2) of the following 6

CS101	Intro. to Microcomputer Applications	
CS105	Intro. to Computer Programming	
CS121	Survey of Computer Science	

Other Requirements (4 credits)

PH231	Applied Physics for Engineers and Scientists I	4
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Free electives and general education requirements must be completed so that at least 124 semester credits have been earned.

Bachelor's Degrees

FALL		SPRING			
First Year					
MA151	Calculus I	4	MA152	Calculus II	4
EN110	Freshman Composition	3	CS121	Survey of Computer Science	3
CS101	Intro. to Microcomputer Applications	3	or		
or			CS105	Intro. to Computer Programming	3
CS105	Intro. to Computer Programming	4	SD101	Fund. of Speech Communication	3
PY101	Introduction to Psychology	4	SO103	Cultural Diversity	3
Elective		<u>3</u>	Elective		<u>3</u>
		17			16
Second Year					
MA215	Fund. Concepts of Mathematics	3	MA251	Calculus III	4
MA261	Intro. to Numerical Methods	3	MA216	Discrete Mathematics and Problem Solving	3
PH231	Applied Physics for Engineers and Scientists I	4	Electives		<u>6-9</u>
EN210	Research Paper	<u>3</u>			13-16
		17			
Third Year					
MA308	Probability and Mathematical Statistics	4	MA309	Applied Statistics	3
MA310	Differential Equations	4	MA351	Graph Theory	3
or			or		
MA305	Computational Linear Algebra	3-4	MA411	Advanced Calculus	4
HU251	Humanities I	4	HU252	Humanities II	4
MA341	Abstract Algebra I	3	Electives		<u>4-6</u>
or					13-16
MA401	Mathematical Modeling	<u>3</u>			
		14-15			
Fourth Year					
MA305	Computational Linear Algebra	3-4	MA490	Research Topics in Mathematics	3
or			MA411	Advanced Calculus	3
MA310	Differential Equations	4	or		
MA410	Mathematical Modeling	3	MA351	Graph Theory	3
or			Electives		<u>8-10</u>
MA341	Abstract Algebra I	3			14-16
Electives		<u>6-8</u>			
		12-15			

Mathematics — Actuarial and Business Applications Bachelor of Science

Departmental Requirements (53 credits)

MA151	Calculus I	4
MA152	Calculus II	4
MA251	Calculus II	4
MA215	Fund. Concepts of Mathematics	3
MA216	Discrete Mathematics and Problem Solving	3
MA305	Computational Linear Algebra	3
MA308	Probability and Mathematical Statistics	4
MA309	Applied Statistics	3
MA310	Differential Equations	4
MA341	Abstract Algebra I	3
MA351	Graph Theory	3
MA401	Mathematical Modeling	3
MA411	Advanced Calculus	3
MA490	Research Topics in Mathematics	3

Choose any two of the following	6	
CS101	Intro. to Microcomputer Applications	
CS105	Intro. Computer Programming	
CS121	Survey of Computer Science	

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.

Total Credits 124

FALL

First Year

AC132	Principles of Accounting I	4
EN110	Freshman Composition	3
MA151	Calculus I	4
CS101	Intro. to Microcomputer Applications	3
or		
CS105	Intro. to Computer Programming	3
Electives		3
		<u>17</u>

Second Year

SD101	Fund. of Speech Communication	3
	Science Course	3
BA254	Business Law I	3
EN210	Research Paper Process	3
MA215	Fundamental Concepts of Mathematics	3
		<u>15</u>

Third Year

AC332	Cost Accounting I	4
MA308	Probability and Mathematical Statistics	4
MA310	Differential Equations	3-4
or		
MA305	Computational Linear Algebra	3
	Ethics	3
MA341	Abstract Algebra I	3
or		
MA401	Mathematical Modeling	3
		<u>17-18</u>

Fourth Year

FN448	Investment Strategy	4
	Electives	4
MA305	Computational Linear Algebra	3-4
or		
MA310	Differential Equations	3
MA401	Mathematical Modeling	3
or		
MA341	Abstract Algebra I	3
		<u>14-15</u>

SPRING

AC133	Principles of Accounting II	4
CS105	Intro. to Computer Programming	3
or		
CS121	Survey of Computer Science	3
EC201	Principles of Macroeconomics	3
or		
MA152	Calculus II	4
Electives		3
		<u>17</u>

EC201	Principles of Macroeconomics	3
or		
EC202	Principles of Microeconomics	3
Science Course		3
MA216	Discrete Mathematics and Problem Solving	3
MA251	Calculus III	4
Electives		3
		<u>16</u>

FN341	Managerial Finance	4
MA309	Applied Statistics	3
MA351	Graph Theory	3
or		
MA411	Advanced Calculus	4
HU	(Aesthetics)	4
		<u>14</u>

FN443	Insurance	3
MA490	Research Topics in Mathematics	3
MA411	Advanced Calculus	3
or		
MA351	Graph Theory	3
Electives		6-8
		<u>15-17</u>

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 Department of Education section of this catalog.

The program also includes general education requirements and a 21-credit professional education 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 (37-38 hours)

CS101	Intro. to Microcomputer Applications	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	4
<i>or</i>		
MA207	Principles of Statistical Methods	3
MA321	History of Mathematics	3
MA325	College Geometry	3

Professional Education Sequence (21 hours)

Elementary Education Planned Program Breadth Requirements (41-42 hours)

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
EN110	Freshman Composition	3	CS101	Intro. to Microcomputer Applications	3
HS101	History of World Civilization I*	4	SD101	Fund. of Speech Communication	3
TE150	Reflections on Learning and Teaching	<u>3</u>	HS102	History of World Civilization II*	<u>4</u>
		14			14
Second Year					
PS110	Intro. to American Government and Politics	4	MA104	Geometry and Measurement*	4
MA103	Number Systems & Problem Solving*	4	CS105	Intro. to Computer Programming	3
MA215	Fundamental Concepts of Math*	3	EN232	American Literature II	3
TE250	Student Diversity & Schools	3		Elective	3
EN215	Intro. to Literature and Research	<u>3</u>	PY265	Child and Adolescent Development	<u>3</u>
		17			16
Third Year					
MA321	History of Mathematics**	3	MA325	College Geometry**	3
NS110	Chemistry in Society	4	TE301	Students & Context of Learning*	4
HU251	Humanities I	4	NS101	Conceptual Physics	3
GE114	Field Exercise in Earth Science*	3	BL109	General Biology	<u>4</u>
	Elective	<u>2</u>			14
		16			
Fourth Year					
MA305	Computational Linear Algebra**	3	MA207	Principles of Statistical Methods**	3
TE401	Teaching, Learning and Assessment in the Classroom I*	5		<i>or</i>	
EN320	Responding to Writing		MA308	Probability and Mathematical Statistics	4
	<i>or</i>	3	TE402	Teaching, Learning and Assessment in the Classroom II*	6
ED420	Emergent Literacy		EN335	Children's Literature	3
	Aesthetics	3-4	GG201	World Regional Geography	<u>4</u>
	Elective	<u>3</u>			16-17
		17-18			
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

Recommendation for teacher certification after successful completion of the internship year.

Consult with your education advisor to keep current on certification requirements.

*Offered fall or spring only.

** Offered only every two years. Be sure to take these scheduling details into account in planning your program.

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.

The program also includes general education requirements and a 21-credit professional education 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 (45 credits)

CS105	Intro. to Computer Programming	3
	<i>or</i>	
CS121	Survey of Computer Science	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	4
MA310	Differential Equations	4
MA321	History of Mathematics	3
MA325	College Geometry	3
MA341	Abstract Algebra I	3
MA401	Mathematical Modeling	3

Professional Education Sequence 21 hours

The remainder of the 124 credits for graduation are gained through the general education requirements and electives.

A Post-Baccalaureate 5th year Internship and associated graduate level classes are required for LSSU recommendation for teacher certification.

FALL		SPRING			
First Year					
MA151	Calculus I	4	MA152	Calculus II	4
EN110	Freshman Composition	3	CS101	Intro. to Microcomputer Applications	
CH115	General Chemistry I		<i>or</i>		
		5	CS121	Survey of Computer Science	3
PH231	Applied Physics for Engineers and Scientists I		CH116	General Chemistry II	4
			<i>(or PH 232 if took PH231)</i>		
TE150	Reflecting on Learning and Teaching	3	SD101	Fund. of Speech Communication	3
		<u>15</u>			<u>14</u>
Second Year					
MA251	Calculus III*	4	MA216	Discrete Mathematics and Problem Solving*	3
MA215	Fund. Concepts of Mathematics*	3	HS102	History of World Civilization II	4
TE250	Student Diversity & Schools	3	EN232	American Literature II	3
EN210	Research Paper Process	3	HU251	Humanities I	3
HS101	History of World Civilization I	4		Elective (minor)	3
		<u>17</u>			<u>16</u>
Third Year					
MA321	History of Mathematics**	3	MA308	Probability & Mathematical Statistics**	4
MA305	Computational Linear Algebra**	3	MA310	Differential Equations**	4
HU252	Humanities II	4	EN215	Intro. to Literature and Research	3
	Elective (minor)	3	TE301	Students and the Contexts of Learning*	4
	Elective (minor)	3			<u>15</u>
		<u>16</u>			
Fourth Year					
MA325	College Geometry**	3	MA401	Mathematical Modeling**	3
MA341	Abstract Algebra I**	3	TE402	Teaching, Learning and Assessment in the Classroom II	6
TE401	Teaching, Learning and Assessment in the Classroom I	5		Elective (minor)	3
	Elective (Gen Ed or minor)	3		Elective (minor)	3
		<u>14</u>			<u>15</u>
Graduate with bachelor's degree					
Fifth Year					
TE491	Internship in Teaching Diverse Learners	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>

Recommendation for teacher certification after successful completion of the internship year.

Consult with your education advisor to keep current on certification requirements.

**Offered fall or spring only.*

***Offered only every two years. Be sure to take these scheduling details into account in planning your program.*

Mechanical Engineering

See College of Engineering, Mathematics and Business, page 231.

Bachelor of Science

128-Hour Program

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 will prepare you for a rewarding career in mechanical and other related engineering fields. Course work includes 70 hours in technical specialties, 32 hours in math and sciences and 26 hours in general education for a total of 128 hours in the bachelor of science degree. You will have the opportunity to 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* or a *robotics and automation 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.

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.

Mechanical Engineering Bachelor of Science

Departmental Requirements (102 Credits)

Mathematics

MA143	Calculus for Engineering I	4
MA144	Calculus for Engineering II	4
MA207	Prin. of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1
MA243	Calculus & Linear Algebra for Engineers	4
MA343	Differential Equations for Engineers	4

Computer Science

EG265	"C" Programming	3
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Sciences

CH108	Applied Chemistry	4
PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Engineering

EE210	Circuits and Machines	4
EE305	Analog and Digital Electronics	3
EG101	Introduction to Engineering	2
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
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD & GD&T)	4
ME225	Strength of Materials	3
ME275	Engineering Materials	3
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3
ME350	Machine Design I	4
ME430	Thermo II and Heat Transfer	4
RS460	Control Systems	4

FALL

First Year

MA150	Pre-Calculus (if needed)	(4)
ME140	CAD and GD & T	4
ME110	Manufacturing Processes I	3
EG101	Intro. to Engineering	2
EN110	Freshman Composition	3
		<u>12-16</u>

Second Year

MA144	Calculus for Engineering II	4
PH231	Applied Physics for Engineers and Scientists I	4
EG265	"C" Programming	3
EM220	Statics	3
EN205	Technical Report Writing	3
		<u>17</u>

Third Year

MA343	Differential Equations for Engineers	4
EM320	Dynamics	4
ME350	Machine Design I	4
EE210	Circuits and Machines	4
		<u>16</u>

Fourth Year

EG491	Engineering Design Project I	3
	Engineering Electives	4
RS460	Control Systems	4
ME430	Thermodynamics II and Heat Transfer	4
		<u>15</u>

SPRING

MA143	Calculus for Engineering I	4
CH108	Applied Chemistry	4
ME115	Manufacturing Processes II	3
	Cultural Diversity	3
	Humanities/Aesthetics	4
		<u>18</u>

MA243	Calculus & Linear Algebra for Engineers	4
PH232	Applied Physics for Engineers and Scientists II	4
ME225	Strength of Materials	3
ME275	Engineering Materials	3
SD101	Fund. of Speech Communication	3
		<u>17</u>

MA207	Principles of Statistical Methods	3
MA208	Statistical Appl. for Quality Control	1
ME335	Fluid Mechanics	3
ME336	Thermodynamics I	3
EE305	Analog and Digital Electronics	3
	Engineering Electives	3
		<u>17</u>

EG495	Engineering Design Project II	3
	Engineering Electives	4
	Humanities/Aesthetics	4
	Economics	3
	Social Science	3
		<u>17</u>

Mechanical Design Required Tech Electives

ME442	Finite Element Analysis	4
	and	
ME425	Vibration	4
	or	
RS365	Programmable Logic Controllers	3
	and	
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 Additional Optional Courses

RS480	Control Systems and Automation	4
ME440	Solid Modeling and Animation	3

Nursing

See College of Natural and Health Sciences, page 245.

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:

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 distribution requirements facilitate development of liberal backgrounds in physical science, social science and humanities. The generalist curriculum provides a base for expanding roles in nursing practice. The nursing curriculum provides an interdisciplinary major and does not require a minor to meet graduation requirements. Students interested in a minor should refer to the appropriate Catalog section. A total of 127 credits is required to complete a bachelor of science degree in nursing.

Career Description:

Hospital Nursing — works in interdisciplinary teams to restore the health of clients of all ages in acute care settings.

Home Care Nursing — works in interdisciplinary teams to promote, maintain and restore health in client's homes.

School Nursing — promotes health of the school age population.

Public Health Nursing — promotes and maintains health of populations.

Nursing Pre-Licensure Program

Curriculum: Health care is moving to a more community-based system. To prepare nurses for this change, the nursing curriculum is under revision at the present time. Total credits in the program will not change, but credits may be reallocated among courses. Students admitted to the University fall 1998 or later should contact the Nursing Department for a copy of the revised curriculum. Requirements for the bachelor of science degree in nursing four-year program are as follows for currently enrolled students:

Nursing	(56 Credits)
NU211 Intro. to Professional Nursing II	3
NU212 Health Appraisal	3
NU213 Fundamentals of Nursing	5
NU325 Parent/Newborn Nursing	5
NU326 Parent/Child Nursing	6
NU327 Adult Nursing I	8
NU431 Adult Nursing II	8
NU432 Community Health Nursing	5
NU433 Mental Health Nursing	5
NU434 Nursing Research	3
NU435 Management in Nursing	3
NU436 Nursing Issues	2
Health Sciences	(14 credits)
HE208 Nutrition	2
HE209 Pharmacology	3
HE232 Pathophysiology	3
HE235 Computer Applications in Health Sciences	2
HE352 Health Issues of Aging Populations	3
HE207 Applied Nutrition Lab	1
Other Disciplines	(13 credits)
BL121 Human Anatomy & Physiology I	4
BL223 Clinical Microbiology	3
CH104 Life Chemistry I	3
PY210 Statistics (<i>preferred</i>)	3
or	
MA207 Principles of Statistical Methods	3
General Education	(37 credits)
BL122 Human Anatomy & Physiology II	4
CH105 Life Chemistry II	4
EN110 Freshman Composition	3
EN210 Research Paper Process	3
HE228 Multicultural Approaches to Health Care	3
HU251 Humanities I	4
Humanities Elective	4
PY101 Introduction to Psychology	4
PY155 Lifespan Development	3
SO101 Introduction to Sociology	3
SD101 Fund. of Speech Communication	3
General Electives	(6 credits)

FALL		SPRING	
First Year			
EN110 Freshman Composition	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	HE208 Nutrition	2
BL121 Human Anatomy & Physiology I	4	HE207 Applied Nutrition Lab	1
	<u>17</u>	Elective	3
			<u>16</u>
Second Year			
EN210 Research Paper Process	3	BL223 Clinical Microbiology	3
NU211 Intro. to Professional Nursing II	3	NU213 Fundamentals of Nursing Practice	5
CH105 Life Chemistry II	4	HE209 Pharmacology	3
NU212 Health Appraisal	3	HE228 Multicultural Approach to Health Care	3
HE232 Pathophysiology	3	HE235 Computer Applications in Health Science	2
	<u>16</u>		<u>16</u>
Third Year			
NU325 Parent/Newborn Nursing	5	HE352 Health Issues of Aging Populations	3
NU326 Parent/Child Nursing	6	PY210 Statistics	3
HU251 Humanities I	4	or	3
	<u>15</u>	MA207 Princ. of Statistical Methods	8
		NU327 Adult Nursing I	3
		Elective	3
			<u>17</u>
Fourth Year			
NU431 Adult Nursing II	8	NU432 Community Health Nursing	5
NU434 Nursing Research	3	NU433 Mental Health Nursing	5
NU435 Nursing Management	3	NU436 Contemporary Issues in Nursing	2
	<u>14</u>	Humanities Elective	4
			<u>16</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	Freshman Composition	3
EN210	Research Paper Process	3
HE208	Nutrition	2
HE209	Pharmacology	4
NU207	Applied Nutrition Lab	1
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	8
NU431	Adult Nursing II	8
NU433	Mental Health Nursing	5
		32

Requirements for the bachelor of science degree in nursing (RN completion program) are as follows:

Nursing		(57 credits)
NU325	Parent/Newborn Nursing**	5
NU326	Parent/Child Nursing**	6
NU327	Adult Nursing I**	8
NU431	Adult Nursing II**	8
NU433	Mental Health Nursing**	5
NU360	Professional Nursing Concepts	4
NU363	Comprehensive Health Appraisal	3
NU365	Family Nursing Theory	3
NU432	Community Health Nursing	5
NU434	Nursing Research	3
NU435	Management in Nursing	3
NU436	Contemporary Issues in Nursing	2
NU437	Professional Nursing Leadership	2

Health Sciences		(14 credits)
HE207	Applied Nutrition Lab*	1
HE208	Nutrition*	2
HE209	Pharmacology*	3
HE232	Pathophysiology***	3
HE235	Computer Applications in Health Sciences	2
HE352	Health Issues of Aging Populations	3

Other Disciplines		(13 credits)
BL121	Human Anatomy & Physiology I	4
BL223	Clinical Microbiology	3
CH104	Life Chemistry I	3
PY210	Statistics (preferred)	3
	or	
MA207	Principles of Statistical Methods	3

FALL		SPRING			
First Year					
NU360	Professional Nursing Concepts	4	CH104	Life Chemistry I	3
NU363	Comp. Health Appraisal	3	HE235	Computer Applications in Health Science	2
HE232	Pathophysiology	3	HU251	Humanities I	4
SD101	Fund. of Speech Communication	3		Social Science Elective	3
HE352	Health Issues of Aging Populations	3	HE228	Multicultural Approach to Health Care	3
		16			3
					15
Second Year					
CH105	Life Chemistry II	4	NU434	Nursing Research	3
NU365	Family Nursing Theory	3	NU435	Nursing Management	3
NU432	Community Health Nursing	5	NU437	Professional Nursing Leadership	2
PY210	Statistics (preferred)	3		Humanities Elective	4
	or	3		Electives	5
MA207	Principles of Statistical Methods	2			17
NU436	Contemporary Nursing Issues	2			
		17			

General Education (38 credits)

PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	4
BL122	Human Anatomy & Physiology	4
CH105	Life Chemistry II	4
EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fund. of Speech Communication	3
HU251	Humanities I	4
	Humanities Electives	4
	Social Science Elective	3
HE228	Multicultural Approach to Health Care	3

General Electives	5
Total Credits	127

* 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.

** Credit granted upon successful completion of NU360 and NU363.

*** Departmental examination available.

Political Science

See College of Arts, Letters
and Social Sciences, page 211.

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 three tracks or concentrations: general political science, pre-law, or public administration. 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 Description:

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

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, 334, 340)	3-4
International Relations (PS241, 411, 420)	3-4
Political Philosophy (PS351, 352)	4
PS491 Senior Seminar I	3
PS492 Senior Seminar II	3

Additional political science electives to reach 40 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 Macroeconomics	3
PY101	Introduction to Psychology	4
SO101	Introduction to Sociology	3
SO213	Introduction to Anthropology	3

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fund. of Speech Communication	3
PS110	Intro. to American Government and Politics	4	Pol Sci	Elective	4
HS	History Sequence Elective	4	HS	History Sequence Elective	4
Nat Sci	Elective	3	Nat Sci	Elective	3
SA100	How to Succeed in College	1			14
		<u>15</u>			
Second Year					
EN210	Research Paper Process*	3	Nat Sci	Elective	3
HU251	Humanities I	4	HU252	Humanities II	4
Pol Sci	Elective	3	Pol Sci	Elective	3
CS101	Intro. to Microcomputer Appl. Elective	3	PS211	Political Science Research and Statistics	4
		<u>16</u>			14
Third Year					
Pol Sci	Field Elective	3	Pol Sci	Field Elective	3
PL204	Introduction to Philosophy	3	Pol Sci	Elective	3
EC201	Principles of Macroeconomics	3	EN220	Advanced Composition	3
BA/BS	Cognate Elective	4	SD302	Argumentation and Advocacy	3
		<u>16</u>	BA/BS	Cognate	4
					16
Fourth Year					
PS491	Senior Seminar I	3	PS492	Senior Seminar II	3
Pol Sci	Field Elective	4	Pol Sci	Field Elective	4
	Elective	3		Elective	3
	Elective	3		Elective	3
	Elective	3		Elective	3
		<u>16</u>			16

*May be taken in spring semester.

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, 334, 340) 3-4
 International Relations (PS241, 411, 420) 3-4
 Political Philosophy (PS351, 352) 4
 PS467 Constitutional Law and Civil Liberties 4
 PS491 Senior Seminar I 3
 PS492 Senior Seminar II 3

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	3
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

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
BA254	Business Law I	3
BA255	Business Law II	3

Bachelor of Arts/Bachelor of Science Cognates

FALL		SPRING		
First Year				
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication	3
PS110	Intro. to American Gov't. & Politics	4	PS120 Intro. to Legal Processes	3
Nat Sci	Elective	3	HS History Sequence Elective	4
HS	History Sequence Elective	4	Nat Sci Elective	3
SA100	How to Succeed in College	1	Nat Sci Elective	3
		<u>15</u>		<u>16</u>
Second Year				
EN210	Research Paper Process*	3	HU252 Humanities II	4
HU251	Humanities I	4	PS130 Intro. to State and Local Government	4
PS222	Intro. to the Legal Profession	2	PS211 Political Science Research and Statistics	4
CS101	Intro. to Microcomputer Applications	3	Elective	1
BA/BS	Cognate	3	BA/BS Cognate	3
		<u>15</u>		<u>16</u>
Third Year				
PS	Field Elective	3	Pol Sci Field Elective	3
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
Nat Sci	Elective	3	BA/BS Cognate	3
		<u>16</u>		<u>15</u>
Fourth Year				
PS491	Senior Seminar I	3	PS492 Senior Seminar II	3
LA202	Legal Writing & Analysis	3	Law Elective	3
PS467	Constitutional Law and Civil Liberties	4	Pol Sci Field Elective	4
	Law Elective	3	Elective	3
	Elective	3	Elective	2
		<u>16</u>		<u>15</u>

*May be taken in spring semester.

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
SO101	Introduction to Sociology	3
SO213	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	3
PS492	Senior Seminar II	3
PS499	Public Administration Internship	3

A minimum of one course in each of three political science fields:

Comparative Politics (PS160, 331, 334, 340)	3-4
International Relations (PS241, 411, 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
SO313	Work and Organization	3
SD302	Argumentation and Advocacy	3-4
SD320	Public Relations	3

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SD101	Fund. of Speech Communication	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
SA100	How to Succeed in College	1		Elective	1
		<u>16</u>			<u>16</u>
Second Year					
EN210	Research Paper Process*	3	Nat Sci	Natural Science Elective	3
HU251	Humanities I	4	HU252	Humanities II	4
PS201	Intro. to Public Administration	3	Pol Sci	Field Elective	4
CS101	Intro. to Microcomputer Applications	3	PS211	Political Science Research & Statistics	4
	Elective	1		Elective	1
		<u>16</u>			<u>16</u>
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	3
	Elective	3		Elective	2
		<u>16</u>			<u>16</u>
Fourth Year					
PS491	Senior Seminar I	3	PS492	Senior Seminar II	3
PS401	Prin. of Public Administration	3	PS499	Political Science/Public Administration Internship	3
EC305	Public Finance	3			3
MN365	Human Resource Management	3	Pol Sci	Field Elective	3
	Elective	3		Elective	3
		<u>15</u>		Elective	3
					<u>3</u>
					<u>15</u>

*May be taken in spring semester.

Pre-Pharmacy *(transfer program)*

See College of Natural and Health Sciences, page 245.

Program Description:

Most pharmacy schools require students to take two years of pre-pharmacy preparation prior to being admitted to their 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 midway 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 Description:

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 organization.

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 211.

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?

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 Description:

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.

Psychology Bachelor of Arts Bachelor of Science

Required Psychology Credits (35 credits)

PY101	Introduction to Psychology	4
PY210	Statistics	3
PY212	Experimental Psychology	3
PY311	Learning and Motivation	3
PY357	Personality Theory	3
PY396	Tests and Measurements	3
PY456	History & Systems of Psychology	3
PY457	Cognition	3
PY459	Physiological Psychology	3
PY498	Senior Research I	3
PY499	Senior Research II	4

Elective Psychology Credits (6 credits)

PY	Elective - any level	3
PY217	Social Psychology	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 21 credits in teacher education courses including TE150, TE250, TE301, TE401 and TE402.

Secondary Education*

Complete a minor approved for teacher education and complete 21 hours in teacher education courses including TE150, TE250, TE301, TE401 and TE402.

*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		SPRING			
First Year					
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication	3	
	Foreign Language	4	PY212 Experimental Psychology	3	
PY101	Introduction to Psychology	4	Foreign Language	4	
PY210	Statistics	3	Physical Science	4	
BL105	Function of the Human Body	4	Elective	2-4	
		<u>18</u>		<u>16-18</u>	
Second Year					
EN210	Research Paper Process*	3	PY	Elective	3
	Minor Course	3		Minor Course	3
PY311	Learning & Motivation	3	PY396	Tests & Measurements	3
PY357	Personality Theory	3		Minor Course	3
NS	Elective	4	PY	Designated Elective	3
		<u>16</u>			<u>15</u>
Third Year					
PY459	Physiological Psychology	3	PY457	Cognition	3
	HU or elective	3-4		HU or Elective	3-4
	Minor Courses	6		Minor Courses	6
	Elective	3		Elective	3
		<u>15-16</u>			<u>15-16</u>
Fourth Year					
PY498	Senior Research I	3	PY499	Senior Research II	4
PY456	History & Systems of Psychology	3		Electives	10
	Minor Course	3			<u>14</u>
	Electives	3-6			
		<u>12-15</u>			

*May be taken fall or spring semester.

Bachelor of Science

FALL		SPRING			
First Year					
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication	3	
PY101	Introduction to Psychology	4	PY	Elective	3
PY210	Statistics	3	PY212	Experimental Psychology	3
BL105	Function of the Human Body	4		Natural Science	4
MA	Elective 100+ level	2-4	MA	Elective 100+ level	3-4
		<u>16-18</u>			<u>16-17</u>
Second Year					
EN210	Research Paper Process*	3	PY	Designated Elective	3
	Minor Course	3		Minor Course	3
PY311	Learning & Motivation	3	PY396	Tests & Measurements	3
PY357	Personality Theory	3		Electives	3
	Cognate Course	3		Physical Science	3
		<u>15</u>			<u>15</u>
Third Year					
PY459	Physiological Psychology	3	PY457	Cognition	3
HU	Humanities	4	HU	Humanities	4
	Minor Courses	6		Minor Courses	6
	Elective	3		Elective	3
		<u>16</u>			<u>16</u>
Fourth Year					
PY498	Senior Research I	3	PY499	Senior Research II	4
PY456	History & System of Psychology	3		Electives	11
	Minor Course	3			<u>15</u>
	Electives	6			
		<u>15</u>			

*May be taken fall or spring semester.

Recreation Management

See College of Natural and Health Sciences, page 245.

Bachelor of Science

Bachelor of Arts

Concentration in Parks and Recreation Management

Career Choices:

Park Ranger
Recreation Technician
Outdoor Educator
Instructor/Guide
Facility Manager
Activity Director
Interpreter

Student Profile:

Are you ...

people oriented?
a good communicator, with both written and oral skills?
flexible and creative?
a team player?

Program Description:

The bachelor of arts/bachelor of science in recreation management is a professional degree which focuses on leading, planning and managing recreation leisure opportunities for all ages in a variety of settings. A business minor is included in the degree, and additional career specializations can be achieved with select minors or concentrations.

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.

Career Description:

Facility Manager — administers facilities and programs affiliated with the commercial recreation and resort industry.

Activity Director — provides recreation and leisure services through organizations such as the YMCA, YFCA, Red Cross, organized camping, corporations and industry.

Outdoor Educator — provides information, instruction, presentations and interactive opportunities relative to preserving, protecting and enhancing the natural environment, ecosystems, habitats and species which rely on those environments.

Park Ranger — provides back country or front country assistance and information to visitors of the park. Enforces rules and regulations of the park.

Interpreter — provides information to the visitor regarding natural and cultural history and phenomenon 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.

Recreation Management Bachelor of Science

Department Requirements (29 credits)

ES140	Health and Fitness	3
RA	Recreation Activity	1
RA	Recreation Activity	1
RC101	Introduction to Recreation & Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC295	Practicum	1
RC390	Recreation Leader Apprenticeship	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC436	Therapeutic Recreation and Leisure Science Research	2
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492	Internship	6

Business Requirements (25 credits)

AC132	Principles of Accounting I	4
BA231	Business Communications	3
BA254	Business Law I	3
EC201	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 (20 credits)

BL105	Function of the Human Body	4
CS101	Intro. to Microcomputer Application	3
HE181	First Aid	1
HM480	Grantwriting	3
PS130	Intro. to State and Local Government	4
PS160	Intro. to Canadian Government	3
PY101	Introduction to Psychology	4
PY155	Lifespan Development	3
PY210	Statistics	3

Department Electives (16 credits)

ES141	Introduction to Movement	3
ES240	Techniques of Athletic Training	2
ES242	Sports Medicine	3
ES248	Psychology of Sport and Performance and Coaching	3
ES342	Exercise Physiology	3
ES344	Kinesiology	3
ES348	Fitness Evaluation II — Laboratory Procedures	3
ES442	Electrocardiography in Exercise Science	2
ES444	Exercise Prescription	2
RC212	Instructional Methods in Adapted Aquatics	2
RC220	Methods of Arts & Crafts	3
RC240	Found. of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC270	Sports Management	3
RC280	Readiness in Games, Activities and Sports	3
RC295	Practicum	1-3

FALL			SPRING		
First Year					
EN110	Freshman Composition	3	BL105	Function of the Human Body	4
ES140	Health and Fitness	3	HE181	First Aid	1
PY101	Introduction to Psychology	4	PS130	Introduction to State and Local Government	4
RC101	Introduction to Recreation and Leisure Services	3	RC105	Program Development and Leadership in Recreation and Leisure Services	3
	Computer Literacy Elective	3	SD101	Fund. of Speech Communication	3
		16			15
Second Year					
BA231	Business Communications	3	AC230	Fundamentals of Accounting	4
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN205	Technical Report Writing or			General Elective	3
EN210	Research Paper Process	3		Physical Science	3
MK281	Marketing Principles and Strategy	3		Statistics	3
RC295	Practicum	1			16
RC	Elective	3			
		16			
Third Year					
BA254	Business Law I	3	FN245	Principles of Finance	3
HU251	Humanities I	4	MN360	Principles of Management	3
RC	Elective	3	RC390	Recreation Leader Apprenticeship	1
	Cultural Diversity Elective	3	RC	Elective	3
	General Elective	4		Aesthetics Elective	3-4
		17		General Elective	3
					16-17
Fourth Year					
HM480	Grantwriting	3	RC436	Therapeutic Recreation and Leisure Science Research	2
RC435	Problems and Issues in Therapeutic Recreation	3	RC450	Philosophy of Leisure and Human Performance	3
RC481	Professional Development Seminar	1	RC492	Internship	6
RC482	Administration of Recreation and Leisure Services	4	RC	Elective	3
RC	Elective	3			14
		14			

RC320	Dance and Rhythmic Activities for Recreation	3
RC340	Program Development in Therapeutic Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disabling Conditions	3
RC346	Clinical Issues & Practice in Therapeutic Recreation	3
RC362	Land Management for Recreation Purposes	3
RC365	Expedition Management	3
RC370	Recreation for Elderly	3
RC390	Recreation Leader Apprenticeship	1
RC496	Selected Research Topics	1-3

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

Recreation Management

Recreation Management Bachelor of Arts

Bachelor's Degrees

Department Requirements (29 credits)

ES140	Health and Fitness	3
RA	Recreational Activity	1
RA	Recreational Activity	1
RC101	Introduction to Recreation	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC295	Practicum	1
RC390	Recreation Leader Apprenticeship	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC436	Therapeutic Recreation and Leisure Science Research	2
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492	Internship	6

Business Requirements (25 credits)

AC230	Fundamentals of Accounting	4
BA231	Business Communications	3
BA254	Business Law I	3
EC201	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 (20 credits)

BL105	Functions of the Human Body	4
CS101	Intro. to Microcomputer Applications	3
HE181	First Aid	1
HM480	Grantwriting	3
PS130	Intro. to State and Local Government	4
	or	
PS160	Intro. to Canadian Government	3
PY101	Introduction to Psychology	4
	or	
PY155	Lifespan Development	3
PY210	Statistics	3

Department Electives (16 credits)

ES141	Introduction to Movement	3
ES240	Techniques of Athletic Training	2
ES242	Sports Medicine	3
ES248	Psychology of Sport and Performance and Coaching	3
ES342	Exercise Physiology	3
ES344	Kinesiology	3
ES348	Fitness Evaluation II — Laboratory Procedures	3
ES442	Electrocardiography in Exercise Science	2
ES444	Exercise Prescription	2
RC212	Instructional Methods in Adapted Aquatics	2
RC220	Methods in Arts & Crafts	3
RC240	Found. of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC270	Sports Management	3
RC280	Readiness in Games, Activities and Sports	3

FALL		SPRING			
First Year					
EN110	Freshman Composition	3	BL105	Function of the Human Body	4
ES140	Health and Fitness	3	HE181	First Aid	1
RC101	Introduction to Recreation and Leisure Services	3	RC105	Program Development and Leadership in Recreation and Leisure Services	3
	Computer Literacy	3	SD101	Fund. of Speech Communication	3
	General Elective	3		General Elective	4
		<u>15</u>			<u>15</u>
Second Year					
BA231	Business Communications	3	AC230	Fundamentals of Accounting	4
EC201	Principles of Macroeconomics	3	EC202	Principles of Microeconomics	3
EN205	Technical Report Writing	3		Foreign Language	4
	or			Physical Science	3
EN210	Research Paper Process	3		Statistics	3
RC295	Practicum	1			<u>17</u>
RC	Elective	3			
	Foreign Language	4			
		<u>17</u>			
Third Year					
BA254	Business Law I	3	FN245	Principles of Finance	3
HU251	Humanities I	4	MN360	Principles of Management	3
MK281	Marketing Principles and Strategy	3	RC390	Recreation Leader Apprenticeship	1
	Cultural Diversity Elective	3	RC	Elective	3
RC	Elective	3		Aesthetics Elective	3-4
		<u>16</u>		General Elective	3
					<u>16-17</u>
Fourth Year					
HM480	Grantwriting	3	RC436	Therapeutic Recreation and Leisure Science Research	2
RC435	Problems and Issues in Therapeutic Recreation	3	RC450	Philosophy of Leisure and Human Performance	3
RC481	Professional Development Seminar	1	RC492	Internship	6
RC482	Administration of Recreation and Leisure Services	4	RC	Elective	3
RC	Elective	3			<u>14</u>
		<u>14</u>			

RC295	Practicum	1-3
RC320	Dance and Rhythmic Activities for Recreation	3
RC340	Program Development in Therapeutic Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disable Conditions	3
RC346	Clinical Issues and Practice in Therapeutic Recreation	3
RC362	Land Management for Recreation Purposes	3
RC365	Expedition Management	3
RC370	Recreation for Elderly	3
RC390	Recreation Leader Apprenticeship	1
RC496	Selected Research Topics	1-3

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

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 (57 credits)

AC230	Fundamentals of Accounting	4
BL102	Careers in Natural Resources	1
BL130	Introduction to Remote Sensing	3
BL230	Introduction to Soils	4
BL284	Principles of Forestry	3
BL286	Watershed Management	3
CH108	Applied Chemistry	4
CS100	Introduction to Microcomputer Applications	3
EN205	Technical Report Writing	3
EV230	Intro. to Geographical Information Systems, GIS	3
HE181	First Aid	1
HM480	Grantwriting	3
HU251	Humanities I	4
PS130	Introduction to State and Local Government	4
PY101	Introduction to Psychology	4
PY210	Statistics	3
MA207	Principles of Statistical Methods	3
RC101	Introduction to Recreation	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC262	Outdoor Recreation	3
RC362	Land Management for Recreation Purposes	3
RC365	Expedition Management	3
RC435	Problems and Issues in Therapeutic Recreation	3
RC436	Therapeutic Recreation and Leisure Science Research	2
RC481	Professional Development Seminar	1
RC482	Administration of Recreation and Leisure Services	4
RC492	Recreation Internship	6
SD101	Fund. of Speech Communication	3
TC	Outdoor Construction	3
TC111	Small Engine Mechanics	2

FALL		SPRING			
First Year					
BL102	Careers in Natural Resources	1	BL130	Introduction to Remote Sensing	3
EN110	Freshman Composition	3	BL140	Introduction to Fish and Wildlife	1
NS103	Environmental Science	3	CH108	Applied Chemistry	4
PY101	Introduction to Psychology	4	HE181	First Aid	1
RC101	Introduction to Recreation and Leisure Services	3	RC105	Program Development and Leadership in Recreation and Leisure Services	3
		<u>14</u>	Elective		<u>3</u>
					15
Second Year					
BL230	Introduction to Soils	4	BL284	Principles of Forestry	4
BL240	Natural History of Vertebrates	3	BL286	Watershed Management	3
EN205	Technical Report Writing	3	EV230	Introduction to Geographical Information Systems, GIS	3
RC262	Outdoor Recreation	3	HU251	Humanities I	4
SD101	Fund. of Speech Communication	3	TC111	Small Engine Mechanics	2
		<u>16</u>			<u>16</u>
Third Year					
CS100	Intro. to Microcomputer Applications	3	AC230	Accounting	4
HM480	Grantwriting	3	MA207	Principles of Statistical Methods	3
TC	Outdoor Construction	3	or		3
	Aesthetic	4	PY210	Statistics	3
	Elective	<u>3</u>	PS130	Intro. to State and Local Government	4
		16	RC295	Recreation Practicum	1
			Elective		<u>3</u>
					15
Fourth Year					
RC390	Recreation Leader Apprenticeship	1	RC362	Land Management for Recreation Purposes	3
RC435	Problems and Issues in Therapeutic Recreation	3	RC365	Expedition Management	3
RC481	Professional Development Seminar	1	RC436	Therapeutic Recreation and Leisure Science Research	2
RC482	Administration of Recreation and Leisure Services	4	RC492	Recreation Internship	6
	Cultural Diversity	3	Ethics		<u>3</u>
	Elective	<u>3</u>			17
		15			

Social Science

See College of Arts, Letters and Social Sciences, page 211.

Bachelor of Science Bachelor of Arts

Career Choices

Secondary or Elementary Teacher
Urban and Regional Planner
Government Worker

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. Teacher education students may elect to major in this area.

Career Description:

Elementary/Secondary Teacher — teaches elementary, middle and high school students; becomes educational administrator.

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.

Student Profile:

Do you...

like to make things happen?

want to change people for the better?

like to work with other people?

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 two courses from S0302, PY210, PY212, HS496.

Minor or Cognate: To earn a bachelor of arts degree, students must take eight credits of a foreign language as well as an additional 12 approved credits from English, humanities, speech, journalism or philosophy (beyond general education requirements).

For a bachelor of science degree, students will take an approved minor in natural science or social science (20-28 credits).

General Education and Electives: Students must complete all the general education requirements and electives to total 124 semester credits.

Bachelor of Arts

FALL		SPRING		
First Year				
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication	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				
EN210	Research Paper Process*	3	Social Sci Electives	6
	Intro Sequence III	3-4	Intro Sequence III	3-4
	Intro Sequence IV	3-4	Intro Sequence IV	3-4
NS	Elective	3	Elective	3
		<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>

*May be taken fall or spring semester.

Bachelor of Science

FALL		SPRING		
First Year				
EN110	Freshman Composition*	3	SD101 Fund. of Speech Communication	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				
EN210	Research Paper Process*	3	Soc Sci Electives	6
	Intro Sequence III	3-4	Intro Sequence III	3-4
	Intro Sequence IV	3-4	Intro Sequence IV	3-4
	Elective	3	Elective	3
		<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>		<u>3-6</u>
				<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>

*May be taken fall or spring semester.

Sociology

See College of Arts, Letters and Social Sciences, page 211.

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 Description:

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 (31 hours)
The sociology major consists of 22 credit hours of core courses and nine credit hours of sociology electives.

Core (22 hours)
Major courses required in sociology are:
SO101 Introduction to Sociology 3
SO238 Social Psychology 3
SO202 Social Research Methods 3
SO302 Statistics for Social Science 4
SO303 Contemporary Sociological Theory 3
SO403 Development of Sociological Theory 3
SO401 Sociological Research 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 21 credits in teacher education courses including TE150, TE250, TE301, TE401 and TE402.

Secondary Education

Complete a minor approved for teacher education and complete 21 hours in teacher education courses including TE150, TE250, TE301, TE401 and TE402.

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	Freshman Composition*	3	SO102	Social Problems	4
SO101	Introduction to Sociology	3	NS	Elective	4
NS	Elective	4	SD101	Fund. of Speech Communication	3
	Cognate or Elective	3		Cognate or Elective	3
		13			14

(Complete math proficiency, if necessary, during first year.)

Second Year

EN210	Research Paper Process*		SO202	Sociological Research Methods	3
	or	3	SO238	Social Psychology	3
EN215	Intro. to Literature & Research*			Cognate or Elective	5
	Sociology Course	3	HU	Elective	4
	Cognates or Electives	6			15
HU	Elective	4			
		16			

Third Year

SO302	Statistics for Social Sciences	4	SO403	Development of Sociological Theory	3
SO303	Contemporary Sociological Theory	3		Cognates or Electives	9
	Cognates or Electives	5		First Year Foreign Language II	4
	First Year Foreign Language I	4			16
		16			

Fourth Year

SO401	Sociological Research I	3		Sociology Course	3
	Cognates or Electives	14	SO403	Development of Sociological Theory	3
		17		Cognates or Electives	11
					17

*May be taken fall or spring semester.

Bachelor of Science

FALL			SPRING		
First Year					
EN110	Freshman Composition*	3	SO102	Social Problems	4
SO101	Introduction to Sociology	3		Elective	4
NS	Elective	4	SD101	Fund. of Speech Communication	3
	Cognate or Elective	3		Cognate or Elective	3
		13			14

(Complete math proficiency, if necessary, during first year.)

Second Year

EN210	Research Paper Process*		SO202	Sociological Research Methods	4
	or	3	SO238	Social Psychology	3
EN215	Intro. to Literature & Research*			Cognates or Electives	3
	Sociology Course	3	HU	Electives	7
	Cognates or Electives	6			17
HU	Elective	4			
		16			

Third Year

SO302	Statistics for Social Sciences	4	SO403	Development of Sociological Theory	3
SO303	Contemporary Sociological Theory	3		Cognates or Electives	9
	Cognates or Electives	6		Elective	4
	Electives	4			16
		17			

Fourth Year

SO401	Sociological Research I	3	SO402	Sociological Research II	3
	Cognates or Electives	14		Sociology Course	3
		17		Cognates or Electives	8
					14

*May be taken fall or spring semester.

Therapeutic Recreation

See College of Natural and Health Sciences, page 245.

Bachelor of Science

Career Choices:

Therapeutic Recreation Specialist

Student Profile:

Are you...

proactive, multi-dimensional and organized?

a believer in the benefits of a quality leisure lifestyle?

able to work well within an interdisciplinary team?

committed to helping others?

Program Description:

A multi disciplinary 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 Description:

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.

Therapeutic Recreation

Therapeutic Recreation Bachelor of Science

Therapeutic Recreation Requirements (46 credits)

ES141	Introduction to Movement	3
ES262	Exercise Physiology I	3
ES268	Fitness Evaluation I	2
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
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disabling Conditions	3
RC346	Clinical Issues and Practice in Therapeutic Recreation	3
RC390	Recreation Leader Apprentice	1
RC435	Problems and Issues in Therapeutic Recreation	3
RC436	Therapeutic Recreation and Leisure Science Research	2
RC481	Professional Development Seminar	1
RC492	Internship in Recreation	6

Cognate Requirements (10 credits)

BL121	Human Anatomy and Physiology I	4
HE354	Legal and Financial Issues in Health Care Administration	3
HM480	Grantwriting	3

Bachelor of Science Requirements (9 credits)

PY155	Life-span Development	3
PY201	Communication Skills in Counseling	3
PY245	Abnormal Psychology	3

Departmental Electives (6 credits)

ES349	Orthopaedic 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
RC370	Recreation for the Elderly	3
RC482	Administration of Recreation and Leisure Services	4
RC496	Selected Research Topics	1

Cognate Electives (6 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
SO326	Sociology of Aging and Aged	3
SO327	Sociology of Death and Dying	3

FALL		SPRING			
First Year					
BL121	Human Anatomy and Physiology I	4	BL122	Human Anatomy and Physiology II	4
EN110	Freshman Composition	3	ES140	Health and Fitness	3
CS101	Introduction to Microcomputer Applications	3	NS110	Chemistry in Society	3
PY101	Introduction to Psychology	4	NS111	Chemistry in Society Lab	1
RC101	Introduction to Recreation and Leisure Services	3	SD101	Fund. of Speech Communication	3
		<u>17</u>			<u>14</u>
Second Year					
EN210	Research Paper Process	3	ES141	Introduction to Movement	3
HU251	Humanities I	4	PY155	Lifespan Development	3
RC240	Found. of Therapeutic Recreation	3	PY201	Communication Skills in Counseling	3
RC262	Outdoor Recreation	3	RC105	Program Development and Leadership in Recreation Services	3
RC295	Recreation Practicum	1		Aesthetics	3-4
SO113	Sociology of the American Family	3			<u>15-16</u>
		<u>17</u>			
Third Year					
ES262	Exercise Physiology I	3	PY259	Abnormal Psychology	3
HE228	Multicultural Approach to Health Care	3	RC344	Recreational Pursuits and Disabling Conditions	3
RC340	Program Development in Therapeutic Recreation	3	RC346	Clinical Issues and Practice in Therapeutic Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3	RC390	Recreation Leader Apprentice	1
	Statistics	3		Department Elective	3
		<u>15</u>		Cognate Elective	3
					<u>16</u>
Fourth Year					
ES268	Fitness Evaluation I	2	ES/RC450	Philosophy of Leisure and Human Performance	3
RC435	Problems and Issues in Therapeutic Recreation	3	HE354	Legal and Financial Issues in Health Care Administration	3
RC481	Professional Development Seminar	1	HM480	Grantwriting	3
	Department Elective	3	RC436	Therapeutic Recreation and Leisure Science Research	3
	Cognate Elective	3		Elective	3
		<u>12</u>			<u>14</u>
SUMMER					
RC492	Recreation Internship	6			

Bachelor's Degrees

Business Administration

See College of Engineering, Mathematics and Business, page 231.

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. Please see page 232 regarding this program's accreditation.

Career Description:

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.

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	Freshman Composition	3
EN210	Research Paper Process	3
	<i>or</i>	
EN215	Intro. to Literature & Research	3
PY101	Introduction of Psychology	3-4
	<i>or</i>	
PY228	Organizational Behavior	3
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
DP151	Computer Applications	3
FN245	Principles of Finance	3-4
	<i>or</i>	
FN341	Managerial Finance	4
MK281	Marketing Principles and Strategy	3
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	4	SD101 Fundamentals of Speech 3
	<i>or</i>		MK283 Marketing Principles & Strategy 3
AC230	Fundamentals of Accounting	3	MK285 Retail Management 3
EN110	Freshman Composition*	3	EC202 Principles of Microeconomics 3
PY101	Introduction to Psychology	3-4	DP151 Computer Applications 3
	<i>or</i>		15
PY228	Organizational Behavior	3	
BA105	Business Mathematics	3	
	Elective	3	
		16-17	
Second Year			
MK283	Principles of Selling	3	MN365 Human Resource Management 3
BA254	Business Law I	3	MK387 Advertising Theory and Practice 3
EN210	Research Paper Process	3	BA255 Business Law II 3
	<i>or</i> *	3	BA231 Business Communications 3
EN215	Intro. to Literature & Research	3	Elective
EN245	Principles of Finance	3	3-4
	Elective	3	15-16
		15	

*English composition may be taken either fall or spring semester.

Chemistry

See College of Natural and Health Sciences, page 245.

Associate's Degree

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.

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?

Associate's Degrees

Chemistry	(23 credits)
CH115 General Chemistry I	5
CH116 General Chemistry II	4
CH225 Organic Chemistry I	4
CH226 Organic Chemistry II	4
CH231 Quantitative Analysis	4
CH232 Instrumental Analysis	4

Other Departments	(35 credits)
CS101 Intro. to Microcomputer Applications	3
EN110 Freshman Composition	3
EN205 Technical Report Writing	3
MA151 Calculus I	4
MA152 Calculus II	4
MA251 Calculus III	4
PH231 Applied Physics for Engineers and Scientists I	4
PH232 Applied Physics for Engineers and Scientists II	4
SD101 Fund. of Speech Communication	3
Social Science Elective	3

Students are required to take a total of 63 semester credits.

FALL		SPRING	
First Year			
CH115 General Chemistry I	5	CH116 General Chemistry II	4
MA151 Calculus I	4	MA152 Calculus II	4
EN110 Freshman Composition	3	CS101 Intro. to Microcomputer Applications	3
SD101 Fund. of Speech Communication	3	SS or HU Elective	3
Free Elective	3		14
	18		
Second Year			
CH225 Organic Chemistry I	4	CH226 Organic Chemistry II	4
CH231 Quantitative Analysis	4	CH232 Instrumental Analysis	4
PH231 Applied Physics for Engineers and Scientists I	4	PH232 Applied Physics for Engineers and Scientists II	4
EN205 Technical Report Writing	3	MA251 Calculus III	4
Free Elective	2		16
	17		

Computer Science

See College of Engineering, Mathematics and Business, page 231.

Associate's Degree

Career Choices:

Computer Programmer

Systems Analyst

Database Administrator

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 Description:

Computer Programmer — designs, writes and tests computer programs; programming can be done at the applications level or the systems level.

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.

Student Profile:

Do you...

like working with computers?

enjoy the challenge of problem-solving?

Departmental Courses (28 credits)

CS101	Intro. to Microcomputer Applications	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 (34 credits)

BA121	Introduction to Business	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
PY101	Introduction to Psychology	4
SD101	Fund. of Speech Communication	3

General Education Courses 6

Free Electives 12

Total Credits in Program 62

FALL		SPRING			
First Year					
CS101	Intro. to Microcomputer Applications	3	CS121	Survey of Computer Science	3
CS105	Intro. to Computer Programming	3	MA207	Principles of Statistical Methods	3
EN110	Freshman Composition	3	BA121	Introduction to Business	3
PY101	Introduction to Psychology	4		General Education Course	3
	Free Elective	3		Free Elective	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
EN205	Technical Report Writing	3		General Education Course	3
	Free Elective	3		Free Elective	3
		<u>15</u>			<u>16</u>

Construction Technology

See College of Engineering, Mathematics and Business, page 231.

Associate of Applied Science

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 internal finishing. Commercial construction is also an option, offering more experience with concrete and large-scale construction techniques.

Career Description:

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 sheathings.

Roofer — installs flashings for vents, chimneys and valleys; applies tarpaper, 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 worksite 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.

Career Choices:

Rough Carpenter/Foreman
Roofer
Finish Carpenter
General Laborer
Remodeling Carpenter

Student Profile:

Do you ...
like to build?
take pride in quality work?

FALL		SPRING	
First Year (common)			
TC191	Class Internship	4	TC191 Class Internship 4
TC192	On-Site Internship	2	TC192 On-Site Internship 2
Math	Industrial Math	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			
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	2	EN110 Freshman Composition 3
SS	Social Science Elective	3	TC102 Construction II 3
HE181	First Aid	1	
		<u>16</u>	<u>16</u>

Criminal Justice

See College of Arts, Letters
and Social Sciences, page 211.

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?

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 Description:

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.

Criminal Justice Corrections Emphasis Associate's Degree

Basic Requirements	(9 credits)
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 <i>or</i>	3
CJ202 Canadian Criminal Law	
CJ330 Correctional Casework	3
CJ355 Juvenile Justice	3
Support Courses	(6 credits)
PS120 Introduction to Legal Process <i>or</i>	3
PS160 Intro. to Canadian Government and Politics	
S0214 Criminology	3
Electives	(17 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	Electives	6
EN110	Freshman Composition	3	PS120 Introduction to Legal Process	
	Elective	4	<i>or</i>	3
		16	PS160 Intro. to Canadian Government and Politics	15
Second Year				
CJ240	Community Based Corrections	3	CJ220 Institutional Corrections	3
CJ250	Correctional Law	3	CJ330 Correctional Casework	3
CJ319	Substantive Criminal Law <i>or</i>	3	S0214 Criminology	3
CJ202	Canadian Criminal Law		CJ355 Juvenile Justice	3
EN210	Research Paper Process	3	Electives	3
	Electives	4		15
		16		

Criminal Justice Law Enforcement Emphasis Associate's Degree

Basic Requirements	(9 credits)
Major Requirements	(16 credits)
CJ101 Intro. to Criminal Justice	3
CJ102 Police Process	3
CJ201 Firearms Training	1
CJ206 Law Enforcement/Loss Control Internship	3
CJ212 Loss Control	3
CJ243 Investigation	3
Support Courses	(17 credits)
PS110 Introduction to American Government and Politics	4
PS120 Introduction to Legal Process	3
S0103 Cultural Diversity	3
S0214 Criminology	3
PY101 Introduction to Psychology	4
Electives	(20 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	3
EN110	Freshman Composition	3	SD101 Fundamentals of Speech	3
S0214	Criminology	3	SO103 Cultural Diversity	3
	Electives	3	Electives	3
		15		16
Second Year				
CJ201	Firearms Training	1	CJ206 Law Enforcement/Loss Control Internship	3
CJ212	Loss Control	3	EN210 Research Paper Process	3
CJ243	Investigation	3	PS120 Introduction to Legal Process	3
	Electives	8	Electives	6
	Electives	15		15

Early Childhood Education

See Department of Education, page 216.

Associate's Degree

Career Choices:

Day 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?

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 human services at the University or pursue a degree in early childhood education, human services or elementary education. A total of 62 credits is required.

Career Description:

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.

Day 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.

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
EN110	Freshman Composition	3
EN210	Research Paper Process	3
HE104	Nutrition for Early Childhood	3
HE181	First Aid	1
SD101	Fund. of Speech Communication	3
SO103	Cultural Diversity	3
SO225	Native Cultures of North America or	3
SO113	Sociology of the American Family	3
Cognate Required:		
PY155	Lifespan Development or	3
PY265	Child & Adolescent Development	
PY288	Organizational Behavior or	3
PY301	Exceptional Child & Adolescent	

FALL		SPRING	
First Year			
EN110	Freshman Composition	3	SD101 Fund. of Speech Communication 3
BL105	Function of the Human Body	4	SO113 Sociology of the American Family 3
PY155	Life-Span Development	3	HE104 Nutrition for Early Childhood 3
	or	3	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	
		<u>16</u>	
Second Year			
EN210	Research Paper Process	3	ED270 Administration of Early Childhood Programs 3
ED220	Early Childhood Literature	3	Electives 5
ED260	Practicum I	4	ED261 Practicum II 4
PY* or SO** Elective		2	PY* or SO** 3
		<u>15</u>	

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

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

Fire Science

See College of Arts, Letters
and Social Sciences, page 211.

Associate's Degree

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 Description:

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.

Career Choices:

Firefighter
Fire Safety Officer

Student Profile:

Are you...
interested in the safety of others?
physically fit?

Associate's Degrees

Major Requirements (21 credits)

CJ341	Fire Cause & Arson Investigation	3
FS101	Introduction to Fire Science	3
FS111	Hazardous Materials	3
FS204	Fire Protection Hydraulics & Pumps	3
FS205	Fire Protection Systems Equipment	3
FS211	Tactics & Strategy	3
FS321	Industrial Fire Protection	3

Support Courses (21 credits)

HE190	Prehospital Emergency Care & Crisis Intervention I	3
HE191	Prehospital Emergency Care & Crisis Intervention II	3
SO, PY or PS Electives		9
TC101	Construction I	3
TC102	Construction II	3

Electives (11 credits)

(FS420 required for MFFTC certification)

FALL		SPRING			
First Year					
FS101	Introduction to Fire Science	3	HE191	Prehospital Emergency Care and Crisis Intervention II	3
FS111	Hazardous Materials	3	SD101	Fundamentals of Speech	3
EN110	Freshman Composition	3	TC102	Construction II	3
TC101	Construction I	3	SO, PY or PS Electives		4
HE190	Prehospital Emergency Care and Crisis Intervention I	3	Electives		4
		<u>15</u>			<u>16</u>
Second Year					
FS204	Fire Protection Hydraulics and Pumps	3	FS205	Fire Protection Systems Equipment	3
EN205	Technical Report Writing or	3	FS211	Tactics & Strategy	3
EN210	Research Paper Process	3	FS321	Industrial Fire Protection	3
SO, PY or PS Electives		6	GJ341	Fire Cause & Arson Investigation	3
Electives		3	Electives		4
		<u>15</u>			<u>16</u>

General Engineering

See College of Engineering, Mathematics and Business, page 231.

Associate's Degree

67-Hour Program

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 Degrees

FALL		SPRING	
First Year			
CH115	General Chemistry I	5	EG265 "C" Programming 3
EN110	Freshman Composition	3	CH116 General Chemistry II 4
MA151	Calculus I	4	MA152 Calculus II 4
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4	RA Humanities/Aesthetics Elective 4
EG101	Introduction to Engineering	2	
		<u>18</u>	<u>16</u>
Second Year			
EC201	Principles of Macroeconomics	3	EC202 Principles of Microeconomics 3
EN210	Research Paper Process	3	MA251 Calculus III 4
MA207	Principles of Statistical Methods	3	MA310 Differential Equations 3
PH231	Applied Physics for Engineers and Scientists I	4	PH232 Applied Physics for Engineers and Scientists II 4
	Elective	4	SD101 Fund. of Speech Communication 3
		<u>17</u>	<u>17</u>

Departmental Requirements

Engineering Courses

EG101	Introduction to Engineering	2
EG265	"C" Programming	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4

Mathematics and Science Courses

CH115	General Chemistry I	5
CH116	General Chemistry II	4
MA151	Calculus I	4
MA152	Calculus II	4
MA251	Calculus III	4
MA310	Differential Equations	3
PH231	Applied Physics for Engineers and Scientists I	4
PH232	Applied Physics for Engineers and Scientists II	4

Support Courses

EC201	Principles of Macroeconomics	3
EC202	Principles of Microeconomics	3
EN110	Freshman Composition	3
EN210	Research Paper Process	3
RA	Elective	1
	Electives	4
SD101	Fund. of Speech Communication	3
	Humanities/Aesthetics	4/3

General Engineering Technology

See College of Engineering, Mathematics and Business, page 231.

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	3-4

Mathematics and Science Courses

MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
MA143	Calculus for Engineers I	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

Support Courses

CS101	Intro. to Microcomputer Applications	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
SD101	Fund. of Speech Communication	3
	Social Science Elective	4

FALL		SPRING			
First Year					
ET110	Applied Electricity & PLC	4	Technical Elective ¹	3-4	
EG101	Introduction to Engineering	2	CS101	Intro. to Microcomputer Applications	3
	Technical Elective ¹	3-4	SD101	Fund. of Speech Communication	3
MA109	Trigonometry and Vectors	2	MA143	Calculus for Engineering I	4
MA140	Algebra for Technologists	4	EN110	Freshman Composition	3
		<u>15-16</u>			<u>16-17</u>
Second Year					
EN205	Technical Report Writing	3	Social Science Elective	4	
PH221	Elements of Physics I	4	PH222	Elements of Physics II	4
MT225	Statics & Strength of Materials	3		Technical Electives ²	8
	Technical Electives ²	4			<u>16</u>
		<u>14</u>			
¹ First year technical electives to be chosen from:		² Second year technical electives to be chosen from:			
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4	RS280	Robotics Technology	4
ME110	Manufacturing Processes I	3	ET175	Applied Electronics	4
ET175	Applied Electronics	4	ET240	Communications I	4
			ET255	Computer Networks	4
			ME110	Manufacturing Processes I	3
			MT265	Quality Engineering	2
			ME115	Manufacturing Processes II	3
			MT215	Design for Manufacturing	4

Health Fitness Specialist

See College of Natural and Health Sciences, page 245.

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 Description:

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

FALL		SPRING		
First Year				
EN110	Freshman Composition	3	SD101 Fund. of Speech Communication	3
BL121	Human Anatomy & Physiology I	4	BL122 Human Anatomy & Physiology II	4
PY101	Introduction to Psychology	4	CH104 Life Chemistry I	3
CS101	Intro. to Microcomputer Applications	3	ES141 Introduction to Movement	3
ES140	Health Fitness	3	ES295 Practicum	1
		17	RA150 Individual Physical Fitness	1
			HE181 First Aid	1
				16
Second Year				
ES268	Fitness Evaluation I — Field Tests	2	RC280 Readiness in Games, Activities	
ES248	Psychology of Sport and Performance and Coaching	3	EN210 Research Paper Process	3
ES262	Exercise Physiology I	3	ES295 Practicum	1
ES240	Techniques of Athletic Training	2	HE208 Nutrition	2
ES242	Sports Medicine	3	RC105 Program Development and Leadership in Recreation	
	Elective	3	ES390 Recreation Leader Apprenticeship	1
		16	Elective	3
				16

*English composition may be taken either fall or spring semester.

General Education Requirements (19 credits)

CS101	Intro. to Microcomputer Applications	3
EN110	Freshman Composition	3
EN210	Research Paper Process	3
SD101	Fund. of Speech Communication	3
PY101	Introduction to Psychology	4
	Elective	3

Departmental Requirements (29 credits)

ES140	Health Fitness	3
ES141	Introduction to Movement	3
ES240	Techniques of Athletic Training	2
ES242	Sports Medicine	3
ES248	Psychology of Sport and Performance and Coaching	3
ES262	Exercise Physiology I	3
ES268	Fitness Evaluation I - Field Tests	2
ES295	Practicum	1
ES295	Practicum	1
ES390	Recreation Leader Apprenticeship	1
RA150	Individual Physical Fitness	1
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC280	Readiness in Games, Activities and Sports	3

Required Support (14 credits)

BL121	Human Anatomy & Physiology I	4
BL122	Human Anatomy & Physiology II	4
CH104	Life Chemistry I	3
HE181	First Aid	1
HE208	Nutrition	2

Minimum Credits for Degree

62

Internet/Network Specialist

See College of Engineering, Mathematics and Business, page 231.

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 Description:

Network Specialist/Manager — 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:

Network Specialist/Manager
Webmaster

Student Profile:

Do you ...
like working with computers?
enjoy the challenge of
problem-solving?

Associate's Degrees

Departmental Courses (25 credits)

CS101	Intro. to Microcomputer Applications	3
CS105	Intro. to Computer Programming	3
CS106	Advanced Web Page Design and 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 (21 credits)

DP160	PC Operating Systems	3
BA105	Business Math	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
BA121	Introduction to Business	3
BA231	Business Communications	3
SD101	Fund. of Speech Communication	3
	Free Electives	12-15
	General Education Electives	3-4

Total Credits in Program 61

FALL		SPRING			
First Year					
CS101	Intro. to Microcomputer Applications	3	CS106	Advanced Web Page Design and Administration	3
CS105	Intro to Computer Programming	3	DP160	PC Operating Systems	3
EN110	Freshman Composition	3	BA121	Introduction to Business	3
BA105	Business Math	4	SD101	Fund. of Speech Communication	3
	Free Elective	3-4	Free Elective		3-4
		16-17			15-16
Second Year					
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
EN205	Technical Report Writing	3	Free Elective		3-4
	Free Elective	3-4			16-17
		15-16			

Legal Assistant Studies

See College of Arts, Letters and Social Sciences, page 211.

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 2005 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 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 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* (53 credits)

BA254	Business Law I	3
BA255	Business Law II	3
CJ319	Substantive Criminal Law	3
EN110	Freshman Composition	3
EN210	Research Paper Process	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)

CSI01	Intro. to Microcomputer Applications	
	or	
DP225	Word Processing Techniques	
	or	
DP151	Applied Computer Applications	

Electives (8-9 credits)**

Electives are to be chosen in consultation with advisor.

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

****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	Freshman Composition*	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	2-3
OA119	Accounting Procedures	4	Electives	2-3
		16		15-17
Second Year				
EN210	Research Paper Process*	3	LA322 Probate Law and Procedure	3
LA202	Legal Writing & Analysis	3	BA255 Business Law II	3
LA320	Real Estate Law	3	LA250 Law Office Management, Systems and Technology	3
LA321	Family Law	2	Electives	6
BA254	Business Law I	3		15
CJ319	Substantive Criminal Law	3		
		17		

*May be taken fall or spring semester.

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

Liberal Arts

See General Education Requirements, page 63.

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, computer literacy, aesthetics, cultural diversity, social science and natural science.

General Education — for new students entering fall 1997 or later

Transfer students will be under the old general education requirements until fall 2000.

Communication Skills

EN 110

Select one course from the following three courses: EN 205, EN 210, EN 215

SD 101

Mathematics — Mathematics or statistics course at 100 level or higher with grade of C- or higher — CJ 345, MA 110, MA 207, MA 308, MA 309, PS 211, PY 210, SO 302

Computer literacy — CS101

Aesthetics — HU 251

Elective, including courses in specialized areas, e.g., art, music, world civilization and courses representing non-western works and/or women (3 or 4 credits): AT 250, AT 251, HU 252, HU 256, HU 261, HU 262, HU 490, MU 110, MU 111, MU 112, MU 113, MU 140, MU 141, MU 160, MU 161, MU 220, MU 221, MU 250, MU 251, NA 240

FALL		SPRING		
First Year				
EN110	Freshman Composition	3	SD101 Fund. of Speech Communication	3
	Social Science Elective	3-4	Social Science Elective	3-4
	Mathematics or Statistics	3-4	Natural Science Elective	4
	Minor Course	3	Minor Course	3
	Minor Course	4	Minor Course	3
		<u>16-18</u>		<u>16-17</u>
Second Year				
EN205	Technical Report Writing		CS101 Intro. to Microcomputer Applications	3
	or		Aesthetic	3-4
EN210	Research Paper Process	3	Cultural Diversity	3-4
	or		Minor	3
EN215	Intro. to Literature and Research		Elective	1
HU251	Humanities	4		<u>13-15</u>
	Natural Science Elective	4		
	Minor Course	3		
	Minor Course	3		
		<u>17</u>		

Cultural Diversity — One course from: BA 308, ES 450, EV 285, GG 306, HE 328, HS 230, HS 361, HS 371, HU 255, ID 300 - (component) to be taken with one offering of UN 103; MU 260, NA 225, NA 230, NA 235, RC 450, SO 103, SO 225, SO 226, SO 321, TE 250, UN 103 (to be taken with ID300).

Social Science — Two social science courses (6 to 8 credits); EC 201, EC 202, EC 208, EC 209, EC 302, GG 201, GG 302, GG 321, GG 360, HS 101, HS 102, HS 131, HS 132, HS 235, HS 301, HS 302, HS 310, HS 315, HS 316, HS 331, HS 332, NA 320, PS 110, PS 160, PY 101, SO 101, SO 102, SO 113.

Natural Science — Two natural science courses associated with labs (8 Credits); BL 105, BL 109, BL 122, BL 204, CH 108, CH 115, GE 111, GE 114, GG 106, GG 108, NS 101, NS 102, NS 103/104, NS 110/111, NS 119, PH 221, PH 231.

Machine Tool Technology

See College of Engineering, Mathematics and Business, page 231.

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
Math	Industrial Math	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 Dimension 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 <u>4</u>
EN110	Freshman Composition	3	<u>16</u>
		<u>16</u>	

Manufacturing Engineering Technology

See College of Engineering, Mathematics and Business, page 231.

Program Description:

The manufacturing engineering technology 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 Descriptions:

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.

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?

Manufacturing Engineering Technology

Manufacturing Engineering Technology Associate's Degree

Departmental Requirements (64 Credits)

Engineering and Engineering Technology Courses

EE125	Digital Fundamentals	4
ET110	Applied Electricity & PLC	4
ET175	Applied Electronics	4
ME110	Manufacturing Processes I	3
ME115	Manufacturing Processes II	3
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T)	4
ME275	Engineering Materials	3
MT225	Statics and Strength of Materials	3
RS280	Robotics Technology	3

Mathematics and Science Courses

MA109	Trigonometry and Vectors	2
MA140	Algebra for Technologists	4
MA207	Principles of Statistical Methods	3
MA208	Statistical Applications for Quality Control	1
PH221	Elements of Physics I	4
CH108	Applied Chemistry	4

Support Courses

CS101	Intro. to Microcomputer Applications	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
SD101	Fund. of Speech Communication	3
	Social Science Elective	4/3

FALL		SPRING	
First Year			
MA092	Intermediate Algebra* (4)	ME115	Manufacturing Processes II 3
	or	EN205	Technical Report Writing 3
	Social Science Elective* 3	MA140	Algebra for Technologists 4
ME110	Manufacturing Processes I 3	MA109	Trigonometry and Vectors 2
ME140	Computer-Aided Drafting and Geometric Dimension and Tolerancing (CAD and GD&T) 4	CH108	Applied Chemistry 4
EN110	Freshman Composition 3		<u>16</u>
CS101	Intro. to Microcomputer Applications 3		
	<u>16</u>		
Second Year			
PH221	Elements of Physics I 4	MT225	Statics & Strength of Materials 3
ET110	Applied Electricity & PLC 4	ME275	Engineering Materials 3
MA207	Principles of Statistical Methods 3	SD101	Fund. of Speech Communication 3
MA208	Statistical Applications for Quality Control 1	ET175	Applied Electronics 4
RS280	Robotics Technology 3	EE125	Digital Fundamentals 4
	<u>15</u>		<u>17</u>

Total credits required to complete associate degree = 64

*Students placed in MA092 should take the social science elective in the summer or later in the curriculum.

Natural Resources Technology

See College of Natural and Health Sciences, page 245.

Program Description:

Natural resources technology courses stress the acquisition of field skills necessary for success as a natural resource technician as well as the theoretical foundations for these skills. This practical knowledge is enriched by course materials which emphasize communication skills as well as 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's worth 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.

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
BL130	Remote Sensing	3
BL230	Introduction to Soils	4
BL240	Natural History of Vertebrates	3
BL284	Principles of Forestry	4
BL286	Watershed Management	3
CH108	Applied Chemistry	4
EV230	Introduction to GIS	3
NS103	Environmental Science	3

Other Departments (24 Credits)

CS101	Intro. to Microcomputer Applications	3
EN110	Freshman Composition	3
EN205	Technical Report Writing	3
HE 181	First Aid	1
MA111	College Algebra	3
RC101	Introduction to Recreation and Leisure Services	3
SD101	Fund. of Speech Communication	3
TC1xx	Outdoor Construction	3
TC111	Small Engine Mechanic	2

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?

Associate's Degrees

FALL		SPRING			
First Year					
EN110	Freshman Composition	3	BL140	Intro. to Fisheries & Wildlife	1
NS103	Environmental Science	3	BL130	Intro. to Remote Sensing	3
BL102	Careers in Natural Resources	1	CH108	Applied Chemistry	4
	Elective	3	SD101	Fund. of Speech Communication	3
CS101	Intro. to Microcomputer Applications	3	HE181	First Aid	1
RC101	Intro. to Recreation & Leisure Services	3	MA111	College Algebra	3
		<u>16</u>			<u>15</u>
Second Year					
BL230	Introduction to Soils	4	BL286	Watershed Management	3
BL240	Natural History of Vertebrates	3	BL284	Principles of Forestry	4
TC	Outdoor Construction	3		Elective	3
EN205	Technical Report Writing	3	TC111	Small Engine Mechanics	2
	Elective	3	EV230	Intro to Geographical Information Systems (GIS)	3
		<u>16</u>			<u>15</u>

Office Administration

See College of Engineering, Mathematics and Business, page 231.

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?

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. See page 232 regarding the accreditation for this program.

Career Description:

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.

Business Electives		(2-4)
MN365	Human Resource Management	3
MK281	Marketing Principles & Strategy	3
BA261	Business Skills	1-3
FN245	Principles of Finance	3
BA254	Business Law I	3

Sufficient elective credits must be completed so that at least 64 semester credits have been earned.

General Education Requirements

EN110	Freshman Composition	3
EN210	Research Paper Process	3
	or	
EN215	Intro. to Literature & Research	3
SD101	Fund. of Speech Communication	3
	General Education Electives	6

Departmental Requirements

BA226	Records Management	3
BA231	Business Communications	3
BA121	Introduction to Business	3
BA105	Business Mathematics	3
DP160	Personal Computer Work-Station Operating Systems	3
DP151	Spreadsheets	2
DP151	Data Base	2
DP241	Desktop Publishing	3
DP225	Word Processing Techniques	2
OA111	Keyboarding/Document Formatting I	3
OA112	Keyboard Skillbuilding	2-4
OA113	Document Formatting II	3
AC132	Principles of Accounting I	3
	or	
OA119	Accounting Procedures	4
OA235	Automated Office Systems	3

FALL		SPRING	
First Year			
OA111	Keyboarding/Document Formatting I	3	
BA121	Introduction to Business	3	
DP160	Operating Systems	3	
EN110	Freshman Composition	3	
BA105	Business Mathematics	3	
DP151	Spreadsheets	2	
		<u>17</u>	
OA112	Keyboard Skillbuilding		2
OA113	Document Formatting II		3
DP151	Database		2
SD101	Fund. of Speech Communication		3
	Elective		3
	Designated Business Elective		3
			<u>16</u>
Second Year			
EN210	Research Paper Process	4	
	or*		
EN215	Intro. to Literature & Research	3	
DP225	Word Processing Techniques	2	
OA119	Accounting Procedures	4	
	or		
AC132	Principles of Accounting I	3	
DP241	Desktop Publishing	3	
	General Education Elective	3	
		<u>15</u>	
BA231	Business Communications		3
OA235	Automated Office Systems		3
BA226	Records Management		3
	Designated Business Elective		1
	General Education Elective		3
	Elective		3
			<u>16</u>

Personal Computer Specialist

See College of Engineering, Mathematics and Business, page 231.

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. See page 232 regarding this program's accreditation.

Career Description:

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?

Associate's Degrees

Required for Degree		62 credits
General education requirements		
EN110	Freshman Composition	3
EN210	Research Paper Process	
	<i>or</i>	
EN215	Intro. to Literature & Research	3
PY228	Organizational Behavior	3
SD101	Fund. of Speech Communication	3
	General Education Electives	3
Department Requirements		
OA119	Accounting Procedures (<i>or</i> AC132 and AC133)	4
BA231	Business Communications	3
BA254	Business Law I	3
DP151	Spreadsheets	2
DP151	Database	2
DP160	Personal Computers Workstation Operating Systems	3
DP163	Troubleshooting & Repair of Personal Computers	3
OA111	Keyboarding/Document Formatting I	3
	<i>or</i>	
DP225	Word Processing Techniques	2
DP241	Desktop Publishing	3
DP260	Personal Computers Network Operating Systems	3
DP263	Storage, Protection & Recovery of PC	3
MK281	Marketing Principles & Strategy	3
	Electives	12

FALL		SPRING			
<i>First Year</i>					
OA111	Keyboarding/Document Formatting I	3	DP163	Troubleshooting and Repair of Personal Computers	3
	<i>or</i>		DP160	Personal Computer Workstation Operating Systems	3
DP225	Word Processing Techniques	2	DP151	Database	2
EN110	Freshman Composition	3	SD101	Fund. of Speech Communication	3
PY228	Organizational Behavior	3		Elective	6
DP151	Spreadsheets	2			17
BA254	Business Law I	3			
		13-14			
<i>Second Year</i>					
EN210	Research Paper Process	3	BA231	Business Communications	3
	<i>or</i>		DP260	Personal Computers Network Operating Systems	3
EN215	Intro. to Literature & Research	3	DP263	Storage, Protection and Recovery of Personal Computer	3
MK281	Marketing Principles & Strategy	3		Elective	6
OA119	Accounting Procedures	4			15
	<i>or</i>				
AC132	Principles of Accounting I	3			
DP241	Desktop Publishing	3			
	General Education Elective	3			
		16			

Substance Abuse Prevention and Treatment

See College of Arts, Letters and Social Sciences, page 211.

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?

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 Description:

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.

Substance Abuse Prevention and Treatment

Substance Abuse Prevention and Treatment Associate's Degree

Required Courses:

BL 105	Function of the Human Body	4
EN 110	Freshman Composition	3
EN 210	Research Paper Process	3
HM 204	Fundamentals of Drug Abuse	3
HM 250	Human Services Practicum	9
HM 292	Alcohol Abuse Prevention & Treatment	3
PY 101	Introduction to Psychology	4
PY 201	Communication Skills in Counseling	3
PY 259	Abnormal Psychology	3
SD 101	Fundamental of Speech	3
SO 242	Sociology of Sex	3
SO 341	Addiction	3
SO 344	Social Welfare Systems	3

Cognate- Required

SO 225	Native Cultures of North America <i>or</i>	3
SO 103	Cultural Diversity	
PY 291	Group Counseling <i>or</i>	
PY 391	Family Therapy	3

Electives

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					
EN 110	Freshman Composition*	3	PY 201	Communication Skills in Counseling	3
BL 105	Function of the Human Body	4	PY 259	Abnormal Psychology	3
HM 204	Introduction to Drug Abuse	3	HM 292	Alcohol Abuse Prevention and Treatment	3
PY 101	Introduction to Psychology	4	SO 242	Sociology of Sex	3
	Elective	<u>3</u>	SO 341	Addiction	<u>3</u>
		17			15
Second Year					
EN 210	Research Paper Process*	3	HM 250	Human Services Practicum	9
SD 101	Fundamentals of Speech	3	PY 291	Group Counseling	3
SO 225	Native Cultures of North America <i>or</i>		PY 391	Family Therapy	
SO 103	Cultural Diversity	3	SO 344	Social Welfare System	<u>3</u>
	Electives	<u>8</u>			15
		17			

**May be taken fall or spring semester*

Technical Accounting

See College of Engineering, Mathematics and Business, page 231.

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?

General Education Requirements

EC201	Prin. of Macroeconomics	3
	<i>or</i>	
EC202	Prin. of Microeconomics	
EN110	Freshman Composition	3
EN210	Research Paper Process	
	<i>or</i>	
EN215	Intro. to Literature & Research	3
MA092	Intermediate Algebra	
	<i>or</i>	
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
DP151	Computer Applications	3
FN245	Principles of Finance	
	<i>or</i>	
FN341	Managerial Finance	3-4

Sufficient elective credits must be completed so that at least 64 semester credits have been earned.

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. See page 232 regarding this program's accreditation.

Career Description:

Accounts Receivable/Payable Clerk — posts details of transactions; totals accounts and computes interest charge; monitors loans.

Payroll Clerk — distributes and collects timesheets; 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.

FALL		SPRING		
First Year				
AC132	Principles Accounting I	4	BA254 Business Law I	3
EN110	Freshman Composition	3	AC133 Principles of Accounting II	4
	Electives	3	SD101 Fund. of Speech Communication	3
MA111	College Algebra*	3	Elective	6
DP151	Computer Applications	3		16
		16		
Second Year				
AC232	Intermediate Accounting I	4	AC233 Intermediate Accounting II	4
AC332	Cost Accounting I	4	BA231 Business Communications	3
AC421	Federal Taxation Accounting I	3	EC201 Prin. of Macroeconomics	
EN210	Research Paper Process		<i>or</i>	
	<i>or</i>		EC202 Prin. of Microeconomics	3
EN215	Intro. to Literature & Research	3	General Education Elective	3
FN245	Principles of Finance	3	Electives	2
		17		15

*College Algebra recommended; intermediate algebra required; MA092 credit does not apply toward 64 credits for degree.

Telecommunications Engineering Technology

See College of Engineering, Mathematics and Business, page 231.

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.

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.

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.

Associate's Degree

65-Hour Program

Career Choices:

- Computer technician
- Electronics technician
- Telecommunications technician

Departmental Requirements

Engineering Technology

ET110	Applied Electricity & PLC	4
ET240	Communications I	4
EE125	Digital Fundamentals	4
ET125	Electrical Drafting	3
ET175	Applied Electronics	4
ET255	Computer Networks	4
ET245	Communications II	4
MT265	Quality Engineering	2
	or	
MA207	Principles of Statistical Methods	3
	Technical Electives	7

Mathematics and Science Courses

MA140	Algebra for Technologists	4
MA109	Trigonometry and Vectors	2
PH221	Elements of Physics I	4
MA143	Calculus for Engineering I	4

Support Courses

EN110	Freshman Composition	3
CS101	Intro. to Microcomputer Applications	3
EN205	Technical Report Writing	3
SD101	Fund. of Speech Communication	3
	Natural/Social Science Elective	3

FALL		SPRING			
First Year					
EN110	Freshman Composition	3	EN205	Technical Report Writing	3
ET110	Applied Electricity & PLC	4	EE125	Digital Fundamentals	4
MA140	Algebra for Technologists	4	ET125	Electrical Drafting	3
MA109	Trigonometry & Vectors	2	SD101	Fund. of Speech Communication	3
CS101	Intro. to Microcomputer Applications	3	ET175	Applied Electronics	4
		<u>16</u>			<u>17</u>
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
		<u>16</u>	MT265	Quality Engineering	2
			or		
			MA207	Prin. of Statistical Methods	3
					<u>16-17</u>

*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 Engineering, Mathematics and Business, page 231.

Certificate

Career Choices:

Data Entry Clerk

Word Processor

Receptionist

Secretary

Computer Applications Specialist

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.

Career Description:

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.

Certificates

FALL		SPRING		
EN110	Freshman Composition	3	SD101 Fundamentals of Speech	3
BA105	Business Mathematics	3	OA235 Automated Office Systems	3
OA111	Keyboarding/Document Formatting I	3	BA226 Records Management	3
DP225	Word Processing Techniques	2	OA112 Keyboard Skillbuilding	2
	Elective	3	OA113 Document Formatting II	3
		14	DP151 Spreadsheets	2
			DP151 Database	2
				<u>18</u>

Personal Computer Specialist

See College of Engineering, Mathematics and Business, page 231.

Certificate

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.

Career Description:

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.

Career Choices:

Computer Repair Technician

Network Technician

Applications Specialist

FALL			SPRING		
DP160	Personal Computers Work- station Operating Systems	3	DP163	Troubleshooting and Repair of Personal Computers	3
DP151	Spreadsheets	2	DP260	Personal Computers Network Operating Systems	3
DP151	Database	2	DP241	Desktop Publishing	3
QA119	Accounting Procedures	4	PY228	Organizational Behavior	3
EN110	Freshman Composition	3	DP263	Storage, Protection and Recovery of Personal Computer	3
QA111	Keyboarding/Document Formatting I				
	<i>or</i>	2-3			
DP225	Word Processing Techniques				15
		16-17			

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 each minor must be a C or better

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

Art

Total Credits Required: 20

Required Courses:

AT110	Fundamentals of Drawing and Composition	3
AT111	Painting Composition and Design	3
AT210	Drawing, Painting and Composition	3
AT211	Graphic Arts, Watercolor and Mixed Media	3
AT250	Art History & Appreciation I	4
AT251	Art History & Appreciation II	4

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
FR151	First Year French II	4
FR251	Second Year French I	4
FR252	Second Year French II	4
FR351	Advanced Conversation and Composition I	3
FR352	Advanced Conversation and Composition II	3
FR353	Business French I	3
FR354	Business French II	3

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
CH351	Introductory Biochemistry	4
or		
CH232	Instrumental Analysis	4

b)		
CH225	Organic Chemistry I	4
CH226	Organic Chemistry II	4
CH231	Quantitative Analysis	4
or		
CH351	Introductory Biochemistry	4

c)		
CH220	Survey of Organic Chemistry	4
CH351	Introductory Biochemistry	4
CH352	Biochemistry II	3
CH353	Introductory Toxicology	3

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:

CS121	Survey of Computer Science	3
CS201	Data Structures & Algorithms	3
CS205	Computer Organization and Architecture	3
CS312	File & Database Management	3

Plus three additional CS courses at the 300- or 400-level

This is an approved teaching minor.

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)

CJ101	Intro. to Criminal Justice	3
CJ130	Client Relations in Corrections	3
CJ140	Correctional Client Growth & Development	3
CJ243	Investigation	3
CJ250	Correctional Law	3
CJ330	Correctional Casework	3
CJ355	Juvenile Justice	3
CJ402	Criminal Justice Internship	3-9
CJ409	Procedural Criminal Law	3

Counseling

Total Credits Required: 21

Required Courses:

PY155	Lifespan Development	3
PY201	Communication Skills in Counseling	3
PY396	Tests and Measurements*	3
SO344	Social Welfare Systems	3
HM250	Human Services Practicum	3
BL105	Function of the Human Body**	4
PY259	Abnormal Psychology***	3
or		
SO338	Deviance***	3
PY291	Group Counseling	3
or		
PY391	Family Therapy	3
PY240	Behavioral Management	3
or		
PY385	Health Psychology	3

**Because of prerequisite to PY396, students must choose one of the following as part of coordinating minor or electives:*

PY210	Statistics	3
(already required by PY minors)		
SO302	Statistics for Social Science	3
MA207	Prin. of Statistical Methods	3

***May count toward general education.*

****May count toward SO/PY minor.*

Students seeking the B.S. in human services degree who select both this minor and the substance abuse minor will note that there is a great deal of overlap between the minors. Therefore, these students must select three courses (two at the 300-400 level) from the following list of courses:

HM480	Grantwriting	3
PY217	Social Psychology	3

PY228	Organizational Behavior	3
PY240	Behavior Management	3
PY259	Abnormal Psychology	3
PY311	Learning & Motivation	3
PY357	Personality Theory	3
PY383	Industrial Psychology	3
PY385	Health Psychology	3
PY457	Cognition	3
PY459	Physiological Psychology	3
SO214	Criminology	3
SO103	Cultural Diversity	3
SO242	Sociology of Sex	3
SO321	Sociology of Women	3
SO327	Sociology of Dying & Death	3
SO338	Deviance	3

Economics

Total Credits Required: 21

Required Courses:

EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
EC308	Intermediate Microeconomics	3
EC309	Intermediate Macroeconomics	3
EC	Electives	9

Economics-Finance

Total Credits Required: 28

Required Courses:

AC132	Principles of Accounting I	4
AC133	Principles of Accounting II	4
EC201	Prin. of Macroeconomics	3
EC202	Prin. of Microeconomics	3
FN341	Managerial Finance	4
EC or FN	Electives	10

Economics Teaching

Total Credits Required: 21

Required Courses:

EC201	Principles of Macroeconomics	3
ED202	Principles of Microeconomics	3
EC408	International Economics	3
FN242	Personal Finance	3

Electives from list below

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

Required Courses:

EN233	English Literature I	3
EN234	English Literature II	3

Fifteen (15) additional credits from the following courses:

EN220	Advanced Composition	3
EN221	Creative Writing	3
EN231	American Literature I	3
EN232	American Literature II	3
EN235	Survey of Native American Literature	3

EN320	Responding to Writing	3
EN321	Rhetoric and Composition Theory	3
EN322	Structure of the English Language	3
EN330	Development of the Novel in England & America I	3
EN331	Development of the Novel in England & America II	3
EN332	The Short Story	3
EN333	Studies in the Drama: The Genre and Theatre in Context	3
EN334	Approach to Poetry	3
EN335	Children's Literature	3
EN420	History of the English Language	3
EN421	History of Literary Criticism	3
EN430	Chaucer	3
EN431	Milton and the Metaphysical Poets	3
EN432	Shakespeare	3
EN433	Seminar in Major American & English Writers	3
EN450	Directed Individual Study	3
HU256	Introduction to Film: Images of Our Culture	3

English Teaching — Elementary

Total Credits Required: 21

EN231	American Literature I and	3
EN232	American Literature II or	3
EN233	English Literature I and	3
EN234	English Literature II	3
EN322	Structure of the English Language	3
EN335	Children's Literature	3
ED420	Emergent Literacy	6
	Any two EN classes beyond those which count for gen. ed. credit	6

English Teaching — Secondary

Total Credits Required: 21

Required Courses:

EN231	American Literature I and	3
EN232	American Literature II or	3
EN233	English Literature I and	3
EN234	English Literature II	3
EN322	Structure of the English Language	3
EN320	Responding to Writing	3
	<i>Select one class (3 credits)</i>	
EN220	Advanced Composition	3
EN221	Creative Writing	3
EN321	Rhetoric and Composition Theory	3
EN420	History of the English Language	3

Select two classes (6 credits)

EN330	Development of the Novel in England & America I	3
EN331	Development of the Novel in England & America II	3
EN332	The Short Story	3
EN333	Studies in the Drama: The Genre and Theatre in Context	3
EN334	Approach to Poetry	3

Environmental Science

Total Required Credits: 28

Required Courses:

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
NS103	Environmental Science	3
EV341	Environmental Chemistry I: Water and Water Pollution Control	4
BL337	General Ecology	3
ID300	The Human Environment	3

Additional courses to total 28 credit hours:

BL204	General Microbiology	4
BL230	Introduction to Soils	4
CH342	Environmental Chemistry II: Air and Solid Wastes	4
EV220	GPS/GIS Techniques	3
EV230	Introduction to Geographical Information Systems, GIS	3
EV285	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	4
TC101	Construction I	3
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 or	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	
BA231	Business Communication	3

Geography

Total Credits Required: 20

Geography (9-11 credits)

GGI06	Physical Geography: Landforms <i>or</i>	4
GE111	Physical Geology I	4
GGI08	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:

GGI06	Physical Geography: Landforms <i>or</i>	4
GE111	Physical Geology I	4
GGI08	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 Minor

Total Required Courses: 24

GE111	Physical Geology I	4
GE112	Physical Geology II	4
GE215	Historical Geology	4
GE216	Structural Geology and Geologic Graphics	4
GE221	Crystallography & Mineralogy	4
GE222	Mineralogy and Petrography	4

This minor may be used as a teaching minor.

Geology Earth Science

Total Credits Required: 20

Required Courses:

GE111	Physical Geology I	4
GE112	Physical Geology II	4

GE215	Historical Geology	4
GE351	Invertebrate Paleontology I	3
GG108	Physical Geography: Meteorology & Climatology	4
NS119	Descriptive Astronomy	3

This minor may be used as a 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 Teaching

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: 29

Required Courses:

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
CH104	Life Chemistry I	3
CH105	Life Chemistry II	4
GE111	Physical Geology I	4
GE114	Field Excursion	4
NS101	Conceptual Physics	3
NS119	Astronomy	3

Group Science — Secondary Teaching

This minor is limited to secondary education students completing an approved teacher education major in one of the four natural sciences: biology, chemistry, geology/earth science, or physics.

Total Credits Required: 33

Required Courses:

BL109	General Biology	4
BL110	General Zoology	2
BL111	General Botany	2
CH115	General Chemistry I	5
CH116	General Chemistry II	4
GE111	Physical Geology I	4
GE112	Physical Geology II	4
PH221	Elements of Physics I	4
PH222	Elements of Physics II	4

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	4
HS102	History of World Civilization II <i>and</i> History of World Civilization II <i>or</i>	4
HS131	United States History I <i>and</i>	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	3
	or	
PY383	Industrial Psychology	3

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	3
	or	
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.

Japanese Study

Students must complete the full-year program at the Japan Center for Michigan Universities. Enrollment in the program is based upon the requirement that the student be a full-time, tuition-paying student of LSSU. The center is located in Hikone, Japan, and it is their staff and resources that provide the courses for this minor. The minor consists of the following courses, totaling 24 semester hours: JS105-JS302. This sequence shall fulfill the one-year of foreign language required for a bachelor of arts degree. Students are strongly advised to take GG323.

Journalism

Total Credits Required: 21

Required Courses:

JR210	Writing for Mass Media	3
JR211	Print Newswriting	3
JR220	Photojournalism	3
DP241	Desktop Publishing	3
JR310	Editing and Production	3

Elective Courses (select two):

JR311	Supervising School Publications (required for certification)	3
JR411	Broadcast Editing & Production	3
JR413	Directed Individual Studies	3
JR410	Broadcast Newswriting	3
MK281	Marketing Principles & Strategy	3
MK387	Advertising Theory & Practice	3
PS325	Politics and Media	3
SD308	Communication Theory	3
SD320	Public Relations	4
DP345	Presentation Graphics	3

This minor may be used as a teaching minor.

Law Enforcement

Total Credits Required: 21

Required Courses:

CJ101	Intro. to Criminal Justice	3
CJ102	Police Process	3

Minimum of 15 hours from:

CJ202	Canadian Criminal Law	3
CJ206	Law Enforcement/Loss Control Internship	3
CJ243	Investigation	3
CJ313	Crisis Intervention of Deviant Behavior	3
CJ319	Substantive Criminal Law	3
CJ321	Ethical Issues in Public Safety	3
CJ406	Advanced Canadian Jurisprudence	3
CJ409	Procedural Criminal Law	3
CJ444	Criminalistics	4

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
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
LA305	Tribal Law and Government	3
LA320	Real Estate Law	3
LA321	Family Law	2
LA322	Probate Law and 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

Minimum of six hours from:

CJ202	Canadian Criminal Law	3
CJ319	Substantive Criminal Law	3
CJ406	Advanced Canadian Jurisprudence	3
CJ409	Procedural Criminal Law	3

Minimum of nine hours from:

MN365	Human Resource Management	3
CS101	Intro. to Microcomputer 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	3
MA144	Calculus for Engineering II or	8
M151	Calculus I and	
MA152	Calculus II	
MA207	Prin. of Statistical Methods or	3
MA308	Probability and Mathematical Statistics	4

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
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	3
MA308	Probability and Mathematical Statistics	4
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: 23

Required Courses:

DP160	Operating Systems	3
DP151	Spreadsheets or Data Base	2
DP241	Desktop Publishing	3
DP225	Word Processing Techniques	2
BA226	Records Management	3
OA235	Automated Office Systems	3
BA121	Introduction to Business	3
OA119	Accounting Procedures or	4
AC132	Principles of Accounting I	

Personal Computer Specialist

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/GS/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, 334, 340)	
International Relations (PS241, 411, 420)	
Political Philosophy (PS351, 352)	

Additional political science electives must be taken to reach 28 credits. A minimum of 12 credits must be at the 300/400 level. 4-7

Political Science Teaching

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
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
PS420	Politics of the World Economy	4

Electives to Total: 21

A minimum of nine credits must be at the 300/400 level.

Psychology

Total Credits Required: 22

Required Courses:

PY101	Introduction to Psychology	4
PY210	Statistics	3
PY212	Experimental Psychology	3
PY	Electives	6
PY	Elective at 300+ level	3
PY357	Personality Theory or	
PY396	Tests & Measurements or	3
PY457	Cognition or	
PY459	Physiological Psychology	

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):

SD320	Public Relations	4
SD210	Business and Professional Speaking or	3
SD211	Advanced Public Speaking	
SD302	Argumentation and Advocacy	3
SD308	Communication Theory	3

Elective Courses (8):

ID399	Internship in Public Relations	1-4
SD307	Classical/Contemporary Rhetoric or	3
EN321	Rhetoric and Composition Theory	
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
DP241	Desktop Publishing	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
<i>Departmental Electives (9):</i> <i>(six credits from 300- and 400-level classes)</i>		
HM480	Grantwriting	3
RA210	Lifeguarding	2
RA211	Water Safety and Lifeguard Instructor	2
RC212	Instructional Methods in Adapted Aquatics	2
RC220	Methods in Arts & Crafts	3
RC240	Foundation of Therapeutic Recreation	3
RC262	Outdoor Recreation	3
RC270	Sports Management	3
RC280	Readiness in Games, Activities and Sports	3
RC320	Dance & Rhythmic Activities for Recreation	3
RC342	Disabilities Seminar in Therapeutic Recreation	3
RC344	Recreational Pursuits and Disabling Conditions	3
RC346	Clinical Issues in Therapeutic Recreation	3
RC362	Land Management for Recreational Purposes	3
RC365	Expedition Management	3
RC370	Recreation for the Elderly	3
RC435	Problems & Issues in Therapeutic Recreation	3
RC496	Selected Research Topics	1

Recreation Studies Skill

Total Credits Required: 23-31

Required Courses:

RC101	Intro. to Recreation and Leisure Services	3
RC105	Program Development and Leadership in Recreation and Leisure Services	3
RC295	Practicum	2-4
RC370	Recreation for the Elderly	3

Cognate Requirements:

ES140	Health and Fitness	3
PY155	Lifespan Development	3
SO326	Sociology of Aging & Aged	3
HM250	Human Services Practicum	3-9

Sociology — General

Total Credits Required: 20

Required Courses:

SO101	Introduction to Sociology	3
SO238	Social Psychology	3

Additional sociology courses to total a minimum of 20 hours, among which at least six hours are 300- or 400-level courses. 14

Sociology Social Work

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.

Sociology Teaching

Total Credits Required: 21

Required Courses:

SO101	Introduction to Sociology	3
SO103	Cultural Diversity	3
SO102	Social Problems	3
SO238	Social Psychology	3

Choose one of the following:

SO325	Social Stratification	3
SO403	Development of Sociological Theory	3
SO302	Statistics for Social Science	4

Additional sociology electives to total 21 semester hours. At least nine credits must be at the 300/400 level.

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.*

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 with 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	
PY391	Family Therapy	3
BL105	Function of the Human Body**	4

PY259	Abnormal Psychology***	3
	or	
SO338	Deviance***	3

**Because of prerequisite to PY396, students must choose one of the following as part of coordinating minor or electives:*

PY210	Statistics	3
	(already required by PY minors)	
SO302	Statistics for Social Science	4
	(counts toward SO minors)	
MA207	Prin. of Statistical Methods	3

***May count toward general education.*

****May count toward SO/PY minor.*

Students must obtain a Michigan Apprentice Counseling Certificate by successfully completing the Michigan Office of Substance Abuse Counseling Examination before applying for a practicum.

Students seeking the B.S. in human services degree who select both this minor and the counseling minor will note that there is a great deal of overlap between the minors. Therefore, these students must select three courses (two at the 300-400 level) from the following list of courses.

HM480	Grantwriting	3
PY217	Social Psychology	3
PY228	Organizational Behavior	3
PY240	Behavior Management	3
PY259	Abnormal Psychology	3
PY311	Learning and Motivation	3
PY357	Personality Theory	3
PY383	Industrial Psychology	3
PY385	Health Psychology	3
PY457	Cognition	3
PY459	Physiological Psychology	3
SO214	Criminology	3
SO103	Cultural Diversity	3
SO242	Sociology of Sex	3
SO321	Sociology of Women	3
SO327	The Sociology of Dying and Death	3
SO338	Deviance	3

Teaching

Total Credits Required: 21

Required Courses:

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

**Subject to approval.*

Writing

Total Credits Required: 20

Required Courses:

EN220	Advanced Composition	3
EN221	Creative Writing	3
EN321	Rhetoric & Composition Theory	3
JR210	Writing for the Mass Media	3
JR211	Print Newswriting	3

Elective Courses:

JR413	Directed Individual Studies	2
JR310	Electronic Editing and Production	3
EN320	Responding to Writing	3
MK387	Advertising Theory and Practice	3



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*

History

Elementary and Secondary Teaching

Human Services

Individual Studies

Legal Assistant Studies

Political Science

Tracks in General, Pre-law, Public Administration

Psychology

Elementary and Secondary Teaching

Social Science

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**

Minors

Art

Business French

Child Development

Communications

Counseling

English Language and Literature

**English Language and Literature —
Teaching**

French Language and Literature

Geography

Geography — Teaching

Gerontology

History

History — Teaching

Human Services Administration

Humanities

Japanese Study

Journalism

Legal Assistant Studies

Native American Studies

Political Science

Political Science — Teaching

Psychology

Psychology — Teaching

Public Administration

Public Relations

Recreation Studies Skill

Sociology

Sociology — Teaching

Social Work

Spanish Literature and Culture

Speech and Drama

Substance Abuse Counseling

Teaching

Writing

College of Arts, Letters and Social Sciences

Faculty

Mr. James Blashill, Dean
Associate Professor

Professors

Dr. Richard Conboy
Dr. Richard Crandall
Dr. John Cullen
Dr. Terry Heyns
Mr. Richard Jennings
Dr. Gary Johnson
Dr. Leon Linderoth
Mr. James Madden
Mr. Robert Money
Mr. James Moody
Dr. Diana Pingatore
Dr. Susan Ratwik
Dr. Timothy Sawyer
Dr. Thomas Schirer
Mr. Gary Toffolo
Dr. John Wilkinson

Associate Professors

Dr. Carol Andary
Dr. Leslie Dobbertin
Dr. Polly Fields
Dr. Eric Gadzinski
Ms. Georgegeen Gaertner
Mr. Marcel Pichot
Mr. John Stevens
Mr. Robert Willey

Assistant Professors

Dr. George Denger
Dr. Gerald Dobbertin
Ms. Elizabeth Foley
Ms. Pamela Hayward
Dr. James Heasley
Dr. Virginia Hines
Mr. Philip Jones
Mr. James Kobolt
Mr. Roger Land
Ms. Cary Miller
Ms. Shirley Schoenemann
Mr. Ray Trouvé
Mr. Houston Tucker

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.

School of Criminal Justice, Fire Science and Education

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 Law Enforcement Officer Training Council (MLEOTC). 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).

Faculty

Chair

Dr. Paige Gordier,
Associate Professor

Professors

Dr. Terry Heyns
Mr. James Madden

Associate Professors

Ms. Shirley Schoenemann

Assistant Professors

Ms. Elizabeth Foley
Dr. Virginia Hines
Mr. Philip Jones
Mr. James Kobolt
Mr. Roger Land
Mr. Houston Tucker

Staff

Ms. Jackie Perron, Secretary,
Teacher Education

Ms. Catherine Plont,
Child Development Lab

Ms. Debra Smart,
Child Development Lab

Dr. Warren Starr,
Field Experience Director,
Teacher Education Program

Ms. Jeanne Thompson, Secretary,
Criminal Justice and Fire Science

School of Criminal Justice, Fire Science and Education

Criminal Justice/ Fire Science

Faculty

Chair

Dr. Paige Gordier
Associate Professor

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Mr. James Madden

Assistant Professors

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Mr. Philip Jones
Mr. James Kobolt
Mr. Roger Land
Mr. Houston Tucker

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 — MLEOTC-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.

School of Criminal Justice, Fire Science and Education

Michigan Law Enforcement Officers Training Council (MLEOTC) Certification:

Students enrolled in the emphasis in criminalistics, law enforcement or public safety in the criminal justice baccalaureate degree may be eligible for MLEOTC certification. Upon graduation and the completion of the mini-academy, these students may be eligible for employment with local law enforcement agencies in Michigan without further training.

MLEOTC Mini-Academy:

Students enrolled in the MLEOTC track will have to complete a seven-week mini-academy held after the end of the school year. Contained within the mini-academy are skill hours such as firearms, driving and defense tactics. Only students who are enrolled in the MLEOTC track at the beginning of their senior year will be eligible for enrollment in the mini-academy.

Michigan Corrections Officer Training Council Certification:

Students enrolled in the associate'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.

Criminal Justice/ Fire Science

Advisory Committee

Law Enforcement Members:

Scott Fitzgerald, Sault Ste. Marie
Russell Smith, Michigan State Police
Dan Frazier, Cheboygan
Ralph Boudreau,
Michigan State Police
Harris Miller, Sault Ste. Marie
Jeff Moran,
Chippewa County Sheriff
Michael Roy,
Alpena Community College
Patrick Wyman,
Mackinaw City Police Department
Ugo Capy, Sault College
Tim Matelski,
St. Ignace Police Department
Robert Davis, Sault Ste. Marie,
Ontario Police Department

Corrections Members:

Arthur Tessmer,
Kinross Correctional Facility
Wayne Fortin, John Ferroni,
Gary McLeod,
Sault Ste. Marie Probation/Parole

Federal Members:

Mel Hendrickson,
U.S. Customs Port Director
Robert McNamara, U.S. Border Patrol
Bruce Wagner, U.S. Immigration

Security/Fire Science Members:

Robin Robinson, Algoma Steel Corp.
Kenneth Eagle,
Sault Ste. Marie Fire Chief
Wayne Francisco, Atlanta, Michigan
Lynn McCoy, Sault, Ont. Fire Chief

School of Criminal Justice, Fire Science and Education

Education

Faculty

Dr. Warren Starr, Director
Teacher Education

Ms. Nina Klein, EUPISD•LSSU
Science and Math Center

Associate Professor

Ms. Shirley Schoenemann,
Child Development Lab

Assistant Professors

Dr. Virginia Hines

Ms. Claudia Stanko-Bedell

Requirements for Formal Application:

- Minimum of 2.5 GPA in major, minor and overall
- Sophomore standing or beyond before next fall term
- Successful completion of SD101 Speech; EN110 Freshman Composition; and EN215 Introduction to Literature and Research, or EN210 Research Paper Process, or their equivalent
- Enrollment in or successful completion of TE150 and TE250 with a grade of B- or better in each course
- Successful completion of LSSU writing, reading and mathematics proficiency
- Successful completion of Michigan Test for Teacher Certification Basic Skills Test

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 completing course work in these four areas. With each, teachers are certified to teach kindergarten through sixth 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 1: 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. PY265 Child and Adolescent Development (TE150 meets prerequisite)
4. Teacher education 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 Department of Teacher Education before the internship begins

Major: See requirements for teaching option major on the following pages:

- Biology, page 77
- English Language and Literature, page 107
- Geology, page 132
- History, page 138
- Mathematics, page 149
- Psychology, page 164
- Social Sciences, page 170
- Sociology, page 172

Option 2: A bachelor of arts or a bachelor of science degree in elementary education.

1. Two academic minors in different planned program areas:
 - a. language arts
 - b. mathematics
 - c. natural science
 - d. social studies
2. All courses in the two remaining areas of the planned program not related to the minors
3. PY265 Child and Adolescent Psychology (TE150 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 Department of Teacher Education before internship begins.

Minors: See requirements for each minor on the following pages:

- Communications, page 204
- Computer Science, page 204
- Economics, page 205

School of Criminal Justice, Fire Science and Education

Education

- English Language and Literature, page 205
- French, page 205
- Geography, page 206
- Geology, page 206
- Group Science, page 206
- History, page 206
- Journalism, page 207
- Mathematics, page 207
- Political Science, page 208
- Psychology, page 208
- Sociology, page 208

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

EN215 Intro. to Literature and Research 3

Literature Course:

EN231 American Literature I 3

EN232 American Literature II 3

EN233 English Literature I 3

EN234 English Literature II 3

NA235 Survey of Native Literature of North America 3

ED420 Emergent Literacy 3

or

EN320 Responding to Writing 3

EN335 Children's Literature 3

Mathematics

MA103 Number Systems & Problem Solving (MA092 is prerequisite) 4

MA104 Geometry & Measurement 4

MA111 College Algebra 3

and

a statistics course from BA, MA, PY or SO

or

MA110 Exploration in Mathematics 3

Natural Sciences

NS110 Chemistry in Society 4

GE114 Field Excursion in Earth Science 3

NS101 Conceptual Physics 3

BL109 General Biology 4

Social Science

HS101 History of World Civilization I 8

and

HS102 History of World Civilization II 8

or

HS131 United States History I 8

and

HS132 United States History II 8

GG201 World Regional Geography 4

PS110 Intro. to American Government and Politics 4

or

PS160 Intro. to Canadian Government and Politics 4

PY265 Child and Adolescent Development 3

Secondary Teaching:

Secondary teachers are certified to teach in their academic major and minor(s) in grades seven through 12. This program leads to a bachelor of arts or a bachelor of science degree in the student's major area.

Certification is available in the following teaching option areas. See requirements for each on the following pages:

- Biology, page 77
- English Language and Literature, page 107
- Geology, page 132
- History, page 138
- Mathematics, page 149
- Political Science, page 159
- Psychology, page 164
- Social Science, page 170
- Sociology, page 172

Students can also complete any of the following teaching option minors and be certified to teach in these areas. See requirements on the following pages:

- Biology, page 204
- Communications, page 204
- Computer Science, page 204
- Economics, page 205
- English, page 205
- French, page 205
- Geography, page 206
- Geology / Earth Sciences, page 206
- History, page 206
- Journalism, page 207
- Mathematics, page 207
- Political Science, page 208
- Psychology, page 208
- Sociology, page 209

Admission to LSSU Teacher Education Program

Admission to the program will be competitive and is based upon the following criteria:

- Passing score on Michigan Test for Teacher Certification — Basic Skills Test
- Completion of a two-page typed essay
- Completion of an extemporaneous essay
 - Faculty interview
- Amount of experience related to teaching and/or working with children

School of Criminal Justice, Fire Science and Education

Education

General Programs for Secondary Teachers:

- One academic major from the above list (see individual school requirements)
- one academic minor from above list (see individual school requirements)
- Teacher education professional component
- General education requirements not met through major and minor
- 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 Department of Education before the internship begins

Teacher Education Professional Component:

Students seeking elementary or secondary teacher certification are required to complete 21 credits of the teacher education professional component.

- *Prior to formal admission:*
TE150 Reflection on Learning (3)
TE250 Student Diversity and Schools (3)
- *After formal admission:*
TE301 Students and the Context of Learning (4)
TE401 Teaching of Subject Matter to Diverse Learners (5)
TE402 Crafting Teaching Practice (6)
- *Teaching Internship*
Following graduation, students complete a full-year intern teaching experience at an elementary or secondary school. The experience

is supported by the following required courses:

- *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:

Courses taught every year:

- EN215 Intro. to Literature and Research
- EN220 Advanced Composition
- EN231 American Literature I
- EN232 American Literature II
- EN233 English Literature I
- EN234 English Literature II
- EN235 Native American Literature
- EN236 Literature and Culture
- EN320 Responding to Writing
- EN335 Children's Literature

Courses taught odd/even years:

Fall – Odd (99, 01, 03)

- EN322 Structure of the English Language
- EN330 Development of the Novel in England and America I
- EN332 The Short Story

Fall – Even (98, 00, 02)

- EN331 Development of the Novel in England and America II
- EN421 History of Literary Criticism
- EN430 Chaucer

Spring – Odd (99, 01, 03)

- EN321 Rhetoric and Composition Theory
- EN334 Approach to Poetry
- EN431 Milton

Spring – Even (98, 00, 02)

- EN333 Studies in the Drama: the Genre and Theatre in Context
- EN420 History of the English Language
- EN432 Shakespeare

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.

The Forensics Team is active throughout the year.

Faculty

Chair

Ms. Georgegeen Gaertner,
Associate Professor

Professors

Mr. Richard Jennings
Dr. Leon Linderth
Dr. Diana Pingatore

Associate Professors

Dr. Polly Fields
Dr. Eric Gadzinski
Mr. John Stevens

Assistant Professors

Dr. George Denger
Ms. Pamela Hayward

Staff

Ms. Audrey Morley, Secretary

School of Humanities and History

Fine Arts Studies

Faculty

Chair

Dr. Daniel Dorrity, Professor

Professors

Dr. John Cullen

Mr. Robert Money

Mr. James Moody

Dr. Thomas Schirer

Mr. Gary Toffolo

Dr. John Wilkinson

Associate Professors

Dr. Marcel Pichot

Assistant Professors

Ms. Cary Miller

Staff

Ms. Audrey Morley, Secretary

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 Student Service Center 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.

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.

Course	LSSU	Sault College	Algoma
Advertising Art and Graphic Design Concentration			
Lettering	[FA100]	ADV100	AAGD1006
Graphic Design I	[AT104]	ADV104	AAGD1046
Graphic Design II	[FA113]	ADV113	AAGD1137
Typography	[AT230]	ADV230	AAGD2306
Introduction to Computer Graphics	[AT231]	ADV231	AAGD2316
Computer Graphics I	[AT235]	ADV235	AAGD2357
Computer Graphics II	[AT236]	ADV340	AAGD3405
Computer Graphics III	[AT237]	ADV346	AAGD3465

MUSIC CONCENTRATION

Required Courses

Introduction to Music I	MU120	MUSC1101
Introduction to Music II	MU121 or [FA102]	MUSC1102
History & Appreciation of Music	MU220 & MU221	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

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		MUSC3005
Music of the Romantic Period		MUSC3016
Music of the Twentieth Century		MUSC3017
Native Music		NAAC2026

Theory

Materials of Music I: Theory	[MU115]	MUSC1115
Materials of Music II: Theory		MUSC2115

Appreciation

Music Appreciation: Listening Fundamentals		MUSC1021
Music Appreciation: Cultural Survey		MUSC1022

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
Group II: Applied/Studio			
Applied Music Proficiency I	MU220		MUSC1401
Applied Music Proficiency II	[MU402], MU220		MUSC1402
Applied Music for Non-Concentration Students I	[FA120], MU220		MUSC1420
Applied Music for Non-Concentration Students II	MU220		MUSC2420
Applied Music for Non-Concentration Students III	MU220		MUSC3420
Class Piano	MU170 & MU171		MUSC1701
Class Guitar	MU180 & MU181		MUSC1801
Group III: Ensemble			
University Choir	MU140 & MU141		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		MUSC1621, 2621, 3621
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			NAAC2026
Arts & Culture I: Dgwaagi			NAAC2036
Arts and Culture II: Biboon			NAAC2046
Arts and Culture III: Minookmi/Niibin			NAAC2056
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			VISA2027

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
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			NAAC1006
The Art of Regalia Making			NAAC1016
Cradle Boards and Bandolier Bags			NAAC1026
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	EN333		ENGL3336
Modern & Contemporary Drama			ENGL3475
Shakespeare	EN432		ENGL4326
Contemporary Canadian Drama			ENGL4416
Medieval English Drama			ENGL4426
Le theatre classique			FREN3006
Le theatre francais moderne			FREN3326
Theater History I	SD251 & SD252		THEA2245
Canadian Theatre			THEA2357
Theories of Drama			THEA3346
Group II: Practical/Performance Theater			
Problems in Speech/Drama	SD161		THEA1616
Modern European Theater			THEA2015
Acting I			THEA2115
Theater Movement			THEA2137
Introduction to Stage Craft			THEA2167
Speech and Drama Production	SD309		THEA3096
Acting II			THEA3115
Basic Scenic Design			THEA3167
Directing in the Theater			THEA3187
Theater Practicum			THEA3417

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
Visual Arts Concentration			
Art History and Appreciation	AT250 & AT251	FA153 & 172	VISA1005
Drawing I	AT110	FA150	VISA1506
Design I	[FA151]	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	AT111		VISA1116
Drawing, Painting, and Composition	AT210		VISA2107
Graphic Arts, Watercolor, Mixed Media	AT211		VISA2126
Modern Art			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	VISA2716
Drawing II		FA170	VISA2706
Drawing III		FA251	VISA3516
Drawing IV		FA271	VISA3716
Painting I		FA155	VISA2556
Painting II	[FA174]	FA174	VISA2746
Painting III		FA253	VISA3536
Photography I		PHO100	VISA2006
Photography II		PHO110	VISA2106
Photography III		PHO200	VISA3006
Pottery I	[FA157]	FA157	VISA2576
Pottery II		FA176	VISA2766
Psychology of Art I		FA159	VISA2596
Psychology of Art II		FA178	VISA2786
Art History III		ART259	
Art History IV		ART270	
Fabric Surface Design I		FA154	
Fabric Surface Design II		FA173	
Fabric Surface Design III		FA252	
Printmaking I		FA158	
Printmaking II		FA177	

School of Humanities and History

Fine Arts Studies

Course	LSSU	Sault College	Algoma
Writing Concentration			
<i>Select six credits from the following three courses*.</i>			
British Literature from Chaucer to 20th Century	EN233 & EN234		ENGL1005
Introduction to Canadian Literature			ENGL1205
Introduction to Writing & English Studies			ENGL1705
<i>*or equivalent introductory literature course</i>			
<i>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.</i>			
Approved Writing Courses			
Group I: Practical Writing & Production Courses			
Advanced Composition	EN220		ENGL2206
Practical Criticism			ENGL2306
Stylistics			ENGL2902
Basic Technical Report Writing	EN205	ENG210, 300	WRIT2056
Writing for the Mass Media	JR210		WRIT2107
Print Newswriting	JR211		WRIT2117
Desktop Publishing	DP241		WRIT2416
Reading and Writing for the Out-of-Doors		ENG305	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
Creative Writing	EN221		ENGL3516
Studies in Creative Writing			ENGL3517
The Writer's Voice I			ENGL3806
The Writer's Voice II			ENGL3807
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 Studies

Faculty

Program Coordinator
Carol S. Andary,
Associate Professor

Professor
Dr. Madan Saluja,
Business Law Professor

Adjunct Faculty
Anthony E. Andary
Wm. Dyke Justin
Susan Marshall
James W. Perry
Donald G. Sare
Patrick M. Shannon

Staff
Sheri Davie, Secretary

Legal Assistant (Paralegal) Profession:

The legal assistant profession is one of the occupations projected to grow the fastest through the year 2005 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.

School of Social Sciences

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
- 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 commu-

nity 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) is 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, Michigan Indian Judicial Association, etc.)

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 Joanna Neale,
Cheboygan County
Probate Court
Honorable Michael MacDonald,
Chippewa County District Court
Michael Mulder, President,
First of America-Sault Branch
Thomas Evashevski,
St. Ignace Attorney
John D. Peacock, Sault Attorney
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 Rose, Alumni
and Sault Area Legal Assistant
President, Student/Alumni
Legal Assistant Association
Carol S. Andary, Attorney and
Program Coordinator

School of Social Sciences

Political Science

Faculty

Professors

Dr. Richard Conboy

Dr. Gary Johnson

Associate Professor

Ms. Carol Andary

Assistant Professor

Dr. James Heasley

Staff

Ms. Judy Bawks, Secretary

Ms. Sheri Davie, 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.

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 three tracks or concentrations: *general political science*, *pre-law*, and *public administration*. 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 community 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.

School of Social Sciences

Psychology

Psychology is the systematic study of methods to understand, predict and influence human behavior and mental processes. The major provides students with exposure to the areas that define contemporary scientific psychology. The psychology major helps a student develop analytical thinking and communication skills which are applicable to a variety of careers. Many psychology majors pursue graduate degrees. Psychology electives enable students to construct a program of study consistent with their professional goals. The bachelor of science and bachelor of arts degrees differ only in the nature of the cognate courses that are selected. The bachelor of science degree requires science courses and the bachelor of arts degree requires foreign language courses.

Faculty

Professors

Dr. Susan Ratwik
Dr. Timothy Sawyer

Assistant Professor
Mr. Raymond Trouvé

School of Social Sciences

Sociology

Faculty

Chair

Dr. Leslie Ann Dobbertin,
Associate Professor

Professor

Dr. Richard Crandall

Assistant Professor

Dr. Gerald F. Dobbertin

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.

College of Engineering, Mathematics and Business

Bachelor's Degrees

Accounting

*Tracks in Public Accounting, Industrial/
Managerial, Data Processing and Accounting,
150-hour Program*

Business Administration

Specialties in Management and Marketing

Computer and Mathematical Sciences

Computer Engineering

Computer Science

Electrical Engineering

*Digital Systems
Electrical-Mechanical
Robotics and Automation*

Engineering Management

Environmental Engineering Technology

Finance and Economics

Individualized Studies

Manufacturing Engineering Technology

*General Option
Robotics and Automation Option*

Mathematics

*Pure Mathematics
Actuarial and Business Applications
Elementary Teaching Option
Secondary Teaching Option*

Mechanical Engineering

*Mechanical Design Engineering
Robotics and Automation*

Associate's Degrees

Business Administration

Computer Science

General Engineering

General Engineering Technology

Internet/Network Specialist

Liberal Arts

Manufacturing Engineering Technology

Office Administration

Personal Computer Specialist

Technical Accounting

Telecommunications Engineering Technology

Associate of Applied Science

Construction Technology

Machine Tool Technology

Certificates

Information Processing

Personal Computer Specialist

Minors

Accounting-Finance

Computer Science

Computer Science Teaching Option

Economics

Economics-Finance

Economics Teaching

General Business

Health Care Administration

Human Resource Management

Marketing

Mathematics

Mathematics Elementary Teaching

Mathematics Secondary Teaching

Office Administration

Personal Computer Specialist

School of Business and Economics

Faculty

Chair

Mr. Daniel Mugavero,
Associate Professor
Email: dmugavero@lakers.lssu.edu

Professors

Dr. John Erkkila
Email: jerkkila@lakers.lssu.edu
Dr. Bruce T. Harger
Email: bharger@lakers.lssu.edu

Dr. Ann Marinoni
Dr. Madan Saluja

Associate Professors

Mr. Robert Gaertner
Mr. Jack Hudson
Dr. Jean Lundin
Mr. Charles Meiser
Dr. Lynn Ryckman
Email: lryckman@lakers.lssu.edu
Mr. K. James Sherman

Assistant Professors

Mr. Robert Marsh
Email: rmarsh@lakers.lssu.edu
Dr. Annette Ryckman
Ms. Linda Schmitgal
Email: lschmitgal@lakers.lssu.edu
Mr. Scott Suneson

Instructors

Ms. Donna Payment

Mission Statement:

The faculty of the School 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.

Accreditation:

Lake Superior State University, through its College of Engineering, Mathematics and Business has the following degree programs accredited by the International Assembly for Collegiate Business Education:

- bachelor of science degree in accounting, business administration, and finance and economics
- master of business administration degree
- associate degrees in business administration, office administration, personal computer specialist and technical accounting.

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.

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 mission 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 learning environment, including faculty, staff, and administration, is 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:

Provide a high quality undergraduate education which fosters lifelong learning that is current and fits projected careers of graduates as they enter business, industry or graduate school.

Goal B:

Provide an environment which utilizes faculty, staff, and administration in a way that is responsive to the needs of our students and society.

Goal C:

Provide appropriate opportunities for students of diverse backgrounds to enhance their personal and professional growth.

Goal D:

Provide programs which focus on the fundamental technical and nontechnical principles and emphasize applications of these principles for business and industrial careers.

Goal E:

Provide programs that are recognized as high quality through periodic external reviews

Goal F:

Provide a superior faculty and staff, state-of-the-art facilities, equipment, and other resources to fulfill and enhance the School's viability, productivity and effectiveness.

Faculty

Mr. Ray Adams, Dean

Mr. Lawrence Bolio,
Associate Professor

Mr. James Devaprasad,
Associate Professor

Mr. Paul Duesing,
Associate Professor

Mr. Steven Gerrish,
Assistant Professor

Dr. R. C. Krishna,
Assistant Professor

Mr. John Madl,
Associate Professor

Mr. David McDonald,
Professor

Mr. Alan Niemi,
Assistant Professor

Dr. Kishan Padakannaya,
Assistant Professor

Dr. Kevin Schmaltz,
Assistant Professor

Mr. Keith Schwiderson,
Assistant Professor

Mr. Morrie Walworth,
Assistant Professor

Mr. Charles Weber,
Associate Professor

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.
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Engineering Technology Industrial Advisory Board

Members: Charles Snyder, Chair of Advisory Board, Delco Electronics Corporation; Frederick J. Berg, Secretary of Advisory Board, General Motors Corporation; David Allison, Dura Automotive Systems, Inc.; Bob Breclaw, Mead Paper Company; Robert Byrum, Sensor Manufacturing; Thomas Chrapkiewicz, Philips Semiconductors; Michael G. Eckert, Fanuc Robotics; Joseph M. Giachino, Ford Motor Company; Dan Goodrich, ITT Automotive; Gerry Grosskopf, Industrial Magnetics; Robert Guysky, Chrysler Corporation; Dan Hochgreve, Lake Erie MEP; Harland Hyatt, Delco Corporation; William Kilponen, Kilponen & Associates; Ralph Larsen, Michigan Scientific Corporation; James Lewis, General Dynamics; Charles Litzner, Edison Sault Electric Company; Ernest Maas, Edison Sault Electric Company; Chris Maguire, Delphi Energy & Engine Management Systems; Jeff Menosky, Michigan Scientific Corporation; Michael E. Rasmussen, Delphi-E; Russell Richmond, Delphi-E; Ralph S. Shoberg, R.S. Technologies; Meri Skiera, Maxxon Corporation; Gerald F. Stibitz, P.E., Morrison Knudsen Corporation; Brian Theriault, Mercury Exploration; John Truckey, Dura Automotive Systems, Inc.; Lynnette Utecht, Autoliv North America; Gary Walker, Tenneco Automotive; Matt Witte, Ph.D., Chrysler Corporation; Jim Ziehl, Chrysler Corporation.

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 multidisciplinary teams of students working on large-scale industrial projects which could be product or process design and build, or product or process research. Students are required to develop and manage a budget, establish methods of purchasing items and communicate regularly with an industrial project 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.

Related Professional Opportunities

Faculty/Student Applied Research

The Autonomous Systems Laboratory (ASL)

The Autonomous Systems Laboratory serves as a research center as well as an undergraduate laboratory for courses such as Dynamics, Automatic Control and Sensor Technology. The focus of the laboratory is research in robotics, controls and intelligent sensors, as well as the integration of modern technology in the undergraduate curriculum. Student participation in the applied research projects of the ASL is encouraged.

Admission Requirements

Freshman — Please refer to the section on Admissions for further details. The school does not have additional entrance requirements.

Transfer Students — Articulation agreements exist with many other institutions. An evaluation of all previous course work will be made upon acceptance to the University. After evaluation of course work, an individualized plan of study will be developed by the department chair or faculty advisor. Please refer to the section on Admissions for further details.

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 Electronic Engineers (IEEE)

Society of Automotive Engineers (SAE)

Society of Manufacturing Engineers (SME)

Society of Women Engineers (SWE)

Tau Alpha Pi Honor Society

School of Engineering and Technology

Computer Engineering

Department of Electrical & Computer Engineering

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Computer engineering and other computer-related fields comprise some of the fastest-growing job markets today. Excellent job opportunities are forecast well into the next century. 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 theoretical 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.

School of Engineering and Technology

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 Systems 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 interlace professional activities with their engineering studies.

Electrical Engineering

Department of Electrical & Computer Engineering

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School of Engineering and Technology

Engineering Management

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.

Environmental Engineering Technology

The environmental engineering technology degree is a broad-based program designed to build strong foundations in environmental science, chemistry, engineering and engineering technology. The program will prepare the engineering technologist to manage environmental problems in air, water and solid waste pollution. You will be able to assist engineers in designing products or processes that generate less waste and pollutants; plan and conduct studies to measure the chemical makeup and concentration of pollutants and map out a strategy for reducing them; assist compa-

nies with the growing maze of federal and state laws; and assist with municipal or industrial waste management.

In addition to the engineering technology components, both mechanical and electrical, you will complete a strong science curriculum. By combining lecture classes and laboratory instruction, you will gain an understanding of technical topics. There is a special emphasis on developing written and oral communication, teamwork and problem-solving skills.

Department of General Engineering/Engineering Technology

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School of Engineering and Technology

This curriculum is for students who plan to transfer to engineering programs at other universities after two years at Lake Superior State University. Students who have not decided on an engineering major should also enroll in this program.

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

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School of Engineering and Technology

Manufacturing Engineering Technology

Department of Manufacturing Engineering Technology

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David McDonald

Associate Professors

Larry Bolio
Paul Duesing
John Madl

Assistant Professor

R. C. Krisha
Keith Schwiderson

Lab Engineers

Jon Coullard, Mechanical
Jeff King, Electrical/Computer

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 15 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 of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 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 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 two options: Design or Robotics and Automation. 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. Both 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 both options is designed to provide you with a solid foundation in the fundamen-

tals 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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School of Engineering and Technology

Telecommunications Engineering Technology Associate's Degree

Department of General Engineering/Engineering Technology

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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

The School of Mathematics and Computer Science has two primary objectives: (1) provide valuable service courses to all University majors in mathematics and computer science, and (2) offer exciting and challenging degree programs at the bachelor's and associate's level, as well as offer minors in both mathematics and computer science.

Computer Science

In recent years, a quiet revolution has taken place. The computer has moved out of the back room of large corporations and research institutions into the front offices and living rooms of modern society. Computer scientists work at the leading edge of this revolution, developing software systems that allow us to utilize the electronic hardware the engineers have built. The work is challenging, and often frustrating, but is ultimately very rewarding.

The department offers a bachelor of science in computer and mathematical sciences that combines a study of digital computing with the study of mathematical concepts. The resulting program provides you with considerable versatility and potential for future endeavors in which practical quantitative skills are important. The *systems emphasis* offers applied mathematics and business courses to complement the solid computer science core. The *quantitative emphasis* provides a strong mathematics background that is necessary for graduate school, as well as many numerically intensive computer occupations.

For those interested in two years of preparation and then entry to the work force, the associate's degree in computer science is an option. A minor in computer science is available to provide excellent

support and value to most majors offered at the University. A separate computer science teaching minor is also available for students pursuing teacher education.

Mathematics

A most productive tool: Mathematics is the foundation of the sciences and the technology largely responsible for our present standard of living. Mathematics is one of the most productive tools yet discovered for unraveling the mysteries of our universe. In some instances, it is the only language in which some ideas can be expressed. Courses offered in this discipline provide the foundation for future work in mathematics. Our teaching objectives are twofold: to give you an understanding of mathematics, and to impart an understanding of the many ways in which this tool may be used.

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 gives you a unique combination of a strong mathematical background along with the economics and finance coursework to complement it. Students graduating with this option can find career opportunities as actuaries, operations researchers, financial planners and statisticians.

Faculty

Chair

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Associate Professor

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Mr. Thomas Mickewich
Dr. Gary Thesing
Mr. Paul Wilson

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Dr. Anthony Fabbri
Dr. Mieczyslaw Gutowski

Assistant Professors

Ms. Sherilyn Duesing
Ms. Janina Gutowska
Ms. Kristine Montis
Mr. Randall Suggitt
Mr. Mark Tewilliger

School of Mathematics and Computer Science

School Offerings

B.S., Computer and Mathematical Sciences—Quantitative Emphasis

B.S., Computer and Mathematical Sciences—Systems Emphasis

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

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

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.
- The bachelor's degrees in computer and mathematical sciences include both a sophomore and senior project. 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 degree in computer science includes 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 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.

College of Natural and Health Sciences

Bachelor's Degrees

Biology

Biology

Concentrations in Botany, Ecology, Elementary Teaching, General Biology, Pre-professional, Secondary Teaching, Zoology

Clinical Laboratory Science

Environmental Chemistry

Secondary Teaching

Environmental Science

*Secondary Teaching
Dual Major with Environmental Geology*

Exercise Science

Concentration in Athletic Training

Fisheries and Wildlife Management

Concentrations in Fisheries Management, Wildlife Management

Geology

*Environmental Geology
Elementary Teaching
Secondary Teaching
Dual Major with Environmental Science*

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

Minors

Biology

Chemistry

Environmental Science

Geology

Geology Earth Science Teaching

Group Science — Secondary Teaching (all subjects)

Group Science — Elementary Teaching (all subjects)

Health Care Administration

Recreation Studies

College of Natural and Health Sciences

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Dr. Barbara Evans
Dr. Steven Furr
Dr. Randall Lee Gardiner
Ms. Alice Halsey
Dr. Paul Kelso
Dr. Dennis Merkel
Dr. David Myton
Dr. John Roese
Ms. MaryAnne Shannon
Dr. Deborah Stai

Assistant Professors

Ms. Donna Anleitner
Dr. Richard Back
Ms. Margaret Hanson
Mr. Ron Hutchins
Ms. Lynn Kabke
Dr. Nancy Speer Kirkpatrick
Ms. Vicki MacLeod
Ms. Debra McPherson
Mr. Joseph Susi II
Dr. Trent Sutton
Ms. Edith West
Dr. Stanley Wu (Visiting)
Mr. Stephen Yanni
Dr. Gregory Zimmerman

Instructors

Mr. Brian King
Mr. Christopher Kirk

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.

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.

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School of Natural Sciences

Biology

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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 geometry 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 Program

This program is a research sequence open to science majors with a minimum overall GPA of 3.5 through the first semester of the junior year. Majors electing this sequence will select an instructor as their supervisor. An undergraduate research project will be outlined in consultation with the supervising instructor and submitted to the department for approval. The outline must be approved before the first semester of the senior year. At the end of the seventh week of the spring semester during the senior year, 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 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 coursework 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 provide a solid foundation for their classroom teaching experience, and increases your 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 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.

Faculty

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Dr. Charles Jones
Dr. John Lehman

Assistant Professor

Dr. Stanley Wu (Visiting)

School of Natural Sciences

Geology and Physics

Faculty

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Professors

Dr. C. Randall Mullin
Dr. Richard Zabelka

Associate Professor

Dr. Paul Kelso

Instructor

Mr. Brian King

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 provide advantages to study at Lake Superior State. 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 admissions requirements. Recommended high school subjects include three years of English, two years of algebra, geometry, chemistry and physics. One semester of trigonometry is highly recommended.

School of Nursing and Health Sciences

Professional Staff

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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.

Faculty

Professor
Dr. Sally Childs

Associate Professors
Ms. Carol Campagna
Dr. Randall Lee Gardiner
Ms. Alice Halsey
Ms. Mary Anne Shannon

Assistant Professors
Ms. Donna Anleitner
Ms. Margaret Hanson
Mr. Ron Hutchins
Ms. Lynn Kabke
Ms. Vicki MacLeod
Ms. Debra McPherson
Mr. Joseph Susi II
Mr. Stephen Gianni

Instructor
Mr. Christopher Kirk

School of Nursing and Health Sciences

Nursing

Faculty

Interim Associate Dean
Dr. Mae Markstrom
Professor

Associate Professors
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Alice I. Halsey
MaryAnne Shannon

Assistant Professors
Donna M. Anleitner
Margaret R. Hanson
Ron Hutchins
Lynn Kabke
Vicki MacLeod
Edith West

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.

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 you 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 127 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, applications 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.

Entrance Requirements to Nursing:

Many changes are occurring in health care and other professions. New skills and knowledge are needed for the nursing graduate to provide quality nursing care. Some of the major changes and how they influence the role of the nurse are shown in the chart below.

In response to these changes, faculty in the Department of Nursing have been carefully reviewing the current nursing curriculum. Currently, students are spending almost half of one semester learning basic nursing skills such as bed-making, transferring patients from bed to chair, and giving complete bed baths.

Given the limited number of hours available for nursing students to obtain the essential knowledge and skills needed for their success upon graduation, the LSSU nursing faculty strongly believe that the basic skills (those previously listed and others) would best be obtained by the student prior to admission to the nursing program. Requiring competence in basic skills prior to admission would "free-up" valuable classroom and clinical time to devote to the knowledge and skills essential for the nurse in the 21st century.

Nursing, B.S. Four-Year Program Pre-Licensure Track

Change	Knowledge Needed by Nurses	Goal
There are more unlicensed assistive workers in health care.	Supervisor and management skills.	To assure good-quality health care is provided.
Integrated health care systems are being formed where information is linked between multiple sites.	Business knowledge and skills, teamwork and information technology (computers).	To deliver high quality, coordinated, cost-effective care.
Managed care is becoming the preferred way to deliver health care.	Statistical and comprehensive clinical practice.	To monitor and manage health care according to standards.
There is a move to a community-based health care system.	Community systems and resources.	To assess and plan for health of communities.

School of Nursing and Health Sciences

Nursing, B.S. Four-Year Program Pre-Licensure Track

□ Certified nursing assistant courses include these basic skills and others. If nursing students are prepared at the level of a certified nursing assistant (CENA) prior to admission to the nursing program, there will be advantages to the student in a number of ways.

1. On admission to the nursing program, you will be prepared to take on educational subjects, issues and experiences that will best prepare you for professional nursing roles.
2. Being certified as a nursing assistant will provide you with actual experience in a patient-care setting. This will help you to have a more realistic perception of patient care, and will also help to decrease the anxiety level if you have never had actual "hands-on" patient care experiences.
3. From a purely economic standpoint, certification as a nursing assistant will provide you with employment opportunities at higher pay scales during the school year and summer breaks.

Based on the nursing faculty's examination and discussion of issues related to changes in the nursing profession and their impact on nursing education, the following requirements for admission to the nursing program have been established.

Updated Entrance Requirements:

1. Students officially admitted to the nursing program at the sophomore level for fall 1998 and 1999 will be required to possess basic nursing skills (listed below) before enrolling in NU213 - Fundamentals of Nursing in spring 1999 and 2000, respectively:

- a. Bed making (occupied and unoccupied).
- b. Patient transfers - ambulation and positioning (bed to wheelchair / bedside chair to bed, bed to stretcher, stretcher to bed).
- c. Complete bed bath including total hygiene.
- d. Body mechanics and patient safety.

These skills may be acquired in a variety of ways. The faculty of the Department of Nursing do not require any one method, but offer the following suggestions for learning these skills:

- Certified nursing assistant course (current or proof of prior certification)
- Nursing assistant, health occupations course in high school, or personal care worker course.
- Self-paced learning modules.
- One-to-one tutoring with a nurse or experienced Certified Evaluator Nursing Assistant (CENA) willing to teach the skills.
- A local nursing home (Tendercare) may be willing to provide a three-day educational session to learn these skills in exchange for 25 hours of volunteer work with the activities department.

If other than a CENA course is presented to verify knowledge, you will be expected to demonstrate the skills in the nursing clinical laboratory. The evaluator will use a "skills checkoff" of the expected standard to evaluate competency. Competencies are available in any fundamentals of nursing textbook or nursing assistant textbook.

School of Nursing and Health Sciences

Nursing, B.S. Four-Year Program Pre-Licensure Track

2. Students officially admitted to the nursing program at the sophomore level in the fall of 2000 will be required to have completed a CENA (Certified Evaluator Nursing Assistant) course or equivalent as determined by the Department of Nursing.

You will also need 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 two groups:

1. Nursing support courses (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).

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 in which you receive a grade of C or better are transferable. Credits for baccalaureate

nursing courses and pharmacology are transferable for five years.

Time requirements for program completion is four academic years; however, completion may require more than four years for students who do not meet all entrance requirements.

Progression and readmission policies are detailed in the Nursing Student Handbook.

You 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 chairperson 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

Nursing, B.S. Completion Program for RN Students Post-Licensure Track

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, 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, computer literacy and mathematics competency are 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 in which you received a grade of C or better may be transferred. A maximum of 32 semester hours credit in basic nursing courses may be transferred.

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.

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 installation, 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.

Athletic Training — The athletic training concentration prepares you for a career in athletic training and to sit for the National Athletic Trainer's Association (NATA) Board of Certification Exam. To become a NATA Certified Trainer (ATC), you must fulfill specific academic and clinical placement requirements.

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.

Recreation Studies and Exercise Science

Faculty

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Course Descriptions

Abbreviations	HU	Humanities
AC Accounting	ID	Interdisciplinary
AT Art	JS	Japanese Studies
BL Biology	JR	Journalism
BA Business	LA	Legal Assistant Studies
CH Chemistry	MN	Management
CS Computer Science	MT	Manufacturing Engineering Technology
TC Construction Technology	MK	Marketing
CJ Criminal Justice	MB	Master Business Administration
CF Criminal Justice/Fire Science	MA	Mathematics
DP Data Processing	ME	Mechanical Engineering
EC Economics	MU	Music
ED Education	NA	Native American Studies
EE Electrical Engineering	NS	Natural Science
ET Electrical Engineering Technology and Telecommunications Engineering Technology	NU	Nursing
EM Engineering Mechanics	OA	Office Administration
EN English	PL	Philosophy
EV Environmental Science	PH	Physics
ES Exercise Science	PS	Political Science
FN Finance	PY	Psychology
FS Fire Science	RC	Recreation
FR French	RA	Recreational Activities
EG General Engineering	RS	Robotics and Control Systems
GG Geography	SW	Social Work
GE Geology	SO	Sociology
GN German	SP	Spanish
HE Health Sciences	SD	Speech
HS History	SA	Student Services
HP Honors Program	TE	Teacher Education
HM Human Services	UN	University Seminar

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 (4,0) 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 DP151 (spreadsheet course).

AC334 Accounting Information Systems (3,0) 3

Elements that constitute an accounting system and theories upon which a system should be designed. Emphasis upon computerized accounting systems with extensive use of computers. Prerequisites: AC233, AC332 and introductory data processing course.

AC335 Accounting Systems Theory (1,0) 1

This course is designed to provide the student with the theory of accounting information systems. Together with computerized accounting applications, this course will substitute for AC334, accounting information systems. This course is designed for use only at the Regional Centers, where AC334 may not be offered. 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 and Composition (3,0) 3

This course will acquaint the student with the various drawing media, such as pencil, charcoal, ink, wash and the use of various papers; studio problems in still life, object drawing, landscape, texture, and drawing from imagination and memory. Introduction to limited palette oil painting with emphasis on techniques of brush handling and concepts of visual organization language. Outside sketching required. Organic form, perspective, proportion, line, shape and tone are studied.

AT111 Painting Composition and Design (3,0) 3

Projects in various media, primarily oil, acrylic paints and water color. Emphasis on individual development and expression. Outside sketching required. Specific pictorial problems, advanced paint handling and brush techniques will be studied. Understanding of structural, value and color principles by which great paintings are organized will be studied. Prerequisite: AT110.

AT210 Drawing, Painting and Composition (3,0) 3

Advanced concepts of color and design elements basic to drawing and painting. The study of painting employing figure, still life, and nature as source material. Emphasis on visual perception and the study of the formal elements of painting. Prerequisite: AT111.

AT211 Graphic Arts, Watercolor and Mixed Media (3,0) 3

Painting from figure, memory, portrait, and landscape stressing personal expression. Concentration on individual projects involving significant forms and symbols. Emphasis on advanced color and composition problems through study of spatial structure and color and order relative to pictorial meaning. Prerequisite: AT210.

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.

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: SA091 or equivalent/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: MA086, EN091, SA091 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. Prerequisite: High school chemistry and SA091 or equivalent/satisfactory score on ACT or Placement Exam.

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.

BL130 Introduction to Remote Sensing
(2,3) 3

Students will develop practical skills in measuring scale, distance, direction and area on remotely sensed imagery such as aerial photographs. Exercises in interpretation of black and white, color, and color infrared imagery will be covered in the laboratories. Basic map and compass techniques will be used to complement measurements and interpretations. One all-day field trip is required. Prerequisite: MA086 and SA091 or equivalent/satisfactory scores on ACT or Placement Exam.

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: SA091 or equivalent/satisfactory score on ACT or Placement Exam.

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
(2,3) 3

A survey course covering the natural history and identification of vertebrates of North America, with an emphasis on important vertebrate taxa. The laboratory will focus on common management techniques and identification of key species found within the Great Lakes region. Prerequisite: BL140

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**(3,0) 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. Prerequisite: MA207.

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: BL130 or EV220.

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 school 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.

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 CH226.

BL320 Cell Biology**(3,3) 4**

Cellular structure and function with emphasis on organelle ultrastructure, molecular organization of the cell, cell membranes and permeability, the cytoskeleton and cellular interactions. Prerequisites: BL109, CH220, CH226, and junior standing.

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.

BL395 Junior Seminar**(0,2) 1**

A course designed to prepare students to conduct and present scientific research. Topics covered include literature searches, scientific writing and oral presentation of scientific data. Students will be expected to listen to presentations of peers enrolled in BL499 and to develop a topic for their senior thesis. Prerequisite: MA207.

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.

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.

BL440 Stream and Wetland Ecology
(2,3) 3

An interdisciplinary and comparative approach to characterizing stream and wetland ecosystems. Topics to be covered: landscape and hydrology, physical variables, fauna and flora, nutrient dynamics and trophic interactions. Also considered are human modifications of these environments, imperilment of biota, mitigation and recovery. Prerequisites: BL130 or EV220, BL337 and BL345.

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.

BL499 Senior Thesis
(1,3) 2

Required of seniors majoring in biology. Each student will present a seminar detailing their individual research project. A written paper and poster presentation are also required. Students must attend the presentations of all others enrolled in this course. Prerequisite: BL395.

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. (Formerly HT121).

BA211 Business Statistics**(3,0) 3**

An introduction to business statistics. Topics include collection and presentation of data, measures of central tendency, variation and skewness, probability, probability distributions, Bayes's Theorem, sampling, sampling distributions, estimation, hypothesis testing, simple linear regression and correlation. Prerequisite: MA111.

BA226 Records Management**(3,0) 3**

Study and application of records control, forms design, filing systems (manual and electronic), microforms, and the records cycle. A computer simulation is completed utilizing a program to print, sort, and select records as reports or labels.

BA231 Business Communications**(3,0) 3**

Business and management communications problems. Direct, indirect, and persuasive letters; memos, short reports and directives. Some assignments must be typed. Extensive writing practice. Prerequisite: Satisfactory completion of LSSU's English competency examination.

BA254 Business Law I**(3,0) 3**

This portion of business law covers the law applicable to contracts, sales, personal property and bailments.

BA255 Business Law II**(3,0) 3**

This portion of business law covers the law applicable to commercial paper, corporations, partnerships, agency and employment.

BA261 Business Skills**(1,0) 1**

A series of specific, business-skill classes. Each course will provide 15 classroom hours of instruction. A student may register for one or more sections per term, for a maximum of three credits earned in this course.

BA291 Students in Free Enterprise**(0,3) 1**

Students work in teams to develop outreach programs. They learn by means of "real-world" experiences, then teach others how market economies and businesses operate. Corporate CEOs and senior executives judge these programs annually in regional competitions, and the winners of those contests then compete at the international exposition. Outreach program development enhances students' creative and communication skills by preparation of written and oral presentations. May be repeated for credit for a total of four credits.

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.

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.

CHEMISTRY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

CH091 Basic Chemistry**(3,0) 3**

Thorough exposure to elementary chemistry for students inadequately prepared for college-level chemistry. Emphasis on drill to enhance problem-solving skills. MA086 or equivalent/satisfactory score on ACT or Placement Exam. Students must receive a C (2.0) or better in this course to qualify for CH104, CH108 or CH115. Credit in this course does not apply toward graduation.

CH104 Life Chemistry I**(3,0) 3**

An introduction to selected principles of chemistry, including organic chemistry, with emphasis on their physiological importance and their applications to nursing and other health related professions. This course does not apply toward a major or minor in chemistry. Prerequisite: MA086 and SA091 or equivalent/satisfactory score on ACT or Placement Exam.

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, each with a grade of C (2.00) or better.

CH108 Applied Chemistry**(3,3) 4**

An introduction to selected principles of chemistry with emphasis on technological applications. Credit in this course does not apply toward a major or minor in chemistry. Prerequisite: MA086 and SA091 or equivalent/satisfactory score on Placement Exam.

CH115 General Chemistry I**(4,3) 5**

Fundamental principles of chemistry with emphasis on atomic structure, molecular structure and stoichiometry. Prerequisites: High school chemistry and MA092 or equivalent, each with a grade of C (2.0) or better. SA091 or equivalent/satisfactory score on ACT or Placement Exam.

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 (2.0) 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.

CH232 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.

CH290 Independent Study in Chemistry
(1-4,0) 1-4

Special studies and/or research in chemistry for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources office.

CH341 Environmental Chemistry I: Water and Water Pollution Control
(3,3) 4

A study of the environmental chemistry of water, the measurement and remediation of water quality problems, the toxicology of water pollutants, and the environmental aspects of energy use. Also listed as EV341. Prerequisites: CH225, CH231, and NS103.

CH342 Environmental Chemistry II: Air and Solid Wastes
(3,3) 4

A study of the environmental chemistry of the atmosphere and the geosphere, including the measurement and remediation of air pollution and soil contamination problems. The nature and handling of hazardous wastes will also be covered. Prerequisites: CH225, CH231 and NS103.

CH351 Introductory Biochemistry
(3,3) 4

Introduction to the chemistry of biological molecules, including the general properties and chemical transformation of amino acids, proteins, carbohydrates, lipids and nucleic acids. Emphasis will be on correlating chemical reactions with biological function. An introduction to the intermediary metabolism of the carbohydrates, amino acids, lipids and nucleic acids will also be presented. Prerequisite: CH220 or CH226.

CH352 Biochemistry II: Intermediary Metabolism
(3,0) 3

A continuation of introductory biochemistry with a more-detailed study of the metabolism of carbohydrates, lipids, and nitrogen containing molecules such as amino acids and nucleotides. Emphasis will be placed on the similarities and differences among the various metabolic pathways and cycles. The interrelationships that exist among the various metabolic processes will also be discussed. An introduction to the genetic code and its relationship to nucleic acid and protein biosynthesis will also be presented. Prerequisite: CH351.

CH353 Introductory Toxicology
(3,0) Alternate Years 3

An introduction to toxicology, including its history, types of poisons, their mode of operation and the biochemistry of detoxification. Environmental problems caused by toxic contaminants will be discussed. Offered even-numbered spring semesters. Prerequisite: CH351.

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.

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.

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 and database management systems. Brief survey of other topics such as presentation graphics, multimedia usage, desktop publishing, the Internet and the World Wide Web.

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.

CS121 Survey of Computer Science
(3,0) 3

A broad-based introduction to the discipline of computer science, using the C++ programming language and basic operating system features as vehicles. Basic programming principles, including built-in and programmer-defined data, operators, functions and control structures. Applications drawn from basic computer science areas, including computer architecture, automata, artificial intelligence, database management, graphics, communication and numerical computation. Prerequisite: CS105 with a minimum grade of C.

CS201 Data Structures and Algorithms
(3,0) 3

An introductory course in data structures and algorithms, with an emphasis on abstraction,

implementation and analysis. Pointers, lists, stacks, queues, trees and binary trees, and graphs. Application of various data structures to problems selected from the spectrum of computer science topics. Prerequisite: CS121 with a minimum grade of C.

CS205 Computer Organization and Architecture

(3,0) alternate years 3

A hardware-oriented introduction to the structure of modern computer systems, emphasizing the role of, and interrelationships between, the various components. The evolution of modern computer systems. Memory organization, peripheral devices and their connectivity. Instruction sets, arithmetic and central processing unit structure. Control unit organization and operation. Alternative computer architectures. Prerequisite: CS121 with grade of C or better. Corequisite: CS201.

CS210 COBOL Programming

(3,0) alternate years 3

An introduction to the COBOL programming language emphasizing facilities for the effective management of files and databases. Overview of COBOL syntax, arithmetic, input/output and control structures in COBOL. Report generation and table management. COBOL facilities for sorting and merging files. Sequential, relative and indexed file organizations and their applications. Facilities for interfacing with database management systems. Prerequisite: CS121.

CS211 Database Applications

(3,0) 3

An introductory course in database design and implementation, using microcomputer-based relational database software. Single and multi-table databases, forms and reports, query processing, data import and export, and database-related programming. Prerequisite: CS201.

CS221 Computer Networks

(3,0) 3

An introduction to the basic principles of computer networks and communication, exploring both the hardware necessary to support computer networks and the software needed to utilize those networks. Basic network topologies, network protocols, and local and wide-area networks. Prerequisites: CS201 and CS205.

CS271 Network Hardware and Software

(3,0) 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.

CS281 Network Design and Implementation

(3,0) 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. Prerequisites: CS101 and CS105.

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.

CS312 File and Database Management

(3,0) alternate years 3

An introduction to files and file processing, with an emphasis on non-sequential organizations for supporting multi-file databases. Direct file structures and hashing, indexing, tree-structures organizations. Expandable file structures. Secondary key retrieval. Application to database structures. Prerequisite: CS211.

CS321 Computer Graphics

(3,0) alternate years 3

An introduction to the generation of graphical images by computer. Survey of common graphics devices. Generation of lines and curves. Representation of two-dimensional objects. Techniques for area filling. Scaling, rotation and translation in two dimensions. Rendering three-dimensional objects by projections. Scaling, rotating and translating in three dimensions. Hidden line and hidden surface detection and removal. Prerequisites: CS201, and MA141 or MA151.

CS333 Systems Programming

(3,0) alternate years 3

An introduction to systems-level programming using C and assembly language. Design and development of specialized systems utilities, such as window-management packages and command interpreter shells. Overview of the function and design of system utility programs, such as text editors, language processors and linkers. Prerequisite: CS205.

CS334 Operating Systems Concepts

(3,0) alternate years 3

Definition and historical development of operating systems. Characteristics of batch, interactive and multiprogramming systems. File systems, processor and memory management. Communication, concurrency, deadlock and protection. Prerequisite: CS333.

CS418 Software Engineering

(1,4) 3

A project-based introduction to the design and implementation of computer software. Requirements analysis, software specification, design methodologies, implementation, testing, verification, documentation and maintenance. Development of a complete software system for "real-world" clients by project teams. Prerequisite: CS312.

CS490 Research Topics in Computer Science

(1-4,0) 1-4

Special studies and/or research in computer science for individuals or small seminar groups.

Course content to be arranged with instructor and with approval of the department head. This course may be repeated for a maximum of eight credits. Prerequisites: Junior standing or higher.

CONSTRUCTION TECHNOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

TC101 Construction I

(3,0) 3

An overview and analysis of properties, processing and applications of conventional construction materials. Wood, concrete, masonry, ferrous and nonferrous metals, glass, plastics and other materials are examined in detail. The application of building codes as they pertain to these materials will also be presented.

TC102 Construction II

(3,0) 3

Concepts in construction blueprint reading and the development of skills in reading construction drawings. The correlation of building codes and specifications to the production of working drawings. Prerequisite: TC101.

TC103 Surveying

(2,4) 3

Concepts and operation of distance and angular measurement. Use of transit and level, land description, traverse, construction and earth work calculations.

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 and repair of small engines.

TC118 Drafting

(2,3) 3

Technical drawings to include instruments, lettering, geometrical construction, sketching, multiview projection, sectioning, auxiliary views, dimensioning, tolerancing, fasteners, design and working drawings, reproduction and control drawings, pictorial drawings, intersections, graphical vector analysis and graphs. Prerequisite: none.

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).

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.

CRIMINAL JUSTICE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

CJ101 Introduction to Criminal Justice
(3,0) 3

A survey of the evolution of criminal justice with particular emphasis on the development of western models of justice. Included will be the role of law enforcement, corrections, the courts and loss control.

CJ102 Police Process
(3,0) 3

Basic principles and techniques of administration which apply to criminal justice organizations. Emphasis on decision making, authority, human relations and communication within organizations.

CJ110 Introduction to Corrections
(3,0) 3

History and philosophy of correctional policy and need for correctional reform; correctional system from arrest through sentencing; correctional personnel and clients.

CJ130 Client Relations in Corrections
(3,0) 3

Meaning and functions of culture and discrimination, minorities in Michigan, affirmative action and attitude formation; ethics, values and professional responsiveness.

CJ140 Correctional Client Growth and Development
(3,0) 3

Emphasis on needs, identities and development of recipients of correctional services; to assist students in gaining insights into development of sensitivity to behavior and motivations of corrections clients. Specific problems of prisoners and intervention strategies are reviewed.

CJ201 Firearms Training
(0,2) 1

Emphasis on safe weapon handling, the fundamentals of good marksmanship, proper methods of cleaning and weapon nomenclature. A variety of weapons will be used. Students will have to provide their own targets and ammunition. Prerequisite: Criminal justice student, sophomore standing or permission of department chair.

CJ202 Canadian Criminal Law
(3,0) 3

Survey of Canadian substantive and procedural criminal law including search and seizure, arrest, evidence and statutory and case law.

CJ206 Law Enforcement/Loss Control Internship
(3,0) 3

Field experience for correlation of theoretical knowledge with practice in participating law enforcement or loss control agencies. Prerequisite: Permission of the instructor or sophomore standing. Course may be elected twice for credit of six hours.

CJ212 Loss Control
(3,0) 3

Study of security, including historical, legal and philosophical framework for various phases of security operations in our society today.

CJ220 Institutional Corrections
(3,0) 3

A survey of the history and philosophy of correctional institutions focusing on: The use of imprisonment as a mechanism of social control, custody versus treatment, rights of prisoners, prison and jail management, institutional training programs, examination of contemporary correctional institutions, prison and jail architecture, and prisoner society.

CJ240 Community-Based Corrections
(3,0) 3

A survey of the history, development, techniques and fundamentals of non-institutional correctional programs and services. Emphasis will be placed on the necessity of correctional programs to interact with other human service agencies within the community.

CJ243 Investigation
(3,0) 3

Introduction to investigation and the techniques

of forensic science with emphasis upon gathering and documenting information for determination of fact. Prerequisite: CJ101.

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 SO214 (formerly CJ106).

CJ401 Senior Seminar
(3,0) 3

Seminar and independent study course with individual student guidance by faculty on selected research topics in criminal justice. 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, CJ321.

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.

CJ625 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.

CJ684 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.

CRIMINAL JUSTICE/ FIRE SCIENCE

CF601 Protective Services Policy Analysis

(3,0) 3

This course examines the interrelatedness and policy implications of the protective services components.

CF602 Remediation in Criminal Justice, Fire Science and Emergency Preparedness

(3,0) 3

This course examines the strategies and policy decisions that come into play to avoid violation or corrected, mandated, or adjudicated deficiencies.

CF603 Enforcement in Protective Services

(3,0) 3

This course examines the design, scope and evaluation of the enforcement functions in the governmental and privatized areas.

CF604 Prevention in Protective Services

(3,0) 3

This course examines proactive assessment of operations to avoid undesired outcomes.

CF610 Corrections Management Issues

(3,0) 3

This course examines management strategies which have been used in the public sector, with special emphasis on corrections settings. Special considerations when managing correctional facilities will be evaluated.

CF611 Disaster Planning and Management

(3,0) 3

This course explores the responsibilities of disaster planning and management for those in protective services. On site, local, regional and national disasters will be investigated. Applicable federal, state/provincial and local statutes are addressed. Actual disaster plans and case studies will be analyzed.

CF612 Management of Security Programs

(3,0) 3

Survey of salient issues and concerns confronting security. Examines the application and contribution of various management concepts and philosophies to assets protection issues such as information security, personnel protection, threat analysis, technological adaptation and resource allocation.

DATA PROCESSING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

DP151 Computer Applications
(1-2,0) 1-2

A series of courses using computer applications programs. Each course will provide 15 classroom hours of instruction per credit. A student may register for one or more sections per term for a maximum of five credits earned in this course. Students without computer experience are expected to take the introduction to computers module as a prerequisite.

DP160 Personal Computers Workstation Operating Systems

(1-3,0) 1-3

A series of courses covering popular personal computer workstation operating systems. Each course will provide 15 classroom hours of instruction per credit hour. A student may repeat this course covering a different workstation operating system for a maximum of six credit hours.

DP163 Troubleshooting and Repair of Personal Computers

(2,2) 3

A basic introduction to the architecture, installation, maintenance, troubleshooting and repair of personal computers. The student will learn elementary principles of electronics, magnetism and logic. The disassembly and upgrading of a personal computer will be covered in the laboratory as well as the use of diagnostic hardware and software. Prerequisite: At least one credit hour of DP160.

DP225 Word Processing Techniques
(2,0) 2

Introduction to WordPerfect 6.1 for Windows and Perfect Office. Students will cover basics of word processing including document creating, saving, printing, and some advanced features such as table, merge, graphics and report formatting. Hands-on experience is scheduled in labs outside of classroom hours.

DP241 Desktop Publishing
(3,0) 3

Emphasis is on understanding the basic concepts of desktop publishing and how to produce well-designed desktop publications. Focus is on creating brochures, graphics, newsletters, reports and resumes using a high-end page composer, paint and vector graphics software. Prerequisites: English competency and a working knowledge of a word processing software application.

DP260 Personal Computers Network Operating Systems
(1-3,0) 1-3

A series of courses covering popular personal computer network operating systems. Each course will provide 15 classroom hours of instruction per credit hour. A student may repeat this course covering a different network operating system for a maximum of six credit hours. Prerequisite: At least one credit hour of DP160.

DP263 Storage, Protection and Recovery of Personal Computer
(2,2) 3

Continues and expands upon DP163 with emphasis on disk; drives, formatting disks, editing, virus detection, prevention and eradication. Prerequisite: DP163.

DP345 Presentation Graphics
(3,0) 3

The design of overheads and slides used in presentations. Color, font size, placement and visual effect will be studied to produce effective visuals. The effective use of visuals in presentations will be covered. Graphics programs will be used to prepare visuals. Prerequisites: English competency and working knowledge of word processing or desktop publishing.

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, MA141, or MA112. Credit not allowed for both EC202 and EC208.

EC209 Honors Principles of Macroeconomics
(3,0) 3

This course employs algebra, geometry and calculus intensively in the development of principles of macroeconomics. The topics covered are nominally the same as in EC201; however, there is more advanced coverage of topics in which a knowledge of mathematics is required. Prerequisites: MA151, MA141, or MA112. Credit not allowed for both EC201 and EC209.

EC302 Managerial Economics
(4,0) 4

A study of the application of economic analysis to managerial decisions. Topics include the firm and its environment, demand estimation, production and cost analysis, optimization and profit maximization, analysis of markets, pricing strategy and analysis of project decisions. Prerequisite: MA112 or MA141 or equivalent.

EC304 Money, Banking and Monetary Policy
(3,0) 3

Monetary theory; study of financial institutions and central bank authorities; monetary policy and its limitations; changing structure of financial markets and industry; relationships between money, prices and national income. Prerequisite: EC201.

EC305 Public Finance
(3,0) 3

The economics of public finance, including taxation, public expenditures and fiscal policy. Rationale and objectives of government activity in a market system; distribution of tax burden; income redistribution effects of taxation and expenditure programs. Prerequisite: EC201 or EC202.

EC308 Intermediate Microeconomics
(3,0) 3

Theory of demand; consumer choice and utility analysis; production and cost analysis; price-output determination under the four market structures; resource allocation; public policy and managerial applications emphasized. Prerequisite: EC202.

EC309 Intermediate Macroeconomics
(3,0) 3

Determinants and measurement of national income; theories of consumption and investment; aggregate economic analysis including IS-LM and aggregate demand-aggregate supply models; unemployment and inflation; stabilization policies; economic growth. Prerequisite: EC201.

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.

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: EG101 or CS101, and MA140.

EE210 Circuits and Machines
(3,2) 4

A study of simple electrical rules, theorems and laws applicable to AC and DC circuits. Specifically, Kirchhoff's laws, Thevenin's and Norton's theorems, superposition, current and voltage divider rules, etc. will be studied and applied to circuit analysis. Further study in RL and RC transient circuits, motors and generators will be provided. Laboratory work will focus on the use of PLC to control motors and other DC and AC machines. Prerequisites: EG101 or CS101 and MA143.

EE250 Micro-Controller Fundamentals
(3,2) 4

An introduction to micro-controller architecture, machine and assembly language program development, and computer system hardware and interfacing techniques. Prerequisite: EE125.

EE305 Analog and Digital Electronics
(2,3) 3

A study of digital electronics, electronic devices, and circuits for non-electrical engineering majors. Topics include discrete logic device, diodes, and amplifiers. Prerequisite: EE210.

EE310 Network Analysis I
(4,3) 5

A study of simple linear electrical networks using mesh, nodal and other analysis methods. Additional circuit 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: MA343.

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 and MA343.

EE330 Electro-Mechanical Systems
(3,2) 4

A study of AC and DC motors, motor controllers, timing and sequencing circuits, transformers, power, and power distribution systems. PLC are utilized in the laboratory to integrate the power systems to various electro-mechanical devices. Prerequisites: EE210 and MA243.

EE355 Microcontroller Systems
(3,3) 4

A study of microcontroller systems design based on the MC68HC11. 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: EG265 or CS105 and EE250. Corequisite: EE370.

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.

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 EE370.

EE425 Digital Signal Processing
(2,2) 3

A study of the application of real-time digital signal processing in analog and digital control system design. The course emphasizes discrete Fourier transforms, design of digital filters, sampling theory, and process control using data acquisition equipment and computer simulation techniques. Additional emphasis is placed on communication theory in relation to its utilization of DSP technology. Prerequisites: MA207, MA343, EE315 and RS460.

EE440 Electromagnetic Fields
(2,2) 3

A study of static and time-variant electric and magnetic fields, plane waves, guided waves, transmission line theory, radiation and antennas. Prerequisite: EE315.

ELECTRONICS ENGINEERING TECHNOLOGY AND TELECOMMUNICATIONS ENGINEERING TECHNOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ET110 Applied Electricity and PLC
(3,2) 4

Basic principles of DC and AC electricity. Topics include: RLC series and parallel circuits,

electrical motors and programmable logic controllers (PLC). Laboratory exercises will reinforce the lecture material. Corequisite: MA092.

ET125 Electronic Drafting
(1,3) 2

An introduction to electronic drafting to include instruments, lettering, sketching, multi-view projection, dimensioning, reduction, standard electronic symbols, schematic diagrams and circuit board layout.

ET175 Applied Electronics
(3,2) 4

An introduction to the operation of basic electronic devices including diodes, transistors and operational amplifiers. Topics include: Power supplies, amplifiers, frequency response and filter circuits. Laboratory exercises will reinforce the lecture material and introduce computer circuit analysis. Prerequisite: ET110. Corequisite: MA140.

ET240 Communications I
(3,2) 4

An introduction to analog and digital communication with an emphasis on modulation techniques. Topics include: Amplitude, angle and pulse modulation, transmission and reception circuitry and special techniques. Prerequisite: ET175. 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.

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. Corequisites or prerequisites: PH231 and EG265.

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. Corequisite or prerequisite: EG265.

ENGLISH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EN091 Basic English
(3,0) 3

Thorough review of basic language skills for students who need preparation for freshman composition; weekly vocabulary tests and writing assignments. Credit/no credit final grade. Credit in this course does not apply toward graduation. All students whose English ACT scores do not place them in EN110 *must* receive credit for EN091 before taking EN110.

EN110 Freshman Composition
(3,0) 3

Emphasis on writing, usage and rhetoric which may include narration, process, description, comparison/contrast, definition and classification. Introduction to library resources and documentation. Prerequisite: Appropriate score on the English ACT examination or credit for EN091.

EN205 Technical Report Writing
(3,0) 3

A course in research methods, critical readings and written reports typical in technology, including memos, short reports, articles, resumes, and research processes and reporting of results in a long project. Emphasis on critical analysis and evaluation using APA style. Prerequisites: EN110 and sophomore standing.

EN210 Research Paper Process
(3,0) 3

A course in research methods and critical reading and writing. Includes introduction to library resources and research protocols. Emphasis on critical analysis and evaluation of primary and secondary source materials. Requires one short and one long research paper using APA style. Prerequisites: EN110 and sophomore standing.

EN215 Introduction to Literature and Research
(3,0) 3

A course in research methods and critical reading and writing, including the study of traditional and modern techniques of literary interpretation. Requires one research paper and critical essays using MLA style. Prerequisites: EN110 and sophomore standing.

EN220 Advanced Composition
(3,0) 3

Study and practice of the various forms of academic discourse. Library research paper required. Prerequisite: EN210 or EN215.

EN221 Creative Writing
(3,0) 3

Writing and discussion of art forms such as poetry, fiction and drama consistent with the student's individual interests. Prerequisite: EN210 or EN215.

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.

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.

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.

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.

EN235 Survey of Native Literature of North America
(3,0) 3

An overview of Native American Literature, including myths, poetry, biographies, legends and stories from recognized Indian and non-Indian authors. The significance of Indian philosophy found in such literature will be emphasized. Prerequisite: EN210 or EN215. (Also listed as NA235).

EN236 Literature and Culture
(3,0) 3 Fall Semester

Reading novels, stories, plays and poetry of American minorities and other cultures to discover the world-view expressed. Prerequisite: EN110.

EN320 Responding to Writing
(3,0) 3

A course in the theory and practice of effective writing with emphasis on evaluating and responding to writing across the disciplines. Recommended for writing ombudsmen, tutors, education students and other interested students. Course includes rhetorical and linguistic theory, current research on writing as process, theory and practice of responding to student writing, computer-assisted writing and revision, tutorial strategies and characteristics of writing in various disciplines. A strong theoretical framework with student paper examples from interdisciplinary fields.

EN321 Rhetoric and Composition Theory
(3,0) 3

A course in the theory of rhetoric and composition. The course takes an historical approach,

tracing the growth, uses and transformations of rhetoric from the classical period to the present day, highlighting the major underlying cultural forces which fostered change in rhetoric and fueled the development of composition theory. Emphasis is upon modern rhetoric and composition theory. Prerequisite: EN110.

EN322 Structure of the English Language
(3,0) 3

Description of the system of rules underlying the grammar of English. Issues addressed will include language development, correctness, usage, language change, syntax, morphology, form classes and structure classes. Prerequisite: EN210 or 215.

EN330 Development of the Novel in England and America I

(3,0) Alternate Years 3
Study of the leading novelists — English and American — of the eighteenth century and the first half of the nineteenth century, beginning with Defoe and ending with the works of the 1840s. Prerequisites: EN231-232, or EN233-234.

EN331 Development of the Novel in England and America II

(3,0) Alternate Years 3
Study of the background and art of the Anglo/American novel from approximately 1850 to the present. Intensive examination of characteristic forms, techniques and themes in major works. Prerequisites: EN231-232 or EN233-234.

EN332 The Short Story

(3,0) Alternate Years 3
A study of the background and development of the short story. Readings will include selections from Boccaccio, the French conte and the German novella in addition to English and American short stories. Prerequisite: EN210 or EN215.

EN333 Studies in the Drama: the Genre and Theatre in Context

(3,0) Alternate Years 3
A study of major plays in the context of theatre and literary history from the beginning to the present, including European, British, and American development. Prerequisite: EN210 or EN215.

EN334 Approach to Poetry

(3,0) Alternate Years 3
This is an introduction to the appreciation of poetry for junior-senior students (not exclusively English majors). Prerequisite: EN210 or EN215.

EN335 Children's Literature

(3,0) 3
A review of the rich and diverse field of literature for children from infancy to adolescence. Required for elementary teacher non-English majors and an elective for English majors. Prerequisites: EN210 or EN215 and SD101.

EN420 History of the English Language

(3,0) 3
Origin and development of the English language, including its relationship to other Indo-European languages, the history and structure of Old and

Middle English, and the rise of modern English. Prerequisite: EN233-234.

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.

EN430 Chaucer

(3,0) Alternate Years 3
Intensive study of Chaucer's life and times and principal literary works: Canterbury Tales, Troilus and Criseyde, and The Romaunt of the Rose. Prerequisite: EN233.

EN431 Milton and the Metaphysical Poets

(3,0) Alternate Years 3
Intensive study of Milton's principal poetic works including Paradise Lost and Samson Agonistes; Donne's poetry and prose, and the metaphysical poets. Prerequisite: EN233.

EN432 Shakespeare

(3,0) Alternate Years 3
Intensive study of Shakespeare's comedies, tragedies and historical dramas. Prerequisite: EN233.

EN433 Seminar in Major American and English Writers

(3,0) 3
An intensive study of a single writer, or of two or three writers who might be studied together profitably along thematic, technical or other lines. Prerequisite: Junior-senior standing. May be repeated twice for credit.

EN450 Directed Individual Study

(3,0) 3
Individual study of an author, period, genre or other related topic relevant to literary scholarship. Each student will do extensive research and prepare a paper. Prerequisite: Permission of instructor.

ENVIRONMENTAL SCIENCE

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

EV220 GPS/GIS Techniques

(2,3) 3
An introduction to global positioning systems and geographic information systems technology, theory and applications. Course content includes practical map and compass use, triangulation, GPS receiver theory and operation, GIS fundamentals and operation, and the collection and integration of field positional data into GIS applications. Special emphasis is given to hands-on operation and practical applications in science, natural resource management, business, public health and safety, and public administration. Prerequisites: MA086 and SA091 or equivalent/satisfactory score on ACT or Placement Exam and CS101.

EV230 Introduction to Geographical Information Systems, GIS

(2,3) 3
An introduction to the concepts and applications of geographical information systems (GIS). Topics to include data acquisition, spatial databases, vectors, applications, issues and trends. Students will gain practical experience in the operation of GIS systems. Prerequisites: CS101 and either BL130 or EV220.

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 / 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. Offered even-numbered fall semesters. 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. Offered odd-numbered fall semesters. Prerequisite: MA112 or equivalent.

EV341 Environmental Chemistry I: Water and Water Pollution Control

(3,3) 4
A study of the environmental chemistry of water, the measurement and remediation of water quality problems, the toxicology of water pollutants, and the environmental aspects of energy use. Prerequisites: CH225, CH231 and NS103. 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 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 EV electives. This is a credit/no credit course.

EV490 Independent Study in Environmental Science**(1-4,0) 1-4**

Special studies and/or research in environmental science for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have junior or senior standing, have an overall GPA of at least 2.5, and no I grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources office.

EV499 Senior Thesis**(1,3) 2**

Required of seniors majoring in environmental science. Students present seminars and provide an audience for fellow seniors. Each paper presented will be critically analyzed by the audience. Prerequisite: EV395.

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 Training I**(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.

ES232 Athletic Training II**(3,0) 3**

This class will be a continuation of ES230. After establishing a general knowledge base in ES230 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 effective-

ness 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 Practicum I**(0,2) 1**

To allow students to gain practical experience in the athletic training setting and apply the concepts they have learned in previous athletic training classes. Prerequisite is admission to the Athletic Training Program. Corequisite: ES345.

ES302 Athletic Training Practicum II**(0,2) 1**

A practical experience in the field of athletic training that applies to the concepts and techniques taught in ES230, ES232, ES234, ES344 and ES349. Prerequisites: Admission to the Athletic Training Program and ES301. Corequisite: ES349.

ES344 Kinesiology**(3,0) 3**

Science of movement applied to muscle, joint structure and function and application of physical laws of gravity, leverage, motion and balance to human performance. Video tape motion analysis is used to apply these theories into practical experience.

ES345 Modalities and Therapeutic Rehabilitation in Sports Medicine**(3,0) 3**

This course is designed to help guide the student in making decisions in the proper usage of modalities and therapeutic rehabilitation in an athletic setting. Students will be responsible for modality and rehabilitation progressions starting at the initial injury and progressing the athlete to return to action status. Prerequisite: ES242.

ES348 Fitness Evaluation II — Laboratory Procedures**(2,2) 3**

Provides theoretical background and technical aspects specific to laboratory procedures employed in clinical exercise science settings. Emphasis on developing skills with instrumentation for assessing cardiac activity, respiratory functioning, metabolic dynamics, 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. Prerequisite: BL122 (formerly ES230).

ES358 Research Methods in Exercise Science**(3,0) 3**

Introduction to research methods and related statistical procedures for constructing and analyzing research activities. Presentation of statistical concepts including correlation, t-tests and analysis of variance and their use in exercise science. Introduction to measurement concepts of validity and reliability and the facets of writing a research report. Prerequisites: MA207 and 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 Practicum III**(0,2) 1**

A practical experience in the field of athletic training that applies the concepts and techniques presented in ES230, ES232, ES234, ES345, ES349 and ES344. Prerequisites: senior status in the Athletic Training Program and ES302. Corequisite: ES452.

ES402 Athletic Training Practicum IV**(0,2) 1**

A practical experience in the field of athletic training allowing students to serve as a team athletic trainer responsible for the health care of an athletic team under supervision of the faculty/staff athletic trainers. Prerequisites: senior in the Athletic Training Program and ES401.

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**6**

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.

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.

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. Prerequisite: enrollment in degree programs in fire science, the natural sciences, natural resource technology or conservation law.

FS111 Hazardous Materials
(3,0) 3

Principles of combustion; examination of theoretical and practical aspects of combustion. Investigation of physical and chemical properties of substances which may harm responders, the general public and the environment.

FS204 Fire Protection Hydraulics and Pumps
(3,0) 3

The application of mathematics and physics laws to properties of water, force, pressure and flow velocities. Emphasis: Applying principles of hydraulics to fire protection problems, use of water supply sources and needs; examines fire department apparatus testing, inspection and maintenance; deals with apparatus specifications and requirements. Prerequisite: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

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: FS204 and MA086 or equivalent/satisfactory score on ACT or Placement Exam.

FS211 Tactics and Strategy
(3,0) 3

Utilization of manpower, equipment and apparatus on the fireground. Emphasis: Pre-fire planning, fire ground decision making. Implementing tactics and disaster planning. Students will use fire simulation programs and interactive technology to apply and implement the principles covered in didactic instruction. Prerequisite: FS101.

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 and FS204. Corequisites: FS205 and FS211.

FS301 Code Enforcement Inspection and Fire Prevention
(3,0) 3

An introduction to fire inspection procedures and inspection techniques as related to building construction, fire load, fire protection systems, plans and the storage of hazardous materials. A study of safety code enactment, formulation and its relation to fire prevention and public education efforts and responsibilities of the fire service. Prerequisite: FS101.

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: FS101 and FS111 or CH115/116.

FS321 Industrial Fire Protection
(3,0) 3

Examination of fire and life-style hazards in business and industry. Emphasis on managing the codes process, fire prevention and training private fire brigades. Prerequisite: FS101.

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 permission of instructor.

FS490 Independent Study for Fire Science
(1-4) 4

This may take the form of either a research project or a program of directed reading on a specific subject. One to four credits over a period of one or two semesters may be granted

according to the nature of the student's project. May be repeated up to six credits. Prerequisite: Permission of instructor.

FRENCH

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

FR151 First Year French I
(4,1) 4

Introduction to basic French grammar and vocabulary; designed to acquaint the student with the minimum essentials of oral and written French. Students will learn to read magazines, newspapers, and elementary texts as well as to express themselves orally.

FR152 First Year French II
(4,1) 4

Further study of French grammar and vocabulary. Emphasis on student's ability to communicate both orally and in writing. The reading of various materials with the aim of translating English, enlarging the vocabulary and improving understanding of the language. Prerequisite: FR151 or equivalent.

FR251 Second Year French I
(4,1) 4

Review of basic grammar; introduction to advanced idiom; use of oral French in classroom; writing of compositions in French; reading of French texts. Prerequisite: FR152 or equivalent.

FR252 Second Year French II
(4,1) 4

Emphasis on use of oral French; reading, translation, and explication of text; conducted as much as possible in French. Prerequisite: FR251 or equivalent.

FR351 Advanced Conversation and Composition I
(3,0) 3

Extensive reading of French contemporary prose and writing of compositions on related current issues. Directed discussion of all oral and written assignments. Systematic review of grammar. Prerequisite: FR252 or equivalent.

FR352 Advanced Conversation and Composition II
(3,0) 3

Continuation of FR351 with special emphasis on the development of a more mature oral and written expression. Prerequisite: FR351 or equivalent.

FR353 Business French I
(3,0) 3

An initiation into the language skills for use in business situations in a French speaking environment. The course is organized around 12 different professional situations in the service industry. A conversational approach is used with systematic oral and written practice from authentic documents. May be taken concurrently with FR351. Prerequisite: FR252 or equivalent.

FR354 Business French II
(3,0) 3

Continuation of FR353. The course is organized around 12 different professional situations within

the industrial sector. Further systematic practice through visits to French-speaking companies and individual reports. Aims to bring students to a level of proficiency in French business communication that would enable them to function in an internship situation. May be taken concurrently with FR352. Prerequisite: FR353 or equivalent.

FR355 Survey of French Literature I
(3,0) 3

A chronological study of the major works of French literature from its origins to the 18th century. Emphasis on the development and continuity of ideas and their evaluation within the political, social, and religious framework of the time, their influence on the formation of the language and literature. May be taken concurrently with FR351. Prerequisite: FR252 or equivalent.

FR356 Survey of French Literature II
(3,0) 3

Study and discussion of the major works of French literature of the 18th, 19th, and 20th centuries. May be taken concurrently with FR352. Prerequisite: FR355 or equivalent.

FR360 Seminar in French Studies
(1-4) 1-4

This course is structured as a study tour of France and provides students with an understanding of and immersion in French culture and civilization. Activities will be scheduled in Paris, Normandy, Mont St. Michel. May be used as humanities credit. Prerequisite: Permission of instructor.

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.

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.

EG265 "C" Programming
(3,0) 3

An introductory course in "C" programming with an emphasis on modular code development, computer interfacing, computer control architecture, control applications, graphics, simulation and team code development. Prerequisites: MA104, MA109 and EG101 or CS101.

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.

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
(2,2) 3

This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, ethics, timelines, resource allocation, project management and performance evaluations. Skills in oral and written communications, problem conceptualization, creative problem solving and technical presentations are developed. Prerequisites: Senior status and expected graduation within the academic year and one of the following CH231, EE370, ME350 or 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.

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.

GEOLOGY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

GE111 Physical 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, sea level change, catastrophic surface processes such as flooding and landslides, and energy fuels and waste disposal as they impact on society. Laboratory exercises involve minerals, rocks, topographic maps, geologic maps, aerial photographs and local field trips (as weather permits). SA091 or equivalent/satisfactory score on ACT or Placement Exam.

GE112 Physical Geology II
(4,1) 4

Surficial processes and landforms continued from GE111. Geologic time, earthquakes, earth's interior, ocean basins, mountains, plate tectonics and other aspects of our dynamic earth are also studied, supplemented by appropriate laboratory exercises and two field trips. Prerequisite: GE111 or NS102.

GE114 Field Excursions in Earth Science
(1,4) 3

A field-based educational experience in which aspects of geology, including environmental geology and the interrelationships among geology and other natural sciences, will be addressed. Travel destinations will vary to include regions with unique natural history. Trip expenses are the responsibility of the student. Prerequisite: SA091 or equivalent/satisfactory score on ACT or Placement Exam.

GE215 Historical Geology
(3,2) 4

Summary review of the geologic record concerning origin and evolution of earth through geologic time. Emphasis upon stratigraphic principles, depositional environments, the tectonic framework of North America and significant events in the history of plants and animals. Laboratory exercises involve stratigraphic maps and introductory paleontology. Prerequisite: GE112.

GE216 Structural Geology and Geologic Graphics
(3,3) alternate years 4

Study of stress, strain and deformation of rocks and the structural features commonly occurring in them. Laboratory exercises deal with structures in three-dimensional space and emphasize graphic methods of solving problems and of communicating geologic data. Prerequisite: GE215.

GE221 Crystallography and Mineralogy
(3,4) 4

A laboratory course initially emphasizing the crystalline structure of minerals followed by mineral identification techniques. Major topics include symmetry, crystals, physical properties, composition and related topics. Prerequisite: GE112 or NS102. Pre or corequisite CH115.

GE222 Mineralogy and Petrography
(3,4) 4

A continuation of GE221 emphasizing mineral identification leading to hand lens identification of igneous, sedimentary, metamorphic and other rocks. Related topics include chemical tests and a student research project. Prerequisite: GE221.

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. Prerequisites: GE112, MA112 or MA143 or MA151, and PH222 or PH232 (mathematics may be taken concurrently).

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.

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.

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
(2,3) 3

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
(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, CH105, and HE232.

HE210 Introduction to Health Care Concepts
(3,0) 3

Introduction to the health care system with analysis of the issues and trends affecting the provision of health care services. Not open to nursing majors. Prerequisite: Sophomore standing.

HE228 Multicultural Approach to Health Care
(3,0) 3

This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations and assessment techniques. Prerequisite: SO101.

HE232 Pathophysiology
(3,0) 3

Study of physiological alterations in the body which disrupt homeostasis. Integrates anatomy, physiology and biochemistry into framework for studying disease. Core content provides

understanding of mechanism and principles of disruptions of health. Emphasis on clinical correlations and physiological basis for common disorders. Prerequisite: BL122.

HE235 Computer Application in Health Sciences
(1,2) 2

Introduces students to computer usage and its application to education, research and practice in health care professions. Topics include computer fundamentals, computer language, information systems, data-base systems, expert systems, health care applications, ethical considerations and relationships of computers to health care trends. Prerequisite: NU213.

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.

HE601 Health Care Administration
(3,0) 3

Overview of the American as well as the Canadian health care system, focusing on the political, cultural, economic, human resources, managerial, professional, social and technological forces which shape current and future configuration of the health care system.

HE603 Health Care Administration and the Law
(3,0) 3

An overview of the principles of health care law through an analysis of the legal issues and factors affecting the provision of health care services in both the American and Canadian context. No prerequisites.

HE604 Current Topics in Health Care Administration
(3,0) 3

This is a culminating course in the health care administration track. Topics will be selected from the current issues and trends in health care administration for in-depth exploration during the course. It is a seminar format course with the expectation that students will research and analyze selected topics for classroom presentation and discussion. Prerequisites: HE601, HE602 and HE603.

HE607 Health Management of Aging Populations
(3,0) 3

Management principles applied to the provision of health care for aging populations forms the basis of this course. Population trends, aggregate health care needs, political and social issues, and current and alternative systems of health care for aging populations are explored. The sociology of disease and the meanings of illness as applied to the aging process are explored. Issues of medicalization of aging, individual responsibility, financing and settings for long-term care, and rationing are discussed.

HE610 Managed Care
(3,0) 3

Overview of Managed Care as a system and technique for managing health care delivery to ensure that services provided are necessary, efficiently provided, and appropriately priced. Provides a focus on the principles and issues of managed care, including roles of providers and consumers, and factors influencing the provision of health care services.

HE611 Quality Management Processes
(3,0) 3

The historical development of the concepts, processes and systems of evaluating and managing quality in the provision of health care are explored. Quality improvement techniques, such as Total Quality Management (TQM) and Continuous Quality Improvement (CQI) will be analyzed. Special attention will be given to the underlying tools and approaches fundamental to the quality management process.

HISTORY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

HS101 History of World Civilization I
(4,0) 4

A study of world civilization from earliest time through the baroque.

HS102 History of World Civilization II
(4,0) 4

A study of world civilization from the baroque to the present.

HS131 United States History I
(4,0) 4

A study of United States history from the colonial settlement to the end of the American Civil War in 1865.

HS132 United States History II
(4,0) 4

A study of United States history from the end of the Civil War to the present.

HS201 Classical World and Medieval Europe
(4,0) every third year 4

A survey of Mediterranean civilization from the Bronze Age to the eve of the Renaissance.

HS202 Renaissance, Reformation and Baroque Europe
(4,0) every third year 4

A study of the political, institutional, religious, social, economic and cultural developments from 1400 to 1700.

HS230 Survey of 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 NA230.

HS231 American Military History
(4,0) 4

A general survey of American military history with a specific emphasis on the Midwest and Great Lakes regions. To utilize the unique geographic location of LSSU, field trips to the Straits of Mackinac and St. Joseph's Island are a part of the course.

HS235 History of Applied Science and Technology
(4,0) every third year 4

An introductory study of the origins and development of the applied sciences and technology from 1790 to the present. This survey will focus on the scientists, engineers and inventors responsible for the rapid rise of modern technology, industry, and business with particular emphasis on the developments in chemistry, metallurgy, electromagnetism, thermodynamics and cybernetics. The impact of these developments on the marketplace and society in general will be a major concern.

HS301 History of England — 1000 TO 1714
(4,0) every third year 4

These 700 years witness the formation and maturing of most of the important political and social institutions that have come to be the Anglo-Saxon civilization and tradition. This period is critical to understanding present-day American culture and civilization.

HS302 England in the Modern World
(4,0) every third year 4

A history of England from 1715 to the present, emphasizing the struggle for parliamentary government, the Anglo-French conflict for commercial and colonial empire, the Industrial Revolution, the evolution of democracy and the recession of the British Empire.

HS310 Russia: From Underdeveloped State to Superpower
(4,0) every third year 4

A study of Russian history from Peter the Great to the present.

HS315 Europe From Napoleon to World War I

(4,0) every third year 4
A study in the political and economic history of Europe in the period 1789-1914.

HS316 Europe in the 20th Century
(4,0) every third year 4

A study of Europe in the age of Nazism, Communism, World War I and II, and the Common Market.

HS331 American Intellectual and Cultural History I

(4,0) alternate years 4
A study of American cultural and intellectual institutions as they developed from their Elizabethan and European origins to the mid-19th century. The emphasis will be placed upon the emergence of the unique and variant adaptations that arose in the first 250 years of English settlement in America.

HS332 American Intellectual and Cultural History II

(4,0) alternate years 4
A study of American culture from the mid-19th century until the present. Often considered our finest century, the 19th century witnesses many of America's most unique, fascinating and important contributions. The physical and philosophical aspects of these years will be surveyed. Particular attention will be given to areas where America comes to exercise important influences overseas.

HS335 American Political Parties
(4,0) every third year 4

A study of the rise and development of the American party system and the large number of major and minor parties that have participated in this system in the years prior to 1945. These parties will be treated in an historical fashion rather than structurally. May be taken for political science credit.

HS346 Canadian History
(4,0) every third year 4

A survey of Canadian history including the moving frontier, relations with the United States, British-French rivalry, the establishment of democratic government and the changing relationship to Great Britain.

HS361 Latin America
(4,0) every third year 4

A study and analysis of Latin American history from the end of the Colonial Period to the present. This course will examine the basic political, social and religious institutions of Latin

America and their evolution and role in the change of problems of U.S.-Latin American relations will be an important focus of this study. Prerequisite: GG322 geography of South America.

HS371 Far East Civilization 1850-Present

(4,0) every third year 4
A study of the history of China, Japan, India and adjoining areas of Asia from 1850 to present.

HS420 Field Methods of Archaeology
(4,4) 8

Field course in archaeological survey and excavation methods and techniques, at various sites in area including 1822 Fort Brady. Course held on-site M-R for eight weeks. Only four credit hours may count toward 300- and 400-level courses for history majors. No prerequisites.

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) every third year 4
The events between 1763 and 1791 which produce these documents are the United States in the historical sense. Using original documents and contemporary comments, this critical era will be studied in depth to determine whence we came. Prerequisite: U.S. history sequence desired.

HS441 Diplomatic History of the United States I

(4,0) alternate years 4
American diplomacy from 1775 through the 19th century to U.S. entry into World War I in 1917. May be used as political science credit.

HS442 Diplomatic History of the United States II

(4,0) alternate years 4
American diplomacy from the entry of the U.S. into World War I in 1917 up through the present day. May be used as political science credit.

HS490 Individual Historical Research

(0,1-4) 1-4
Independent study under supervision of history faculty. May be repeated up to a total of six credits. Does not apply toward 300- or 400-level requirements in history. Prerequisite: Permission of the supervising faculty.

HS496 Historical Methods

(2,0) 2
Survey emphasizing research aids and techniques and historical analysis. Readings, discussions and written exercises introduce students to problems, methods and techniques of historical research. Discussion of and practice in main techniques of historical method, including bibliography and documentation.

Prerequisites: Senior standing and pursuit of a major or a minor in history.

HS497 Senior Seminar in History
(0-6) 2

Students will complete an historical research project under the supervision of a faculty member; at end of term participants make oral presentation at seminar for other students and invited guests, and submit the final paper. Prerequisite: HS496 and instructor permission.

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.

HP201 Honors Ideas Seminar
(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.

HP301 Honors Contemporary Issues
(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.

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.

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) 4

The humanities in the life of mankind from prehistory to the Medieval epoch. Emphasizes significant values evolved in the Hebrew, Greek, Roman and early Christian cultures. Includes consideration of the origins of the arts, language, religion, mythology, philosophy, and ancient Chinese and Indian systems of religious thought. Prerequisite: EN110.

HU252 Humanities II
(4,0) 4

Continuation of HU251, the humanities in the age of science, from the early Renaissance to the present. Prerequisite: EN110.

HU255 World Mythology
(4,0) 4

A survey of world mythology from "Gilgamesh" to "Finnegan's Wake". Prerequisite: EN110.

HU256 Introduction to Film: Images of Our Culture
(2,2) 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. Applies toward humanities general education requirement. Prerequisite: EN110.

HU261 World Literature I
(3,0) 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. Applies toward humanities general education requirement. Prerequisite: EN110.

HU262 World Literature II
(3,0) 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. Applies toward humanities general education requirement. Prerequisite: EN110.

HU490 Directed Studies in Humanities
(1,0) 1

To provide students who need one credit of general humanities with an opportunity to read or explore material related to the content of that term. Papers and tutorial session required. Prerequisites: Seven hours of humanities credit; evidence that students are capable of carrying out independent study; approval of department chair or dean.

INTER-DISCIPLINARY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ID300 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).

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.

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.

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

(2,3) 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.

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.

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, compensa-

tion 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.

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.

MT225 Statics and Strength of Materials (3,1) 3

Fundamental concepts of statics and strength of materials. Solutions of problems introducing forces, moments, normal stress, shear stress, bending stress and torsional stress. Theory and application of strain gages. Prerequisites: MA109 and MA140.

MT265 Quality Engineering (2,0) 2

An introduction to the philosophy, principles and methods for the use of statistical process controlling the manufacturing environment. Numerous control charts and frequency distribution will be covered in detail. Management methods will be discussed. Prerequisite: 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.

MARKETING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

MK281 Marketing Principles and Strategy (3,0) 3

A study of the marketing principles, variables, institutions, target markets, marketing mix and the development of marketing strategy. Prerequisite: EN110

MK283 Principles of Selling (3,0) 3

The study of personal selling and its requirements. Topics included are buyer behavior, sales presentations from prospecting to closing the sale, and overcoming objections. Sales interviews by students are an integral part of the course.

MK285 Retail Management (3,0) 3

A study of the field of retailing. A survey of retail institutions; store location and organization; buying and merchandising techniques; retail advertising, sales promotion and image; human resource policies; and store protection.

MK381 Consumer Behavior (3,0) 3

A study of behavioral concepts related to consumer behavior. Attention is directed toward understanding consumer needs, perceptions, attitudes, intentions and behavior within a strategic and managerial framework. Topics include the differences of complex decision making and habit and between high and low involvement decision making. Emphasis is on predicting and understanding purchase behavior for best firm/consumer needs' match. Prerequisite: MK281.

MK384 Physical Distribution (3,0) 3

An analysis of the physical supply/physical distribution system. Studies areas of movement control, including distribution centers and warehousing, traffic and transportation, inventory management, information flow and cost-service alternatives. Prerequisite: MK281.

MK387 Advertising Theory and Practice (3,0) 3

A study of the principles and practices in various advertising media such as newspaper, radio, television, outdoor and direct mail; consideration of creative methods, consumer behavior, measurement of effectiveness and coordination with other aspects of the promotional program. Prerequisite: MK281.

MK480 Marketing Research (3,0) 3

Application of research methods to the field of marketing. Methods of gathering and presenting data, market analysis, consumer surveys and sales forecasting. Students will participate in a research project. Prerequisites: BA211 and MK281.

MK481 Marketing Management (3,0) 3

A study of the essential tasks of marketing managers: (1) identifying marketing opportunities, (2) developing marketing plans, and (3) implementing these plans by introducing marketing strategies. Prerequisite: MK281.

MK483 Sales Force Management (3,0) 3

Principles and policies of sales organization; career opportunities; recruiting, selecting and training sales people; motivation, supervision and evaluation of sales performance; compensation plans, quotes and expense accounts. Prerequisites: MK281 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.

MASTER OF BUSINESS ADMINISTRATION

MB503 Business Law (3,0) 3

Basic principles of contract law and its application to sale of goods, with emphasis on legal aspects of product marketing. Law of agency/employment; business organizations, including partnerships and corporations.

MB508 Statistical Analysis (3,0) 3

Overview of statistical analysis methods; application to business analysis and decision making. Emphasis: Development of problem-solving and computational skills. Prerequisite: MA086 or equivalent/satisfactory score on ACT or Placement Test.

MB521 Financial Accounting (3,0) 3

Basic accounting principles; their application in business with emphasis on management uses of accounting data in decision-making. Includes discussions of accounting control systems and ethical issues.

MB525 Business Finance (3,0) 3

Mathematics of finance; risk-return analysis and portfolio theory; financial markets and securities; financial analysis; capital structure, leverage, and financing alternatives; financial planning and forecasting; capital budgeting; valuation and cost of capital. Prerequisites: MB508 and MB521 or equivalent.

MB561 Organizational Theory 3

Fundamental theories and concepts of management and their application to organization theory and management functions, and processes.

MB581 Marketing Concepts and Applications (3,0) 3

Planning, organizing, directing and controlling of marketing sub-system in business organizations. Focus on environment that influences marketing, and decisions facing marketing managers such as selection, target marketing, designing marketing strategy, and organizing and controlling marketing activities.

MB601 Decision Support Models (3,0) 3

An introduction to managerial support methods and analysis. Topics include statistical modeling methods, optimization and decision support tools, quantitative methods and process modeling. Emphasis will be on the analysis and development of tools to assist in managerial decision making. Hands-on use of support computer software will be required. Prerequisite: MB608 or statistics equivalent.

MB604 Managerial Economics
(3,0) 3

Application of economic theory and analysis to managerial decision-making including demand theory and estimation, production theory and cost analysis, profit planning and optimization techniques, consumer behavior, pricing strategy, economic forecasting. Prerequisites: EC201, EC202 and MB508.

MB608 Research Techniques
(3,0) 3

Survey of research methods used in business; emphasis on development of a research design. Survey techniques, experimental design, non-experimental designs and case study method. Prerequisite: MB508.

MB610 Management Information Systems
(3,0) 3

Deals with the theory and use of information systems in business from a managerial perspective. Topics include systems analysis and database modeling, local and wide area network applications, organizational information integration, Internet applications and strategic uses of information. Consists of lecture, case discussions, presentations and "hands-on" assignments. Prerequisite: DP151 or equivalent experience with computer applications.

MB611 Operations Management
(3,0) 3

In-depth exposure to the management of operational systems. Focus: Development and implementation of realistic solutions to complex problems related to operations management. Prerequisites: An introductory data processing course or equivalent experience, MB508 and MB601.

MB612 Business Process Modeling
(3,0) 3

Provides theoretical and hands-on exposure to the topic of simulation process modeling. Course will consist of tools and techniques to analyze and model processes within both manufacturing and service companies. Heavy emphasis will be placed on practical applications of such techniques. Very user-friendly graphical simulation software will be utilized during the class. Topics will include process analysis, model formulation and solution and statistical analysis. Students will gain experience in understanding and analyzing the flow of products and/or information within the firm and will learn specific modeling skills that will serve them on the job. Prerequisites: MB508 or probability/statistics equivalent and familiarity with Windows environment.

MB621 Managerial Accounting and Control
(3,0) 3

A study of accounting concepts, budgeting, management planning and control, and elements of cost accounting systems. Emphasis is placed on analysis and interpretation of accounting reports for management purposes: measuring performance, controlling costs and evaluating proposals. Prerequisite: MB521 or waiver of MB521.

MB625 Financial Management
(3,0) 3

Advanced study of modern financial theory and issues with emphasis on the utilization of current analytical techniques in the decision-making process. Case discussions and readings from contemporary financial literature supplement the text assignments. Prerequisite: MB525.

MB631 Revising Business Prose
(1,0) 1

Students will contribute documents from the work place. Students will learn to edit such documents for clarity, conciseness and appeal. Prerequisite: BA231.

MB653 Business and Society
(3,0) 3

A course designed to explore the role of business and society; U.S. government regulation/deregulation, labor values and ethics, social responsibility, the changing international environment and the future of the corporation.

MB654 Canadian Business Environment
(3,0) 3

For the foreseeable future Canada is likely to be subject to a series of intense economic, fiscal and political pressures. These stresses will shape the environment within which business will operate in Canada. This course examines these pressures and their implications, particularly for the business community.

MB659 Administrative Policy
(3,0) 3

Concepts and relationships between a firm and its economic, social and political environment. Focus: Position of general manager in formulating strategic policy and implications for attainment of corporate objectives. Prerequisite: Completion of common professional component.

MB660 Organizational Behavior
(3,0) 3

Study and analysis of characteristics common to all organizations (behavior, structure and process); application to the effective management of organizational behavior. Prerequisite: MB561.

MB678 Collective Bargaining and Dispute Settlement
(3,0) 3

Introduction to theories and practices of negotiating and administering collective bargaining agreements; negotiation process, legal constraints, subject matter of contracts, grievance procedures, and arbitration. Prerequisite: MB561.

MB681 Marketing Management
(3,0) 3

Decision-making activities of marketing and consumer selection; promotional sales force management; pricing; distribution channels. Emphasis is placed on the growing fields of international marketing and behavioral science. Prerequisite: MB581.

MB687 Advertising Management
(3,0) 3

An analysis of ways promotion techniques are applied to marketing-related activities. The focus

is on the entire promotion mix and to include areas associated with solving problems regarding the mix and various media. The course will examine how areas like consumer behavior, the competitive climate and the legal environment may have an impact on decision-making. Prerequisite: MB581.

MB691 Independent Study
(1-3,0) 1-3

Independent study and seminar; individual student guidance by faculty member for selected research topics in business. Prerequisites: Admission to graduate program and approval of program coordinator.

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.

MA089 Pre-Algebra
(3,0) 3

Arithmetic operations, fractions, decimals, proportions, percentages, descriptive statistics and elementary geometry. Grading in this course is credit/no credit. Credit in this course does not apply toward graduation. Prerequisite: None (Completion and content of the set of courses MA081, MA082, and MA083 are equivalent to those of MA089.)

MA090 Introductory Algebra
(3,0) 3

Elementary algebra including equations, inequalities, problem solving, polynomials and operations, graphing, systems of equations and radical expressions. Grading in this course is credit/no credit. Credit in this course does not apply toward graduation. Prerequisite: Completion of MA083 or MA089 or placement by examination. (Completion and content of the set of courses MA084, MA085, and MA086 are equivalent to those of MA090.)

MA092 Intermediate Algebra
(4,0) 4

Algebra for students who have not had second-level high school algebra or who need a refresher course in that level of algebra. Real numbers and operations, solving and graphing first degree equations and inequalities, solving systems of equations and quadratic equations, algebra of polynomials, radical and rational expressions and equations, exponential and logarithmic functions. Prerequisites: One year of high school algebra and MA086 or equivalent/satisfactory score on ACT or Placement Exam. Credit in this course does not apply toward graduation.

MA103 Number Systems and Problem Solving
(3,2) 4

General notions of problem solving. Sets, functions, numeration systems and number theory. Properties and operations of whole numbers, integers, fractions and decimals. Prerequisite: 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: MA103 with a grade of "C" (2.00) or better.

MA109 Trigonometry and Vectors
(2,0) 2

Trigonometric functions of a right triangle and of real numbers, graphs of trigonometric functions,

identities, inverse trigonometric functions, vectors and complex numbers. Prerequisite: 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 Algebra for Technologists
(4,0) 4

Algebra for students of science and technology. Algebraic operations, functions and graphs, factoring and fractions, quadratic equations, exponents and radicals, complex numbers, exponential and logarithmic functions, systems of linear equations, determinants and matrices, analytic geometry. Prerequisites: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam or MA092 with a grade of C or better. This course will not count toward a major or minor in mathematics.

MA141 Technical Calculus I
(4,0) 4

The derivative and procedures of differentiation, integration and applications of integration, derivatives of trigonometric and inverse trigonometric functions, exponential functions, and logarithmic functions. Prerequisites: MA109 and MA140 each with a grade of C or better. High school trigonometry may be substituted for MA109 with instructor approval.

MA142 Technical Calculus II
(4,0) 4

Integration of trigonometric, exponential and logarithmic functions methods of integration, partial derivatives and double integrals, polar coordinates, curve fitting, series expansion of functions, using Maclaurin, Taylor, and Fourier Series. First- and second-order differential equations and Laplace transform methods. Prerequisite: MA141 with a grade of C or better.

MA143 Calculus for Engineering I
(3,2) 4

Limits and continuity, differentiation, derivative applications, integration. Analytical, graphical and numerical approach with emphasis on engineering applications. Prerequisites: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Test, or MA140 with a grade of C or better. One-half year of high school trigonometry or MA109 with a grade of C or better. MA150 with a grade of C or better will also suffice.

MA144 Calculus for Engineering II
(3,2) 4

Applications and techniques of integration, calculus of transcendental functions, infinite series. Emphasis on engineering applications. Prerequisite: MA143 with a grade of C or better.

MA150 Precalculus Mathematics
(4,0) 4

Basic theory of functions including polynomial, exponential, logarithmic and trigonometric functions. Inequalities, topics from analytic geometry and plane trigonometry. Provides the essential background for calculus and subsequent upper-level mathematics. Prerequisites: Two years of high school algebra and one year of plane geometry and equivalent/satisfactory score on ACT or Placement Exam, or MA092 with a grade of C or better. Courses in trigonometry and analytic geometry are recommended. This course will not count toward a major or minor in mathematics.

MA151 Calculus I
(4,0) 4

Limits, continuity, differentiation, applications of the derivative, integration, applications of the definite integral. Prerequisites: High school mathematics which 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 MA150 with a grade of C or better.

MA152 Calculus II
(4,0) 4

Logarithm and exponential functions, inverse trigonometric functions, techniques of integration, improper integrals, L'Hopital's rule, infinite series, conic sections, polar coordinates, parametric equations. Prerequisite: MA151 with a grade of "C" or better.

MA207 Principles of Statistical Methods
(3,0) 3

Descriptive statistics, probability distributions (including normal, binomial and chi-square), techniques of statistical inference including tests of hypotheses and selected nonparametric tests. (This course is a survey of elementary statistical

concepts.) Prerequisite: 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 MA142 or MA112 (latter course with permission of instructor only).

MA216 Discrete Mathematics and Problem Solving
(3,0) 3

Selected topics from discrete mathematics including fundamental counting principles, recurrence relations and an introduction to graph theory. A strong emphasis is placed on fundamental problem-solving techniques. Prerequisite: MA215.

MA240 Mathematics for Automated Systems
(3,0) 3

Applied linear algebra and vector algebra, Laplace transform methods for solution of first- and second order linear differential equations. Spherical and cylindrical coordinate systems, graphing of kinematic quantities. Pre- or co-requisite: MA142.

MA243 Calculus and Linear Algebra for Engineers
(3,2) 4

Conic sections, parametric equations, polar coordinates, vectors, vector-valued functions, functions of several variables, partial differentiation and multiple integration. Matrix algebra and determinants. Introduction to differential equations. Emphasis throughout the course on engineering applications. Prerequisite: MA144 with a grade of C or better.

MA251 Calculus III
(4,0) 4

Three-dimensional space, vectors, vector-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: CS111 and either MA142 or MA152.

MA290 Independent Study in Mathematics
(1-4,0) 1-4

Special studies and/or research in mathematics for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the department head. This course may be repeated for a maximum of eight credits. Prerequisites: Sophomore standing or higher and permission of instructor.

MA305 Computational Linear Algebra
(3,0) alternate years 3

Introduction to matrix algebra and vector spaces. An examination of the topics of linear algebra, with an emphasis on computational aspects. Applications of matrices and linear algebra in the natural and social sciences. Prerequisites: CS111, and either MA112, MA141 or MA151.

MA308 Probability and Mathematical Statistics
(4,0) 4

An introductory course in probability and mathematical statistics. Probability, probability distributions, mathematical expectation, moment generating functions and the Central Limit Theorem. Prerequisite: MA142 or MA152.

MA309 Applied Statistics
(3,0) 3

A continuation of MA308 including estimation of parameters, testing hypotheses, nonparametric methods, analysis of variance, multiple regression and an introduction to statistical software packages. Prerequisite: MA308.

MA310 Differential Equations
(4,0) 4

Differential equations of first order, linear differential equations of second and higher orders, including LaPlace transformation. Introduction to power series methods, applications. Prerequisite: MA152.

MA321 History of Mathematics
(3,0) alternate years 3

Selected topics in the development of mathematics from the time of the ancient Babylonians and Egyptians to the 20th century. Prerequisites: MA152 and MA215.

MA325 College Geometry
(3,0) alternate years 3

Selected topics in geometry, including some or all of the following: Modern elementary geometry, transformations, Euclidean constructions, dissection theory, projective geometry, introduction to non-Euclidean geometry, and problems in foundations of geometry. Prerequisites: MA152 and MA215.

MA341 Abstract Algebra I
(3,0) alternate years 3

An introduction to congruencies, groups, subgroups, quotient groups, fundamental homomorphism theorems, Sylow theorems. Prerequisite: MA215.

MA342 Abstract Algebra II
(3,0) on demand 3

A continuation of MA341 including rings, integral domains, ideals, quotient rings, the natural homomorphism, fields and polynomial rings. Prerequisite: MA341.

MA343 Differential Equations for Engineers
(3,2) 4

First- and second-order differential equations; Laplace transformations; systems of differential equations; Fourier series methods. Emphasis on engineering applications. Prerequisite: MA243 with a grade of C or better.

MA351 Graph Theory
(3,0) alternate years 3

Selected topics in graph theory, including connectivity, matchings, edge and vertex colorings, networks and tournaments. Prerequisite: MA216.

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: Jr/Sr standing, a course in computer programming, and mathematical maturity at the level of MA305, MA308 or MA310.

MA411 Advanced Calculus
(3,0) alternate years 3

An extension of the calculus in one, two, and three dimensions leading to the formulation and solution (in simple cases) of the partial differential equations of mathematical physics. Differential and integral calculus of vectors, divergence, curl, line, surface and volume integrals, Green's divergence and Stokes' theorems, heat and wave equations, Fourier series, orthogonal sets, boundary value problems, separation of variables. Prerequisite: MA251.

MA413 Introduction to Complex Analysis
(3,0) on demand 3

The calculus of functions of a complex variable, algebra and geometry of complex numbers, elementary functions, limits, derivatives, Cauchy-Riemann equations, integrals, Cauchy integral theorem, series, singularities, residue theorem. Prerequisite: MA251.

MA421 Real Analysis I
(3,0) alternate years 3

An examination of some of the foundations of the calculus, including basic topology of the real line, limits, continuity, metric spaces, function spaces, some uniformity concepts. Prerequisites: MA215 and MA251.

MA422 Real Analysis II
(3,0) on demand 3

Continuation of MA421 with emphasis on measure and integration. Prerequisite: MA421.

MA490 Research Topics in Mathematics

(1-4,0) 1-4

Special studies and/or research in mathematics for individuals or small seminar groups. Course content to be arranged with instructor and with approval of the department head. This course may be repeated for a maximum of eight credits. Prerequisite: Junior standing or higher and permission of instructor.

MECHANICAL ENGINEERING

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

ME110 Manufacturing Processes I

(2,3) 3

Capabilities and limitations of machines and processes for production planning and designing machinery, mechanical parts and systems. Prerequisite: none.

ME115 Manufacturing Processes II

(2,3) 3

Continuation of ME110. Contains advanced topics on capabilities and limitations of machines and processes for production planning and designing machinery, mechanical parts and systems. Prerequisite: ME110.

ME140 Computer-Aided Drafting and Geometric Dimension and Tolerancing

(CAD AND GD&T)

(4,1) 4

Basic computer-aided drafting (CAD) (2-D) and (3-D) drawing, editing and dimensioning techniques are covered as well as GD&T terms, definitions and rules. Students create their own GD&T symbols library and use it to make engineering drawings using CAD commands and GD&T principles.

ME225 Strength of Materials

(3,0) 3

A study of stress analysis and measurements. Topics include axial, shear, torsion, bending stresses, axial strains, shear strains, Poisson's ratio, Hooke's law and the transformation of stresses and strains. Deflection of beams and buckling of columns are also treated. Prerequisite: EM220. Prerequisites or corequisites: EG265 and MA144.

ME275 Engineering Materials

(2,3) 3

Physical structure of engineering materials, properties, testing and applications. In the laboratory, the student will prepare and analyze the microstructure of various specimens. Prerequisite: CH108; prerequisites or corequisites: ME225 or MT225

ME335 Fluid Mechanics

(3,1) 3

Theory and applications of principles of fluid mechanics with emphasis on problem solving. Fluid statics, kinematics, continuity, energy and momentum problems are covered. Dimensional analysis and pipe flow problems are treated. Prerequisites: EM220 and MA144.

ME336 Thermodynamics I

(3,0) 3

Theory and applications of thermodynamics. First and second laws of thermodynamics, energy conversion, properties of working substance, processes and cycles. Corequisite: ME335.

ME350 Machine Design I

(3,3) 4

Design and selection of machine components and power transmission units. Topics covered include curved beam theory, Castigliano's theory, static failure, impact and fatigue. Stress analysis in the laboratory will include strain gages, uniaxial testing machines, deflections and buckling of beams and report writing. Prerequisites: ME225, ME275 and EM220.

ME425 Vibration

(3,3) 4

An introductory course to vibrations analysis, including free, forced and damped vibrations of one degree of freedom systems. Selected topics on machine balancing, monitoring and noise control will be covered. Prerequisites: EM320 and MA343.

ME430 Thermodynamics II and Heat Transfer

(3,3) 4

Continuation of ME336. In addition, fundamentals of steady state, and transient heat conduction, convection and radiation are covered. Design and analysis of heat exchangers are also treated. Prerequisite: ME336.

ME440 Solid Modeling and Animation

(3,0) 3

Theory and application of three-dimension computer-aided drafting. Emphasis will be placed on assembly drawings and presentation. Prerequisite: ME140.

ME442 Finite Element Analysis

(3,3) 4

This course will cover the fundamentals of finite element analysis. Topics include: modeling elements, boundary conditions, loading, convergence and an introduction to modal analysis. Commercial software will be used in the laboratory along with 3-D mesh generation. Prerequisite: ME350.

ME455 Machine Design II

(3,3) 4

A continuation of ME350. Topics on design of fasteners, welds, gears, bearings, brakes, clutches, and shafts are covered. Lab material includes experiments on photoelasticity, fatigue, and computer simulations. Prerequisite: ME350.

MUSIC

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

MU110 through MU161 (except MU120 and MU121) and MU250 and MU251 count as humanities for general education.

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.

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. Counts as humanities credit for general education requirements.

NATIVE AMERICAN STUDIES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NA141, 142, 201 and 202 taught at Algoma University.

NA141 Ojibwe I, Aniishnaabemowin
(4,1) 4

Introduction to the Ojibwe language's vocabulary, phonics and grammar. This course is designed to acquaint the student with the

minimum essentials of oral and written Ojibwe. This course serves as the foundation for further study in the Ojibwe language and culture. Students will begin to learn to read Ojibwe text. Students will learn to express themselves orally and gain the necessary knowledge and skill that will prepare the student for Ojibwe conversation.

NA142 Ojibwe II, Aniishnaabemowin
(4,1) 4

Further study on Ojibwe language vocabulary, phonics, grammar and elementary conversation. This course is designed to further acquaint students with the minimum essentials of oral and written Ojibwe. This course rounds out the foundation for further study in Ojibwe language and culture. Students will continue to learn to read Ojibwe text, express 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, Aniishnaabemowin
(4,1) 4

Further study in Ojibwe language with particular focus on Ojibwe conversation. This course will equip students with the essentials of oral and written Ojibwe. This course rounds out the foundation for further study in the Ojibwe language and culture. Students will continue to learn to read Ojibwe text, express themselves orally and gain the necessary knowledge, skill and practice which will prepare the student for Ojibwe conversation and elementary writing. 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 Anishinaabe (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 Anishinaabe 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

An overview of Native American literature including myths, poetry, biographies, legends and stories from recognized Indian and non-Indian authors. The significance of Indian philosophy found in such literature will be emphasized. Prerequisite: EN210 or EN215. 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.

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.

NATURAL SCIENCES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

NS101 Conceptual Physics
(3,1) 3

A survey of basic physical science principles emphasizing their applications in daily life. Prerequisite: 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. 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. Prerequisite: MA086 or equivalent/satisfactory score on ACT or Placement Exam.

NS119 Descriptive Astronomy**(3,1) 3**

Introductory course with a balanced, comprehensive account of contemporary astronomy with emphasis placed on the broad principles of astronomy rather than on a chronological or historical framework. Prerequisite: 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 I**(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 philosophy, the nursing process, human needs, stress adaptation, legal/ethical issues, nursing research, nursing theory, teaching-learning, and other topics relevant to the practice of professional nursing.

NU212 Health Appraisal**(2,3) 3**

An introduction to nursing assessment component of the nursing process as a method of determining a well individual's health potential and status across the lifespan. Emphasis is on obtaining a health history, performing a nursing assessment and formulating a nursing diagnosis. Prerequisites: PY155, HE208 and BL122. Corequisite: HE232 and NU211.

NU213 Fundamentals of Nursing**(3,6) 5**

Theoretical and clinical foundation upon which nursing is applied to individual client experiencing common health stressors. Emphasis: Forming nursing diagnoses derived from human needs theory and implementation of both appropriate nursing interventions and related psychomotor nursing skills. Responsibilities as a health team member and as a self-directed learner are also considered. Prerequisites: NU110, NU211, NU212, HE208, HE232 and PY155. Corequisites: HE209, BL223.

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 Parent/Newborn Nursing**(3,6) 5**

Theoretical and clinical foundation for care of the child-bearing family using family-centered approach. Emphasis: Teaching and health promotion. Stress adaptation and self-care theories used to help clients cope with stressors encountered during child-bearing cycle. Prerequisites: BL223, NU213, HE232, HE209 and PY155.

NU326 Parent/Child Nursing**(4,6) 6**

Theoretical and clinical foundation for application of nursing process in caring for children and their families. Emphasis: Health promotion, maintenance and restoration with application of principles and concepts related to growth and development, family theory and stress adaptation. Prerequisites: BL223, NU213, HE232, HE209 and PY155.

NU327 Adult Nursing I**(4,12) 8**

Combined theory and clinical laboratory with concepts of stress adaptation related to common health alterations in each of the basic human need areas. Nursing clinical experience is primarily in secondary care settings for adult

clients. Prerequisites: BL223, NU213, HE209, HE232 and PY155.

NU360 Professional Nursing Concepts**(4,0) 4**

This four-credit course is the transitional course into professional nursing for the practicing registered nurse. Professional concepts of socialization, social responsibility, professionalism and professionalization, health promotion, change, and teaching/learning are the foci of the course. Additionally, the history of nursing, ethics, culture and critical thinking are interwoven in the exploration of the concepts.

NU363 Comprehensive Health Appraisal**(2,3) 3**

Application of theories from nursing and related sciences to health appraisal of the individual through the lifespan. Emphasis on principles of comprehensive history taking and physical assessment skills. Pre- or co-requisite: NU360.

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. Prerequisites: SO101; acceptance into RN-BSN completion program.

NU431 Adult Nursing II**(4,12) 8**

This is a theory and clinical laboratory course focusing on application of the nursing process in care of the adult client with multiple health stressors. Basic human needs theory and concepts of stress/adaptation, health promotion, health maintenance, health restoration and teaching-learning are applied. The student collaborates with the health team and applies theory and principles of leadership and management in providing care in secondary and tertiary care settings. Prerequisites: HE352, NU325, NU326 and NU327. Corequisite: NU435.

NU432 Community Health Nursing**(3,6) 5**

Theoretical and clinical foundation in community health nursing. The nursing process is applied to communities, groups, families and individuals. Content includes the application of public health nursing principles, levels of prevention and epidemiology. Expands the roles of the nurse as teacher, collaborator, advocate and direct care provider. Examines health care delivery trends and issues. Prerequisites: HE352 and all required junior-level nursing courses.

NU433 Mental Health Nursing**(3,6) 5**

Theoretical and clinical foundation in mental health nursing. Emphasis is on the use of the therapeutic relationship and communication skills to help clients cope with stressors of life experiences. Nursing, human needs theory, family theory, stress adaptation theory and developmental theory are used to help the client achieve optimum level of mental health. Prerequisites: HE352 and all required junior-level nursing courses.

NU434 Nursing Research
(3,0) 3

Focus is on the ethics, methods, evaluation of research studies and consideration of application of nursing research findings in delivery of health care. Students discuss and evaluate nursing research studies and develop and present sections of a research proposal. Prerequisites: PY210 or MA207 and all required junior nursing courses, or NU360 for BSN completion students.

NU435 Management in Nursing
(3,0) 3

Analysis of the leadership and management roles in professional nursing; focus is leadership/management theories basic to the planning, organizing, directing and controlling of nursing services in health care settings. Includes concepts of continued quality improvement, risk management, performance appraisal, employee relations. Prerequisite: NU360 (for BSN Completion). Corequisite: NU431 (for four-year program).

NU436 Contemporary Issues in Nursing
(2,0) 2

Analysis of issues involving the professional nurse. Explores role socialization from student to professional nurse. Selected social, ethical, economic and legal issues will be examined. Prerequisites: All required junior nursing courses or NU360 for BSN completion students.

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 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 EN210 or EN215.

PHILOSOPHY

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

PL204 Introduction to Philosophy
(3,0) 3

A study of selected philosophical problems and of methods and ways to answer them. Counts as humanities credit for general education requirement. Prerequisite: EN210 or EN215.

PL205 Logic
(3,0) 3

An introductory course in logic; study of the role of logical methods of the rational approach to knowledge; consideration of such concepts as definition, implication, inference, syllogism, deduction. Counts as humanities credit for general education requirement. Prerequisite: EN210 or EN215.

PL302 Ancient Western Philosophy
(3,0) 3

A study of the origins and the development of Greek and Roman philosophy from the pre-Socratics to the early Christians. Counts as humanities credit for general education requirement. Prerequisite: EN210 or EN215.

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: MA109, and either MA111 or MA140.

PH222 Elements of Physics II
(3,2) 4

Vibrations and waves, electricity and magnetism, optics, relativity and modern physics. Prerequisite: PH221 with a grade of C or better.

PH224 Topics in Physics for Electrical Technology
(3,2) 4

Vibrations and waves, optics, relativity and modern physics (identical to PH222). Electricity and magnetism topics of particular relevance to electronic engineering technology. Prerequisites: PH221 with a grade of C or better, sophomore standing in EET coursework, and MA141 (which may be taken concurrently).

PH231 Applied Physics for Engineers and Scientists I
(3,2) 4

An introductory course in rigid body mechanics and fluid mechanics using calculus 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.

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

(1,0) 1

This course includes required participation in the model United Nations program, in which students represent specific countries and become familiar with their background and politics. The goal is an understanding of how the United Nations functions. May be repeated for up to a total of four credits, but no more than two credits may be counted toward a political science major or minor. Prerequisite: Permission of 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.

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.

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.

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.

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
(3,0) 3

The first course in a capstone sequence required of all political science majors. The course examines the history of political science and public administration and reviews contemporary approaches and recent research. Students prepare a research proposal to be carried out in PS492. Prerequisites: Political science major and senior standing.

PS492 Senior Seminar II
(3,0) 3

Completion of the research project begun in PS491. Students will make oral presentations of their project results at the end of the course to other students, faculty and invited guests. Prerequisite: PS491.

PS499 Political Science/Public Administration Internship
(1,9 - 27) 3-9

Students arrange, with the assistance and approval of the instructor, a supervised work experience in a governmental, community or nonprofit organization. Students perform professional tasks under the supervision of agency personnel. The students' review and evaluation of the work experience is under the direction of the instructor. Permission of the instructor required by the seventh week of the preceding semester. Course may be repeated to a maximum of nine credits.

PS601 Foundations of Public Administration
(3,0) 3

Introduction to public administration by providing an overview of the central issues, values and problems associated with the field. Through the use of the case study method,

public administration will be examined as the operation of government entities.

PS603 Human Resource Management
(3,0) 3

This course provides students with an understanding of the evolution, processes and problems involved in the administration of public personnel systems in the United States. This course examines the selection and management of personnel in public organizations; evolution and development of merit systems; effects of municipal unionization and collective bargaining on personnel programs in the public sector and accountability and productivity of public employees.

PS608 Research Methods in Public Administration
(3,0) 3

This course provides a survey of research methods used in public and non-profit organizations and emphasizes the development of a research design. The topics covered include survey research techniques, experimental and quasi-experimental designs, and qualitative research methods. Prerequisite: undergraduate statistics course.

PS625 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.

PS630 Public Policy Analysis and Evaluation
(3,0) 3

Examines the process of developing public policies and evaluating their implementation. Several policy areas (e.g., criminal justice, education, health care, etc.) will be reviewed. Prerequisite: MB608 or PS608.

PS655 Contemporary Issues in Public Administration
(1-3,0) 1-3

This seminar examines selected issues and problems related to public administration. The content of this course may vary each time it is offered, depending on the topics selected. May be repeated with the permission of the instructor. Maximum of six credits.

PS695 Applied Research Project
(4,0) 4

This capstone course requires the student to complete a research project associated with their field of interest in public administration. The research projects will require the development of a research proposal and the gathering, analysis and presentation of data. Prerequisite: PS608.

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
(3,0) 3

An examination of the basic research methods employed in the social sciences with emphasis on the experiment. Topics: Epistemology, laboratory experiments, field experiments, survey construction, correlational research. Students will each participate as a subject and an experimenter, collect data, analyze data, and write a laboratory report according to the editorial style of the American Psychological Association. Prerequisites: PY101 and PY210 or MA207.

PY217 Social Psychology
(3,0) 3

Topics include attitude formation and change, interpersonal attraction, aggression, altruism, conformity and environmental psychology.

PY228 Organizational Behavior
(3,0) 3

An introduction to the theories, principles and practices of organizational behavior within the workplace. May be used for sociology credit.

PY240 Behavior Management
(3,0) 3

Systematic introduction to behavioral concepts and techniques. Self-management applications and behavioral assessments in applied settings serve as practical lab experiences.

PY259 Abnormal Psychology**(3,0) 3**

This course is a systematic investigation of the identification, dynamics and treatment of deviant and maladaptive behavior.

PY265 Child and Adolescent Development**(3,0) 3**

Psychological development of the child through adolescence. Social, emotional and intellectual development are covered, with consideration of genetic, prenatal and postnatal influences. Prerequisite: PY101 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, additions 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.

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.

RC342 Disabilities Seminar in Therapeutic Recreation

(3,0) 3

An extensive survey of disabling conditions which the therapeutic recreation specialist may encounter. Emphasis will be placed on incidence, characteristics, etiology, restrictions to involvement and most current research. Class will be taken on a student research/presentation format. Prerequisite: RC240.

RC344 Recreational Pursuits and Disabling Conditions

(3,0) 3

A study of specialized recreational and athletic opportunities available to individuals with disabling conditions; such opportunities will be presented as potential activities to be included as part of comprehensive therapeutic recreation services. Practical applications will be encountered. Prerequisite: RC342.

RC346 Clinical Issues and Practice in Therapeutic Recreation

(2,4) 3

Through a combination of directed fieldwork and classroom instruction, students will begin to apply therapeutic recreation theory and program development to the clinical environment. Issues of professional development, confidentiality, assessment, documentation and evaluation will be covered. Prerequisites: RC340 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.

RC435 Problems and Issues in Therapeutic Recreation

(3,0) 3

This course will serve as a culminating educational component for the student majoring in therapeutic recreation and recreation management. The course will focus in part on current problems and issues in therapeutic recreation and will also have a major emphasis on developing an original research project. Prerequisites: RC346, PY210.

RC436 Therapeutic Recreation and Leisure Science Research

(2,0) 2

This course is the second part of a two-part research sequence required by therapeutic recreation and recreation management majors. This course will focus upon research methodology associated with implementing a research project, collecting data, data analysis and presentation. Current state, national and global issues and trends in the recreation field will also be presented. Prerequisite: RC435.

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.

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 handicap-ping. The course will involve theory as well as practical experience.

RA106 Backpacking (0,2) 1

Introduction to equipment, safety precautions, environmental concerns and skills needed to successfully backpack. Class will experience a weekend backpacking trip.

RA107 Canoe Techniques (0,2) 1

This course will introduce the student to the basic strokes and canoe safety associated with flat water canoeing.

RA108 Outdoor Survival (0,2) 1

This class will focus on the appropriate strategies to employ to avoid a survival situation. It will also expose the student to various techniques and strategies to employ should they find themselves "lost" or unexpectedly spending several days and nights in the out-of-doors.

RA109 Rock Climbing and Rappelling (0,2) 1

This course will introduce the student to the components associated with top rope climbing and rappelling. The student will become familiar with equipment, knots, setting up a safe site, terminology and technique.

RA110 Golf (0,2) 1

This course is designed to provide the beginning golfer with the fundamentals of the activity and to further play as a lifetime recreational activity.

RA114 Self Defense (0,2) 1

This course is designed to introduce the student to the philosophy, concepts and various strategies associated with the martial arts. Physical and mental conditioning and physical techniques associated with the art of self defense will be presented and practiced.

RA119 Cross Country Skiing (0,2) 1

This course will introduce the student to the sport of cross country skiing. Emphasis will be placed on basic skill development, equipment selection, maintenance of equipment and the enjoyment of winter and the beauty it has to offer. The majority of class time will be spent skiing; class instruction will occur during the ski, usually on a one-to-one basis to meet the needs of the student.

RA125 Tennis (0,2) 1

This course is intended to develop each student's present knowledge and skills in order that they will be able to pursue tennis as a lifetime leisure activity.

RA127 Volleyball (0,2) 1

This course is designed to develop basic skills and progression in power volleyball. Conditioning, drill, game tactics and rules will be practically applied.

RA129 Basketball (0,2) 1

This course is designed to expand each student's present knowledge and skill specific to skill execution, game play, game strategy and rules. May not be repeated for credit. Not available for credit to any student/athlete playing intercollegiate basketball.

RA130 Intercollegiate Sports Skills (0,2) 1

Will meet as directed by instructor. The course is designed for student-athletes involved in intercollegiate athletics. It provides the opportunity to develop advanced skills in their respective sports. The course may be taken two times for a total of two credits. It may be taken only once per academic year and only during the term in which the student-athlete is participating in an intercollegiate sport.

RA150 Individualized Physical Fitness (0,2) 1

This class is designed to enable the student to discover his or her own level of fitness and develop and implement an exercise program that will address personal fitness concerns. Central to this process is introducing the student to various aspects of a balanced fitness program and providing personal assistance to the student in selecting beginning fitness goals and appropriate progression of those goals.

RA151 Jogging for Fitness (0,2) 1

Introduction to jogging as a means of developing physical and mental fitness. Development of an activity ideal for lifetime leisure involvement.

RA152 Orienteering (0,2) 1

The focus of this class will be to introduce the student to map and compass reading skills and techniques associated with coordinating their use. It will also introduce the student to the competitive sport of orienteering.

RA153 Weight Training (0,2) 1

This class is designed to familiarize each student with basic weight training knowledge. The student will become familiar with muscular systems, functions, and safe and effective ways to organize and implement a weight training routine.

RA160 Adapted Activities (0,2) 1

Leisure activities adapted to meet the needs of students with disabilities. Emphasis on walking, jogging and aquatics. (May be repeated for credit.)

RA173 Social Dance (0,2) 1

This course is designed to provide participants with a broad range of dancing patterns and rhythmic skills. Through social interaction, the following social dances will be learned: Mixers, round dance, square dance and ballroom dance.

RA174 Aerobic Dance (0,2) 1

This course will provide the student with an opportunity to become involved in a structured aerobic dance program. The purpose of this type of programming is to improve an individual's physical fitness through rhythmic and dance activities.

RA180 Beginning Skating (0,2) 1

The students will be provided with an opportunity to learn the basic fundamentals of skating and to gain sufficient knowledge of the sport so that they may continue to enjoy and improve for the rest of their lives.

RA194 Scuba (0,2) 1

This course is designed to introduce the student to the appropriate and safe use of self-contained underwater breathing apparatus.

RA195 Beginning and Advanced Beginning Swimming (0,2) 1

Course meets in pool two hours a week. Mostly lab work but some lecture. Students cover material in Red Cross beginner and advanced beginner courses and receive certification in one or both depending on skill level attained.

RA196 Intermediate and Advanced Swimming (0,2) 1

Course meets in pool two hours a week. Mostly lab work but some lecture. Students cover

material in Red Cross Intermediate and Swimmer courses and receive certification in one or both depending on skill level attained. Prerequisite: Red Cross advanced beginner certification or equivalent skills.

RA197 Physical Fitness for Law Enforcement
(0,3) 1

This course will provide Senior criminal justice students enrolled in the Michigan Law Enforcement Officers Training Council certification track with the opportunity to maintain their physical prowess and to prepare for the state physical ability test. Prerequisite: Senior criminal justice students enrolled in the MLEOTC track.

RA210 Lifeguarding
(0,4) 2

Course meets in pool four hours a week. Mostly lab work, some lecture. Students cover material in Red Cross Basic and Emergency Water Safety course and Red Cross Lifeguarding course. Students receive certification in one or both depending on skill level attained. Either certificate qualifies students to take water safety and lifeguarding instructor course, RA211. Prerequisite: Red Cross intermediate swimming certificate or equivalent skills.

RA211 Water Safety and Lifeguard Instructor
(0,4) 2

Course meets four hours a week, 70 percent of the time in the pool and 30 percent of the time in the classroom. All students cover material in Red Cross water safety instructor course and do a teaching practicum at the Lake Superior State University pool. Those students entering with a current lifeguarding card may also cover lifeguarding instructor material. Prerequisites: Current Emergency Water Safety or Lifeguarding certificate.

ROBOTICS AND CONTROL SYSTEMS

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

RS280 Robotics Technology
(2,3) 3

Introduction to the field of robotics technology. Topics include: LC Robotics applications in the manufacturing and service industries, classification of robot systems, robot anatomy, robot control systems, robot end effectors, robot sensors, robot hardware and software, robot cell design, and sociological, economical and management issues in robotics. Laboratory exercises involve programming industrial robots and robot systems integration using programmable logic controllers. Prerequisite: MA140, MA109 and CS101.

RS365 Programmable Logic Controllers
(2,2) 3

An introduction to the use of programmable logic controllers (PLC). Basic components of the PLC along with the interface to hydraulic/pneumatic systems and sensors will be discussed. Some higher-level functions such as

zone control, master control and sequencers will also be covered. Written business communications are an integral part of the course. Prerequisites: EE210, EG101 and ME140.

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, EG265 or CS105, RS280 or RS385, and one of the following: EE310, EE305, or RS365 and EE125.

RS435 Automated Manufacturing Systems
(3,3) 4

A study and analysis of the components of an automated manufacturing system. Topics included analysis of flow lines, automated assembly systems, materials handling and storage systems, group technology, production electronics, and CIM. Course work will include applications of manufacturing systems software including factoring simulation. Laboratory work will focus on systems integration, advanced programming of industrial robots, and flow line automation. Prerequisites: MA343 and 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: MA343, EM220, and EE210 or equivalent.

RS480 Control Systems and Automation
(3,3) 4

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. Laboratory work in control systems will focus on the study of system stability and response using position and velocity feedback servo controlled systems. Laboratory work in automation includes: programming of industrial robots, systems integration projects and manufacturing software

applications. Prerequisites: RS280, MA143, MT225, and ET175 or EE210.

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.

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
(3,0) 3

Examines the social nature of humans, exploring both the influence of social structures upon

behavior and the process by which people create social structures; symbolic interactionist theory explained. Prerequisite: SO101.

SO242 Sociology of Sex
(3,0) 3

Socio-psychological study of the impact of human sexuality upon human behavior.

SO302 Statistics for Social Science
(4,0) 4

The social foundation of statistical inference is discussed and elementary statistical concepts are introduced through numerical problems: Z scores, t-test, chi square, correlation, ANOVA, etc. Prerequisite: 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.

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, SO303; GPA of 3.0 or higher.

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.

SO403 Development of Sociological Theory
(3,0) 3

A critical analysis of the contributions to sociological theory by Comte, Spencer, Marx, Durkheim, Pareto, Weber and others.

SO405 Seminar: Current Sociological Issues
(3,0) 3

Contemporary issues in sociology, to vary from year to year. Extensive reading, writing, and discussion expected. Prerequisites: Junior standing and 12 hours in sociology.

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) 4

Introduction to basic Spanish grammar and vocabulary, designed to acquaint the student with the essentials of oral and written Spanish.

SP162 First Year Spanish II
(4,1) 4

Further study of Spanish grammar and vocabulary; emphasis on oral communication; reading of various materials in Spanish with the aim of understanding the meaning, enlarging the vocabulary and using Spanish for communication. Prerequisite: SP161 or equivalent.

SP165 Spanish for Public Safety
(4,1) 4

A continuation of SP161, with emphasis on vocabulary relevant to work in criminal justice. Prerequisite: SP161 or equivalent.

SP261 Second Year Spanish I
(4,1) 4

Intensive review of grammar and further vocabulary development. Emphasis on composition and conversation based on the reading of Spanish texts and newspapers. Prerequisite: SP162 or equivalent.

SP262 Second Year Spanish II
(4,1) 4

Conducted as much as possible in Spanish with the primary aim of dealing fluently with basic conversation situations. Prerequisite: SP261 or equivalent.

SP305 Spanish Literature in Translation I
(3,0) 3

From the Medieval period through the works of Miguel de Cervantes. The course is taught in English and the readings are in English. This course counts as humanities credit for general education requirement.

SP306 Spanish Literature in Translation II
(3,0) 3

Representative 18th, 19th and 20th century Spanish works and some representative Latin American works. The course is taught in English and the readings are in English. This course counts as humanities credit for general education requirement.

SP361 Advanced Spanish I
(4,1) 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) 4

A continuation of SP361. Prerequisite: SP361 or equivalent.

SP365 Directed Study
(1,4) 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.

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.

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.

SD616 Advanced Communication in Leadership
(3,0) 3

A graduate-level course on communication issues in organizational leadership. Contemporary theories of leadership are viewed in the context of their intellectual lineage, with particular attention to the relative centrality of communication in the theories and research leading up to the current state of the art. Both quantitative and qualitative research literature are reviewed, with an eye toward rendering the student conversant with the major schools of thought reflected in contemporary leadership practice. Communication strategies for the achievement of specific leadership goals and for implementation of organizational change are explored.

STUDENT SERVICES

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

SA090 Developmental Reading I
(2,2) 3

A combination of lectures, activities and labs provide information and experiences needed to help eliminate inefficient reading habits and develop better reading skills. Emphasis is placed on reading/study strategies, comprehension, reading rate/flexibility, vocabulary, and concentration and memory improvement. Labs are individualized to accommodate the student's needs based on assessment tests. This course is required of those students who score below the reading proficiency level on the ACT or college placement test.

SA091 Developmental Reading II
(2,2) 3

This course is a sequel to SA090 for those students who need additional work to meet the minimal reading proficiency requirement. Greater emphasis will be given to the application and practice of critical reading/thinking skills, textbook reading strategies, vocabulary in the disciplines and comprehension. Individualized labs will be based on personal needs. Prerequisite: SA090.

SA100 University Success Strategies
(1,5,0) 1

Based on assessment of individual results of the Learning and Study Skills Inventory (E-LASSI), 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
(3,1) 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 reading rates, comprehension and specialized vocabulary. Prerequisite: satisfactory completion of SA090 or ACT reading score of 19.

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.

TEACHER EDUCATION

Special topics courses will be available as need and interest develop. Consult the semester course schedule for these.

TE150 Reflections on Learning and Teaching (3,0) 3

Students will examine their experiences and assumptions as learners and teachers, contrasting them with psychological, sociological and anthropological theories about learning in and out of school.

TE250 Student Diversity and Schools (3,0) 3

A study of the forms of diversity found among students and how these differences affect participation in schools. Schools are studied in terms of their goals, impact on students and as workplaces for teachers. Course activities include school visits and discussions of classroom teaching. Prerequisite: Sophomore standing.

TE301 Students and the Contexts of Learning (3,3) 4

A study of students and learning as they are affected by social context and sociocultural background including natural and socially constructed differences among learners. Also teaching and learning subject matter within institutional and community contexts. Includes extensive classroom observations. Prerequisites: TE150 and TE250 and admission to teacher certification program.

TE401 Teaching, Learning and Assessment in the Classroom I (3,6) 5

Curriculum, objectives, content, materials, organization, methods and assessment of teaching core subject matter to diverse learners. Includes integrated technology, laboratory and field experiences. Prerequisites: TE150, TE250 and TE301. Requires admission to teacher education program.

TE402 Teaching, Learning and Assessment in the Classroom II (3,9) 6

Continuation of curriculum, objectives, content, materials, organization, methods and assessment of teaching core subject matter to diverse learners. Includes integrated technology, laboratory and field experiences. Prerequisites: TE150, TE250, TE301 and TE401. Requires admission to teacher education program.

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. Six credit hours: one for seminar, five for field/teaching experience, though student will actually spend at least 25 clock hours weekly with a teacher in a school. 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. Six credit hours: one for seminar, five for field/teaching experience, though student actually spends at least 25 clock hours weekly with a teacher in a school. Prerequisites: completion of TE491 and permission and availability of participating schools. Corequisites: TE603 and TE604. May be repeated once.

TE601 Professional Roles and Teaching Practice I (3,0) 3

Teachers' ethical and professional responsibilities. Connections of school to other social agencies. Relationships of teachers to colleagues, families, other social service providers and community leaders. Roles in school governance. Three class contact hours per week of lecture, discussion, clinical. Prerequisite: completion of TE402. Corequisites: TE491 and TE602. May be repeated once.

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 Practice II (3,0) 3

School-agency alliances for fostering student learning. Strategies for working with families and community groups to improve responsiveness of the school curriculum to student needs. Child advocacy in the school and community. Philosophy and reform of education — revisiting the importance of formal education in modern life. Three class contact hours of lecture, discussion and clinical work. Prerequisites: TE491, TE601 and TE602. Corequisite: TE492, TE604. May be repeated once.

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.

UNIVERSITY SEMINAR

UN101 University Seminar I: Foundations for Success (1,0) 1

This course focuses on academic skills and critical thinking, on knowledge of the institution and the role of higher education, and on personal skills for living, which together are requisite for student success and lifelong learning. Seminar I - Foundations for Success places emphasis on incorporation into university culture, time management, use of campus resources, written and oral presentations, development of critical thinking skills, and strengthening study skills for academic success.

UN102 University Seminar II: Developing Critical Thinking (1,0) 1

Seminar II - Developing Critical Thinking continues the goals of Seminar I while placing emphasis on the application of critical thinking skills to the academic setting. A reading anthology is used as the basis for regular written, and oral communication and a term research paper. While continuing to apply skills and techniques used in Seminar I, students additionally develop cultural literacy and incorporate greater computer usage, and explore campus organizations, community events and community service.

UN103 University Seminar III: Thinking About the Discipline (1,0) 1

Seminar III - Thinking about the Discipline begins a more focused examination of the applications of critical thinking to the student's discipline. Each school selects a reading anthology suitable for analysis and discussion by its majors in order to examine such as current critical issues, social responsibility, ethics and cultural diversity from the perspective of the student's discipline. Continuing the activities of earlier seminars this course promotes ongoing participation in community events, application of academic success skills and writing in the discipline.

UN104 University Seminar IV: Professional Seminar (1,0) 1

Seminar IV - Professional Seminar serves as the fourth and final in the series and focuses on introducing the student to their discipline with special emphasis on interviews with professional, examinations of career options, and overviews of the literature and research of their discipline. This course focuses attention on the skills and knowledge base of the profession, features of the work environment, development of resume and career developing activities. Activities of earlier seminars continue as students apply critical thinking skills to the examination of the current literature of their field, participate in written and oral presentations, and hear presentations from working professionals.

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.



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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	1984-85	Margaret Malmberg
1963-64	C. Ernest Kemp	1985-86	Robert Money
1971-72	Margaret Howe	1986-87	Rosa Kavanaugh
1972-73	David Blair	1987-88	Dimitri Diliiani
1973-74	Gerald Samson	1988-89	David Behmer
1974-75	Thomas Mickewich	1989-90	Susan Ratwik
1975-76	Arthur Duwe	1990-91	William Haag
1976-77	Thomas Kelly	1991-92	James Madden
1977-78	Larry Schneider	1992-93	Sally Childs
1978-79	Steven Person	1993-94	Carol Campagna
1979-80	Bernard Arbic	1994-95	Madan Saluja
1980-81	Edeltraute Vialpando	1995-96	Carole Connaughton
1981-82	Timothy Sawyer	1996-97	Paul Duesing
1982-83	Paul Wilson	1997-98	Gary Johnson
1983-84	Michael Flynn		

Employee of the Year

Each year, the University community honors one recipient for two awards: Administrative/Professional Employee of the Year and Educational Support Personnel Employee of the Year. Nominations are gathered from the entire campus. The following individuals exemplify the best LSSU offers to students and the community.

	Administrative/ Professional	Educational Support Personnel
1991-92	Conrad A. Schmitigal	M. Kathy Person
1992-93	Beverly E. White	Trinda M. Pontus
1993-94	Margaret E. Olson	Jeanne E. Thompson
1994-95	Susan K. Camp	Terri D. Peller
1995-96	Robbin S. Manor	Donna M. Payment
1996-97	Karen Shackleton	Judy V. Jones
1997-98	Cheri Castner	Pauline Killips
1998-99	Roger Greil	Patricia Roe

Faculty

Allan, Thomas A., Associate Professor of Biology (1990, 1996); BS 1973, Central Michigan University; MS 1978, Michigan Technological University; PhD 1984, University of Maine.

Andary, Carol, Associate Professor and Coordinator of Legal Assistant Studies (1984, 1993); BS 1977, Western Michigan University; JD 1980, Wayne State University.

Anleitner, Donna, Assistant Professor of Nursing (1985); BSN 1971, Indiana State University; MSN 1976, Northern Illinois State University.

Arbic, Bernard J., Professor of Mathematics (1967, 1986); BS 1962, Massachusetts Institute of Technology; MA 1967, Bowdoin College; PhD 1972, University of Wyoming.

Back, Richard C., Assistant Professor of Biology and Co-Director of the Aquatic Research Lab (1996); BS 1982, Syracuse University; MS 1985, Clemson University; PhD 1993, University of Wisconsin-Milwaukee.

Beckon, Susan E., Assistant Professor of Business and Economics (1996); BA 1985, MBA 1996, Michigan State University.

Boger, Thomas, Associate Professor of Computer Science (1981, 1991); BS 1973, MS 1974, Michigan State University.

Bolio, Lawrence A., Associate Professor of Engineering (1984); BS 1966 and 1975, Michigan Technological University; MS 1979, Northern Michigan University.

Boniferno, Eileen J., Native American Advisor and Instructor (1997); BA 1989, Algoma University College; MA 1994, University of Guelph.

Brown, Lewis M., Professor and Chair of Department of Geology and Physics (1979, 1989); BA 1965,

Cornell College; MS 1967, University of Iowa; PhD 1973, University of New Mexico.

Campagna, Carol A., Associate Professor of Nursing (1984); BSN 1964, D'Youville College; MSN 1969, University of Colorado.

Castner, David G., Associate Professor of Counseling and Chair of Counseling Center (1978, 1979, 1993); BS 1972, MS 1974, University of Wisconsin-Stout.

Childs, Sally A., Professor and Chair of the Department of Recreation Studies and Exercise Science (1981, 1987, 1994); BS 1971, Eastern Michigan University; MS 1978, Northern Michigan University; PhD 1986, Ohio State University.

Conboy, Richard T., Professor of Political Science and Coordinator of Graduate Studies and International Education (1988, 1993, 1994, 1997); BA 1967, MPA 1969, University of Dayton; PhD 1984, The American University.

Crandall, Richard C., Professor of Sociology (1969, 1987); BS 1967, MA 1969, Central Michigan University; PhD 1974, University of Michigan.

Cullen, John C., Professor of Spanish and English (1967, 1985); BA 1963, MA 1965, Michigan State University; PhD 1973, Interamerican University.

Delaney-Lehman, Maureen, Assistant Professor and Librarian (1989, 1992); BM 1975, Western Michigan University; MS 1980, Michigan State University; MLS 1988, University of Kentucky.

Denger, George, Assistant Professor of Speech (1995); BS 1980, MA 1986, Eastern Michigan University; PhD 1997, Wayne State University.

Devaprasad, James, Associate Professor and Chair of Department of Manufacturing Engineering

Technology (1986, 1991, 1994, 1996); BS 1983, University of Madras, India; MS 1986, University of New Mexico.

Dobbertin, Gerald, Assistant Professor of Sociology (1972, 1982); BS 1967, Wayne State University; MA 1973, Central Michigan University; PhD 1981, Michigan State University.

Dobbertin, Leslie, Associate Professor and Chair of the School of Social Sciences (1974, 1982, 1991); BA 1965, Central Michigan University; MA 1972, Iowa State University; PhD 1989, Michigan State University.

Dorrity, Daniel T., Professor of History and Chair of the School of Humanities and History (1970, 1990, 1994); BA 1966, MA 1967, Wayne State University; PhD 1973, University of Michigan.

Duesing, Paul R., Associate Professor, Chair of the Department of Mechanical Engineering and Coordinator of Cooperative Education (1984, 1990, 1994); BSME 1971, MSME 1973, University of Michigan. Licensed professional engineer for Michigan and Ohio.

Duesing, Sherilyn R., Instructor of Mathematics (1994); AS 1971, North Central Michigan College; BS 1976, Central Michigan University.

Erkkila, John, Professor of Economics (1990, 1996); BS 1970, Lake Superior State College; MA 1971, University of Windsor; PhD 1988, University of Western Ontario.

Evans, Barbara I., Associate Professor and Chair of Department of Biology (1994, 1997); BS 1980, University of Ottawa, Canada; PhD 1986, University of Kansas.

Fabrizi, Anthony J., Associate Professor of Mathematics (1996); BS 1965, MS 1967, Indiana State University; EdD 1995, University of Louisville.

Fields, Polly Stevens, Associate Professor of English (1995); BA 1978, Vanderbilt University; MA 1989, University of Mississippi; PhD 1992, Louisiana State University.

Foley, Elizabeth A., Assistant Professor of Criminal Justice and Coordinator of Corrections (1981, 1987); BA 1969, Madonna College; MA 1982, Northern Michigan University.

Furr, Richard Steven, Associate Professor of Biology (1971, 1981); BA 1963, Pfeiffer College; MS 1966, North Carolina State University; PhD 1971, University of Tennessee.

Gadzinski, Eric, Assistant Professor of English (1995); BA 1977, Lafayette College; MA 1990, PhD 1995, Temple University.

Gaertner, George P., Associate Professor of English, Chair of the School of English and Speech, and Coordinator of Writing in the Disciplines (1965, 1974); BA 1959, Michigan State University; MA 1963, University of Michigan.

Gaertner, Robert, Associate Professor of Finance (1965, 1989); BBA 1964, University of Notre Dame; MBA 1965, Michigan State University; CFP 1988; ChFC 1993; CLU 1994.

Gardiner, R. Lee, Associate Professor of Exercise Science (1988, 1992, 1997); BS 1979, Grand Valley State University; MS 1988, Northern Michigan University; PhD 1997, University of Wisconsin-Madison.

Gerrish, Steven J., Assistant Professor of Applied Science in Engineering (1981, 1988, 1997); BS 1978, Lake Superior State College; MA 1981, Michigan State University.

Godby, Marjorie B., Assistant Professor and Counselor (1986, 1992); BS 1962, University of Minnesota; MA 1966, University of Michigan.

Gordier, Paige H., Associate Professor and Chair of the School of Criminal Justice, Fire Science

and Education (1993, 1996); BS 1988, Lake Superior State University; MA 1989, PhD 1992, Sam Houston State University.

Gutowska, Janina, Assistant Professor of Mathematics (1988); MS 1966, University of Lodz, Poland.

Gutowski, Mieczyslaw, Associate Professor of Mathematics (1984, 1990); MS 1965, University of Lodz, Poland; PhD 1973, University of Gdansk, Poland.

Haag, William, Professor of Chemistry and (1984, 1994); BS 1961, Loras College; MS 1965, PhD 1971, University of Nebraska.

Halsey, Alice, Associate Professor of Nursing (1973, 1983); BSN 1962, University of Michigan; MSN 1977, Wayne State University; Nursing license, Michigan and Ontario.

Hanson, Margaret R., Assistant Professor of Nursing (1995); BSN 1974, Madonna College; MS 1979, University of Michigan.

Harger, Bruce T., Professor of Economics (1967, 1985, 1996); BA 1966, MA 1967, PhD 1991, Michigan State University.

Hayward, Pamela A., Assistant Professor of Speech (1995); BA 1981, Northeastern Illinois University; MA 1990, University of Illinois.

Heasley, James, Assistant Professor of Political Science (1998); BA 1991, Cabrini College; MA 1993, PhD 1998, Temple University.

Heyns, Terry L., Professor of Fire Science (1989, 1994); AB 1965, Saint Louis University; MA 1967, University of Kansas; PhD 1989, Kansas State University; National certification as a fire service instructor, Professional Fire Service Qualifications Board; Certified fire instructor in Michigan, Virginia and Kansas.

Hines, Virginia, Assistant Professor of Teacher Education (1998); BPh 1976, Thomas Jefferson College; MA 1991, Salem-Teikyo

University; EdD 1994, West Virginia University.

Hronek, Beth, Instructor, Librarian (1994); BM 1983, University of Iowa; MM 1985, University of Tennessee; MLS 1990, University of Iowa.

Hudson, John S., Associate Professor of Accounting (1970, 1986); BA 1963, MA 1965, Michigan State University; MBA 1967, Western Michigan University.

Hutchins, Ronald S., Assistant Professor of Nursing (1997); ADN 1977, BSN 1978, Lake Superior State University; MSN 1995, Northern Michigan University.

Jennings, Richard P., Professor of Speech and Coordinator of Readers' Theatre (1970, 1990); BA 1950, University of Michigan; MD 1953, Virginia Theological Seminary; MA 1970, Central Michigan University.

Johnson, Gary R., Professor of Political Science and Editor, *Politics & Life Sciences* (1978, 1990); BA 1972, Augustana College; MA 1975, PhD 1979, University of Cincinnati.

Jones, Charles W., Professor of Chemistry and Faculty Athletics Representative (1970, 1981); AB 1954, Western State College of Colorado; MS 1957, PhD 1973, Oklahoma State University.

Jones, Philip, Assistant Professor of Criminal Justice (1998); BS 1979, University of New Brunswick; MA 1992, San Houston State University.

June, Mary M., Assistant Professor and Librarian (1988, 1993); BA 1978, MLS 1980, University of Wisconsin-Milwaukee.

Kabke, Lynn, Assistant Professor of Nursing (1991); BSN 1989, Lake Superior State University; MSN 1994, Northern Michigan University.

Kelso, Paul R., Associate Professor of Geology (1993, 1997); BS 1986, Lake Superior State College; MA 1990, PhD 1993, University of Minnesota.

King, Brian C., Instructor of Geology (1995); BS 1980, University of Dayton; MS 1984, University of Kentucky.

Kirk, Christopher, Instructor and Athletic Trainer (1997); BS 1995, Indiana State University; MS 1997, Miami University-Oxford.

Kirkpatrick, Nancy, Assistant Professor of Biology (1995); BS 1972, Miami University; MS 1979, PhD 1993, Miami University.

Kobolt, James R., Assistant Professor of Criminal Justice (1997); AA 1976, Maple Woods Community College; BA 1987, Park College; MPA 1989, Park College Graduate School of Public Affairs.

Land, Roger J., Assistant Professor of Criminal Justice, Fire Science (1996); BS 1972, Brigham Young University; MS 1974, University of Utah.

Lehman, John W., Professor of Chemistry (1966, 1982); BS 1960, McPherson College; PhD 1969, University of Colorado.

Linderoth, Leon W., Professor of English (1968); AB 1958, BS 1958, Central Michigan University; MA 1960, PhD 1966, Florida State University.

Lundin, Jean M., Associate Professor of Management, Marketing and Finance (1991); BS 1975, University of Wisconsin-Parkside; MBA 1977, Roosevelt University; PhD 1988, Southwest University.

Madden, James, Associate Professor of Criminal Justice (1984, 1989); BA 1971, William Carey College; MS 1975, University of Southern Mississippi.

Madl, John T., Associate Professor of Mechanical Engineering (1967, 1981); BSME 1965, MSME 1967, Michigan Technological University.

Marinoni, Ann B., Professor of Business (1976, 1980, 1993); BA 1975, Lake Superior State University; MS 1977, Central Michigan University; PhD 1992, Michigan State University.

Marsh, Robert J., Assistant Professor of Business and Chair of the MBA Program (1996, 1998); BA and BS 1977, University of California - Santa Barbara; MBA 1991, Lake Superior State University.

McDonald, David M., Professor and Chair of Department of Engineering Technology and General Engineering (1973, 1986, 1994, 1995); BSEE 1969, MSEE 1971, Michigan Technological University.

McLeod, Vicki A., Assistant Professor of School of Nursing (1997); LPN 1973, Ferris State University; RN 1977, St. Luke's School of Nursing; BN 1982, MN 1990, Northern Michigan University.

McPherson, Debra, Assistant Professor of Recreation Studies, Coordinator for Recreation Management, Director of Elderhostel and Lake Superior Elders (1976, 1983); BS 1974, MS 1982, Northern Michigan University.

Meehan, Mary Jo, Assistant Professor and Counselor (1983, 1987); BS 1977, MA 1981, Northern Michigan University.

Meiser, Charles W., Associate Professor of Quantitative Economics (1968, 1982); BSEE 1963, MS 1966, Purdue University.

Merkel, Dennis, Associate Professor of Biology (1988, 1993); BS 1977; MS 1983, State University of New York-Syracuse; PhD 1988, Michigan State University.

Mickewich, Thomas, Professor of Mathematics (1967, 1988); BA 1964, MA 1967, University of Maine.

Miller, Cary, Assistant Professor of Native American Studies (1997); BA 1993, University of Iowa; MA 1995, University of North Carolina-Chapel Hill.

Money, Robert M., Professor of History (1969, 1976, 1993); AB 1953, Northern Michigan University; MA 1958, University of Michigan.

Montis, Kristine K., Assistant Professor of Mathematics and Acting Chair of Teacher Education

(1997); BS 1977, University of Oklahoma; MA, Western New Mexico University; PhD 1997, University of Oklahoma.

Moody, James W. T., Professor of History (1971, 1992); BA 1959, Greenville College; MA 1960, Michigan State University.

Mugavero, Daniel C., Associate Professor of Accounting and Chair of the School of Business and Economics (1976, 1991, 1997); BA 1966, MBA 1967, Michigan State University; CPA 1976, CTP 1992, DABFA 1997.

Mullin, C. Randall, Professor of Physics and Coordinator of the Planetarium (1969, 1986); BS, 1959, St. Vincent College; PhD 1964, University of Notre Dame.

Myton, David M., Associate Professor and Chair of the Department of Chemistry (1993, 1997); BS 1980, George Fox College; MST, PhD 1991, Portland State University.

Neveu, Ruth, Assistant Professor and Librarian (1984, 1988); BA 1997, Lake Superior State University; MS 1984, University of Michigan.

Niemi, Alan D., Assistant Professor of Electrical Engineering (1986); BS 1981, Lake Superior State College; MSEE 1985, Illinois Institute of Technology.

Padakannaya, Kishan, Assistant Professor of Engineering (1998); BS 1986, BS 1988, University of Missouri; MS 1993, Southern Illinois University; PhD 1998, Washington State University.

Payment, Donna M., Instructor of Office Administration (1991, 1997); BS 1990, MBA 1993, Lake Superior State University.

Person, Steven J., Professor of Biology (1974, 1989); BS 1966, MS 1968, Iowa State University; PhD 1976, University of Alaska.

Pichot, Marcel, Associate Professor of French (1989, 1992); BA 1967, Andrews University; MA 1968, Western Michigan University; PhD 1975, University of Michigan.

Pingatore, Diana, Associate Professor of English and Honors Director (1988, 1992); BA 1977, Lake Superior State College; MA 1981, PhD 1987, Michigan State University.

Rangavajhula, Krishna, Assistant Professor of Engineering (1998).

Ratwik, Susan H., Professor and Chair of Psychology and Coordinator of the Center for Social Research (1977, 1990); BA 1969, University of Minnesota; MS 1975, PhD 1978, University of Notre Dame.

Roese, John H., Associate Professor of Wildlife Ecology and Management (1990, 1995); BSF 1982, Stephen F. Austin State University; MS 1984, PhD 1989, Texas A & M University; Associate certified biologist.

Ryckman, Annette J., Assistant Professor of Marketing (1994); BS 1960, Eastern Michigan University; MA 1977, PhD 1984, Michigan State University.

Ryckman, Lynn A., Associate Professor of Marketing (1992); BA 1977, MA 1978, PhD 1982, Michigan State University.

Rynberg, Nina L., Assistant Professor of Reading (1992, 1995); BS 1969, MA 1983, Central Michigan University; Elementary and Secondary Certification in Education; Developmental Education Specialist Certification 1995, Appalachian State University.

Saluja, Madan, Professor of Management (1969, 1981); BA 1960, University of Delhi; LLB 1962, BA 1964, MA 1966, Macalester College; PhD 1977, University of Minnesota.

Sawyer, Timothy J., Professor of Psychology (1976, 1989); BA 1972, Northern Michigan University; MA 1974, PhD 1976, University of Nevada-Reno.

Schirer, Thomas, Professor of Humanities (1984, 1987, 1993); BA 1973, MA 1976, University of California; PhD 1983, Friedrich-Alexander-University.

Schmaltz, Kevin S., Assistant Professor of Mechanical Engineering (1997); BS 1984, Virginia Technical University; MS 1992, Tulane University; PhD 1997, Carnegie Mellon University.

Schmitgal, Linda, Assistant Professor (1989, 1990, 1993, 1997, 1998); BS 1982, Lake Superior State College; MBE 1990, MBA 1993, Central Michigan University.

Schoenemann, Shirley, Associate Professor of Early Childhood Education, Supervisor of Child Development Lab, and Coordinator of Early Childhood Education (1983, 1990, 1996); BA 1966, Western Michigan University; MAT 1986, Oakland University.

Schwiderson, Keith H., Assistant Professor of Mechanical Engineering (1977, 1985); BS 1976, Lake Superior State College; MS 1981, Northern Michigan University.

Shannon, MaryAnne P., Associate Professor of Nursing (1991); BSN 1975, University of Michigan; MSN 1979, Wayne State University; AD 1989, Lake Superior State University; ANA Certified Clinical Nurse in Gerontological Nursing, 1981.

Sherman, Karl J., Associate Professor of Accounting (1971, 1980); BS 1965, Northern Michigan University; MS 1967, Southern Illinois University.

Stai, Deborah, Associate Professor of Biology (1991, 1995); BS 1974, Mankato State University; MA 1980, PhD 1989, Union Institute.

Stanko-Bedell, Claudia, Assistant Professor of Teacher Education (1996, 1998); BS 1975 Eastern Michigan University; MA 1978, Michigan State University.

Stevens, John R., Associate Professor of English (1967, 1983); BA 1958, MA 1959, University of Michigan.

Suggitt, Randall G., Assistant Professor of Mathematics (1983, 1988); BS 1976, Lake Superior State College; MA 1979, University of Montana.

Suneson, Scott, Assistant Professor of Business (1996); BS 1975, Eastern Michigan University; BA 1981, Walsh College; MBA, Lake Superior State University.

Susi, Joseph D. II, Assistant Professor of Exercise Science and Athletic Trainer (1992, 1998); BA 1988, Ohio Northern University; MS 1989, Indiana University.

Sutton, Trent M., Assistant Professor of Biology and Co-Director of the Aquatic Research Lab (1996); BS 1991, Michigan State University; MS 1993, Michigan Technological University; PhD 1997, Virginia Polytechnic Institute and State University.

Terwilliger, Mark G., Assistant Professor of Mathematics and Computer Science (1990, 1994, 1995); BS 1988, Lake Superior State University; MS 1990, Michigan State University.

Thesing, Gary L., Professor of Mathematics (1971, 1981, 1994); BA 1960, St. Mary of the Plains College; MS 1964, University of Notre Dame; EdD 1971, Oklahoma State University.

Toffolo, E. Gary, Professor of English (1970, 1990); BS 1958, Northwestern University; MA 1961, University of Chicago.

Trouve, Raymond, Assistant Professor of Psychology (1993, 1996); BS 1955, Seton Hall University; BA 1986, Lake Superior State College; MA 1975, Boston University; MA 1988, Central Michigan University.

Tucker, Houston, Assistant Professor of Criminal Justice (1995); BA 1972, University of Georgia; MPA 1980, Kentucky State University; MS 1993, Eastern Kentucky University.

Walworth, Maurice, Assistant Professor and Chair of Electrical and Computer Engineering (1991); BSEE 1981, MSEE 1983, Michigan Technological University.

Weber, Charles L., Associate Professor of Electrical Engineering

(1970, 1980); BS 1964, MS 1970, Michigan Technological University.

West, Edith A., Assistant Professor of Nursing (1997); BSN 1984, MSN 1995, Duquesne University.

Wilkinson, John S., Professor of Music and Coordinator of Cultural Affairs and Fine Arts Academy (1976, 1989); BME 1969, University of Nebraska; MM 1971, DMA 1974, University of Michigan.

Wiley, Robert G., Associate Professor of Social Work (1995); BA 1963, Southern Illinois University; MSW 1968, Washington University.

Wilson, Paul W., Professor of Mathematics (1963, 1988); BS 1962, MA 1963, Central Michigan University.

Wu, Stanley Y., Assistant Professor of Chemistry (1998); BS 1984, MS 1987, Jinan University; MS 1991, Clarkson University; PhD 1998, University of Michigan.

Yanni, Stephen R., Assistant Professor of Therapeutic Recreation (1987, 1992); BS 1986, Lake Superior State College; MS 1988, Western Illinois University.

Zabelka, Richard J., Professor of Physics (1966, 1984); BS 1956, Michigan Technological University; MS 1960, University of California (LA); PhD 1964, Purdue University.

Zimmerman, Gregory M., Assistant Professor of Plant Ecology (1995); BS 1977, Fort Hays State University; MS 1981, Oklahoma State University; MS 1983, North Dakota State University; PhD 1987, Colorado State University.

Emeriti Faculty

Anderson, Melvin L., Professor of Chemistry (1969-1993); BS 1953, MS 1955, Michigan Technological University; PhD 1965, Michigan State University.

Anderson, Roland A., Associate Professor of Office Administration (1969-1986); BA 1953, Wisconsin State University-Whitewater; MA 1961, Northern Colorado University-Greeley.

Behmer, David J., Professor of Biology (1967-1996); BS 1963, Wisconsin State College; MS 1965, PhD 1966, Iowa State University.

Bruce, Russell D., Professor of Physical Education and Recreation (1976-1987); BA 1953, Cornell College; MA 1956, University of Michigan; PhD 1966, University of Wisconsin.

Carlson, Arthur F., Associate Professor of Physics (1947-1970); BS 1935, University of Minnesota. (deceased)

Castor, William N., Professor of Political Science (1971-1994); BA 1951, Middlebury College; MA 1952, Columbia University; PhD 1975, University of Denver.

Carlson, Delphine, Associate Professor of Mathematics (1947-1969); BA 1934, MA 1938, University of Michigan. (deceased)

Chandra, Purna, Professor of Microbiology (1967-1994); BS 1949, MS 1951, Agra University; PhD 1958, Oregon State University.

Cole, Wallace, Associate Professor of Mathematics (1955-1969); BS 1926, MA 1928, University of Wisconsin. (deceased)

Cooper, Ronald R., Professor of Physical Education (1956-1986); Director of Intercollegiate Athletics and James Norris Physical Education Center (1976-1986); BS 1951, MA 1958, Central Michigan University.

Curtis, Robert W., Professor of Engineering Technology (1955-1986); BSME 1948, Michigan

Technological University; BSEd 1950, Northern Michigan University; MA 1954, University of Michigan. (deceased)

Dahlman, Marvin, Associate Professor of Mechanical Engineering Technology (1952-1985); BS 1947, MS 1952, University of Minnesota.

Duwe, Arthur E., Professor of Biological Science (1968-1991); BS 1949, Alma College; MS 1950, PhD 1953, Ohio State University. (deceased)

Flynn, Michael, Professor of English (1961-1986); BA 1954, Central Michigan University; MA 1964, Northern Michigan University.

Francisco, Wayne H., Assistant Professor of Criminal Justice (1973-1983); BS 1950, Eastern Michigan University; MA 1967, MS 1971, Michigan State University.

Gleason, Gale R., Professor of Biology and Department Head of Biology and Chemistry (1965-1986); BS 1950, Central Michigan University; MS 1951, PhD 1960 Michigan State University.

Gleason, Gilbert J., Professor of Biology (1961-1988); BS 1958, MA 1960, Central Michigan University. (deceased)

Harris, Earle B., Associate Professor of English (1976-1987); AB 1946, University of Michigan; BD 1947, ThM 1964, Princeton Theological Seminary.

Hatfield, Kenneth G., Instructor of Geology (1983-1993); BS 1950, Michigan Technological University.

Howe, Margaret, Associate Professor of Humanities (1969-1981); AB 1932, Northwestern University; MA 1965, Northern Michigan University.

Jemison, Eugene F., Associate Professor of Humanities (1969-1986); BA 1946, Washburn University; MFA 1948, Kansas City Art Institute.

Kelly, Thomas M., Professor of Sociology (1971-1992); BA 1952, St.

Mary of the Lake University; STL 1956, Gregorian University, Rome; MA 1964, University of Notre Dame; MEd 1979, Loyola University.

Kemp, C. Ernest, Associate Professor of Geology (1944-1980); Dean Emeritus of Lake Superior State University; BS 1949, Michigan Technological University. (deceased)

Knowles, David M., Professor of Geology (1969-1994); BS 1954, MS 1955, Michigan Technological University; PhD 1967, Columbia University.

Knudson, Vernie A., Associate Professor of Natural Resources Technology (1971-1994); BS 1954, Bethany College; BS 1958, University of Kansas; MS 1959, Fort Hays State College; PhD 1970, Oklahoma State University.

Marken, Marzale, Associate Professor of Engineering Technology (1955-1984); BS 1948; MA 1956, University of Minnesota. (deceased)

Matheson, John M., Professor of Journalism and Secretary, Board of Control (1969-1984); BA 1948, Michigan State University; MA 1965, PhD 1967, Southern Illinois University.

McCabe, John C. III, Professor of English (1970-1987); PhB 1947, University of Detroit; MFA 1948, Fordham University; PhD 1954, Shakespeare Institute, University of Birmingham, England.

Poisson, Joseph A., Associate Professor of Physical Education (1963-1976); SS 1940, Northern Michigan University; MA 1957, University of Michigan.

Reilly, Raymond, E., Professor of Biology and Chemistry, (1966-1990); BS 1951, MS 1951, MS 1963, PhD 1970, Michigan State University.

Sampson, Gerald, Professor of Mathematics (1966-1990); BA 1952, University of Michigan; MA 1955, MS 1966, Texas A & M University.

Sawczak, George J., Assistant Professor of English (1965-1982); BA 1952, Alliance; MA 1954, Kent State University.

Shouldice, Kenneth J., Professor of Business Administration and President (1965-1982); BS 1949, Marquette; MS 1951, Northwestern; PhD 1969, Iowa. (deceased)

Smith, Bernard M., Professor of Behavioral Science (1966-1980); BA 1947, MA 1949, University of Louisville; MA 1956, University of Kentucky; PhD 1960, Iowa. (deceased)

Smith, Bryce E., Professor of Biology (1970-1995); BS 1952, MA 1957, University of Michigan; PhD 1965, University of Wisconsin.

Stough, Bessie, Associate Professor of Mathematics (1947-1963); BA 1923, MA 1929, University of Michigan. (deceased)

Truckey, John, Associate Professor of Counseling (1966-1986); BS 1958, MA 1964, Northern Michigan University.

Vialpando, Edeltraute, Professor of Foreign Languages (1967-1988); PhD 1944, Charles University, Prague, Czechoslovakia.

Ward, Louis R., Professor of English (1961-1981); BA 1939, MA 1940, University of Colorado; PhD 1959, Purdue University.

Wentz, Elena, Assistant Professor of Nursing (1971-1993); BA Simpson College; MSN 1977, Wayne State University.

Youngs, Stephen P., Professor and Psychometrist (1947-1968); BS 1930, Northern Michigan University; MEd 1941, Colorado. (deceased)

Academic College Deans

Arts, Letters and Social Sciences: Blashill, James R., (1975, 1993, 1995, 1997); BS 1973, Wayne State University; MS 1976, Michigan State University.

Engineering, Mathematics and Business: Adams, Ray L., Associate Professor of Engineering (1986, 1993, 1994, 1997); BS 1975, MS 1978, Nicholls State University.

Natural and Health Sciences: McCrimmon, Donald A., (1998); BA 1964, University of South Florida; MA 1967, Vanderbilt University; PhD 1975, North Carolina State University.

University College: LaVoy, John E., (1996); BS 1977, MA 1982, Northern Michigan University

Administrative Staff

Albrough, Katherine A., Accountant (1989); BS 1989, MBA 1996, Lake Superior State University.

Alexander, Carol, Executive Secretary, Student Programs & Services/Board of Trustees (1978, 1981, 1983, 1991, 1998); Lake Superior State University (ex-1982), Northern Michigan University (ex-1970).

Baars, Dennis, Head Men's and Women's Cross Country Coach and Men's Track Coach (1996); BS 1992, MS 1996, Northern Michigan University.

Barber, Kelli, Admissions Officer (1998); BAA 1997, Central Michigan University.

Barrett, M. Debra, Typist/Clerk, Health CARE Center (1994); Lake Superior State University (ex-1990).

Batho, Katherine M., Executive Secretary, President's Office (1990, 1994); Muskegon Business College, 1986; AD 1995, Lake Superior State University.

Bawks, Judy A., Secretary, *Politics & the Life Sciences*, (1991); BA 1976, Lake Superior State College.

Besteman, Paul A., Manager of CHP and Maintenance Planning, Physical Plant (1973, 1982, 1983, 1987, 1995, 1997); Lake Superior State College (ex-1973).

Borek, Scott G., Head Hockey Coach (1995, 1996); BA 1985, Dartmouth College.

Bowerman, William, Director, Gale Gleason Environmental Institute (1996); BA 1985, Western Michigan University; MA 1991, Northern Michigan University; PhD 1993, Michigan State University.

Bruning, Charlotte J., Student Supervisor, Food Service (199, 19987).

Bullock, Kris L., Head Women's Basketball Coach/Senior Woman

Administrator (1997, 1998); BA 1992, Lake Superior State University; MA 1997, Elmira College.

Burdett, F. John, Information Technology Specialist (1996).

Camp, Susan K., Director of Continuing Education (1977, 1988, 1993, 1994, 1995); BS 1985, Lake Superior State College; MBA 1992, Lake Superior State University.

Campbell, Alden E., Manager of Engineering Services (1973, 1976, 1988, 1989, 1997); BS 1973, Lake Superior State College.

Castner, Cheryl L., Textbook Services Supervisor (1980); BS, University of Wisconsin-Stout.

Clark, Bruce G., Assistant Director of Admissions (1976, 1986); BA 1976, Lake Superior State College.

Coates, Thomas W., Auxiliary Marketing Specialist (1995), Building Manager, Norris (1998); BS 1986, Lake Superior State University.

Collins, Michael, Associate Hockey Coach (1998); BS 1985, University of Wisconsin; MA 1988, Ohio University.

Comer, Lee D., Director of Physical Plant (1996); BS 1979, Michigan Technological University.

Cook, Deb L., Manager of Graphics (1994); BSA 1989, Kendall College of Art and Design.

Coullard, Jon, Mechanical Lab Engineer (1996, 1997); BS 1990, Lake Superior State University.

Cox, Georgiana M., Accountant (1979); BS 1979, Lake Superior State College; MBA 1988, Lake Superior State University.

Cox, Juliana L., Accountant (1983); BS 1983, Lake Superior State College; BS 1987, Lake Superior State University.

Crawford, William J., Athletic Director (1988, 1993, 1996); BS 1970, Western Michigan University.

DeNeve-Ewing, Laurie A., Textbook Assistant (1995); BS 1985, Lake Superior State University.

DePlonty, Stella R., Assistant to the Provost for Academic Records (1960, 1987, 1998).

Devaprasad, Sara, Information Technology Specialist (1996); BS 1990, Seattle Pacific University.

Dunbar, Alan, Assistant Hockey Coach (1998); BS 1998, Lake Superior State University

DuVall, Mary Jo, Assistant Director of McKinley Day Care (1998); BS 1987, Lake Superior State College.

Engle, Mark W., Head Women's Volleyball Coach (1995); BS 1974, Grand Valley State University.

Esch, Susan, Computer Operator (1998).

Faust, Deborah, Director of Financial Aid (1979, 1990, 1994, 1998); AD 1985, Lake Superior State College; BS 1997, Lake Superior State University.

Fenlon, Paul T., Director of Career & Employment Services (1981, 1987, 1997); BA 1964, Western Michigan University.

Fitch, Erin, Director of McKinley Day Care (1998); Lake Superior State University (ex-1998).

Fitzpatrick, Susan L., Administrative Assistant, Alumni Relations (1995); BS 1987, Lake Superior State University.

Flowers, Judy M., Secretary, Recreation Studies/Exercise Science (1995).

Floyd, Kay A., Director of Grants and Contracts (1990, 1994, 1997); AD 1995, Lake Superior State University.

Friedt, Peggy, Coordinator of Payroll (1996); AD 1987, Lake Superior State University.

Gilbert, Jodi, Admissions Officer (1995, 1998); BA 1998, Lake Superior State University.

Grant, Kristen, Assistant Women's Basketball Coach (1998); BS 1997, Oakland University.

Greil, Roger W., Aquatic Lab Manager (1989); AD 1988, Lake Superior State University.

Gustafson, Charles J., Media Specialist (1970); AD 1968, Lake Superior State College.

Haag, Margaret, SI Coordinator, University College (1998); BA 1975, Hamline University; BS 1988, Lake Superior State University; MS 1989, University of Minnesota.

Hendrickson, Judy, Services Coordinator, Upward Bound (1997); BA 1971, University of Michigan Ann Arbor and L'Universite d'Aix-en-Provence France.

Howe, Cheryl, Exercise Science Laboratory Technician (1995); BS 1991, Lake Superior State University; MS 1994, Ball State University.

Huntz, Daretha, Supervisor of Loans/Accounts Receivable/Inventory, Business Operations (1992, 1995, 1998).

Jastorff, Kari, Executive Secretary, Executive Vice President and Provost Office (1997); BSEd 1989, Black Hills State University.

Jastorff, Mark A., Director of University and Alumni Relations (1993); BS 1980, Black Hills State University.

Juda, Kristie M., Administrative Assistant, Human Resources (1995, 1996); BS 1996, Lake Superior State University.

Juntunen, Darcy, Coordinator/Office of Student Accommodations & Support Services (1997); AD 1980, BS 1980, Lake Superior State College; MS 1991, DePaul University.

Kaunisto, Gen, Typist/Clerk III, Native American Center (1996, 1997, 1998); Lake Superior State University (ex-1988).

Keely, Robert E., Production Manager of Food Service (1994).

King, Jeff, Electronic/Computer Lab Engineer (1997); BS 1996, Lake Superior State University.

Klein, Nina A., Director of EUP-ISD Math & Science Center Grant (1994), and Program Director of Goals 2000 Grant (1995); BS 1972, University of California, Los Angeles; MS 1983, California State University.

Lawson, Troy D., Network Specialist (1997), Academic Computing; BBA 1991, Lake Superior State University.

Lott, Jason E., Residence Hall Area Coordinator, Student and Residential Life (1997); BS 1997, Western Michigan University.

Mackie, Michele M., Data/Account Clerk, Norris Center (1995); AD, Lake Superior State University.

MacPherson, Arlene, Office Manager, Registrar/Scheduling (1988, 1992, 1996, 1997); AD 1984, Davenport College of Business.

Makela, Kay A., Cashier/Clerk, Campus Shoppe (1995); AD, Lake Superior State College.

Malaski, Annette M., Systems Analyst (1990); BS 1985, University of Wisconsin-Stevens Point.

Manor, Robbin S., Campus Shoppe Manager (1990); Lansing Community College (ex-1977).

Mansfield, Leisa A., Assistant Director of Admissions (1995, 1998); AD 1990, BS 1991, Lake Superior State University.

Mattson, Scott L., Director of Intramurals/Head Men's & Women's Tennis Coach (1997); BS, Lake Superior State University.

Maze, Joan E., Residence Hall Area Coordinator, Student and Residential Life (1997); BA 1994, Xavier University.

McAllister, Suzan L., PC Lab Manager (1997); AAS 1983, Michigan Technological University.

McBryde, Tracey, Pro Shop Assistant (1998).

McCarthy, Jeannette E., Licensed Practical Nurse (1997); LPN 1968, Lake Superior State College.

McDermott, Martin, Men's Basketball Coach (1996, 1997); BBA 1993, University of North Dakota; MED 1995, Wayne State College.

McDonald, Laurie, Secretary, School of Engineering and Technology (1998).

McGahey, Richard, Telephone Technician (1996).

Merkel, Cynthia E., Institutional Research Analyst (1987, 1988, 1994, 1998); BA 1979, Syracuse University.

Methner, Jamie, Food Service Production Manager (1997)

Metro, Grace M., Hair Stylist.

Michels, Fredrick A., Professor and Vice Provost for Information Technology (1976, 1981, 1995); BS 1968, University of Wisconsin; MLS 1971, EdD 1976, Western Michigan University.

Neve, Nancy A., Personnel Clerk, Human Resources Office (1998); BS 1983, Lake Superior State College.

Newburg, Heather T., Director of Learning Center (1995); BA 1993, Buena Vista College; MA 1995, Northern Michigan University.

Newman, Bradley E., Engineering Assistant, Physical Plant (1995); AD 1995, Lake Superior State University.

Nichols, Laura, Admissions Officer (1998).

Noreus, Beth M., Regional Site Director-Escanaba (1995); AD 1992, Bay de Noc Community College; BS 1993, Lake Superior State University.

Olson, Scott A., Network Specialist (1985, 1990, 1992); Lake Superior State University (ex-1990).

Olson, Suzette M., Secretary II, Student and Residential Life (1988, 1996, 1998); AD 1986, 1987, Lake Superior State College.

Pavloski, Sherri A., Non-Credit Program Coordinator (1988, 1997); Mohave Community College (ex-1987).

Perron, Jacqueline, Secretary II, Teacher Education (1998); AD 1998, Lake Superior State University.

Peterman, Jenny L., Director of Purchasing/Risk Management (1978, 1991, 1995, 1997); BS 1988, Lake Superior State University.

Phillips, Saul G., Assistant Men's Basketball Coach (1997); BA and BS 1996, University Western Platteville.

Pink, Thomas A., Manager of Public Relations (1989, 1993); BA 1984, Lake Superior State University.

Pollock, Kevin A., Director of Enrollment and Recruitment (1998); BS 1981, MA 1989, Central Michigan University.

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Soltys, Stephen E., Accountant, Foundation (1998).

Somsky-Miller, Carolyn, Admissions Officer (1998); BS 1992, Ferris State University.

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Waisanen, Melvin L., Director of Student Service Center/Registrar (1999); AA 1966, Suomi College; BA 1968, Northern Michigan University; MA 1971, Western Michigan University; PhD 1987, University of Nebraska.

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Officers of Administration

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Department Chairs

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Business and Economics

Prof. Daniel Mugavero

Chemistry

Dr. David Myton

Criminal Justice/Fire Science

Dr. Paige Gordier

Electrical and Computer Engineering

Prof. Maurice Walworth

English and Speech

Prof. Georgegeen Gaertner

Environmental Science

Dr. David Myton

General Engineering/Engineering Technology

Prof. David McDonald

Geology and Physics

Dr. Lewis Brown

Humanities and History

Dr. Daniel Dorrity

Manufacturing Engineering Technology

Prof. James Devaprasad

Mathematics and Computer Science

Prof. Thomas Boger

Mechanical Engineering

Dr. Kevin Schmaltz

Nursing

Vacant

Recreation Studies and Exercise Science

Dr. Sally Childs

Social Sciences

Dr. Leslie Dobbertin

University Calendar

1998-1999

Fall Semester • 1998

Instruction Begins	AUGUST 31, Monday, 8 a.m.
Labor Day Recess	SEPTEMBER 4, Friday, 10 a.m.
Classes Resume	9, Wednesday, 8 a.m.
Final Day to Add Classes	9, Wednesday, 5 p.m.
Canadian Thanksgiving	OCTOBER 12, Monday
Final Day to Drop Classes	27, Tuesday, 5 p.m.
Spring Semester Scheduling	NOVEMBER 16-20, Monday-Friday
Thanksgiving Recess	24, Tuesday, 10 p.m.
Fee Statements Mailed	30, Monday
Classes Resume	30, Monday
Classes End	DECEMBER 11, Friday
Final Examinations	14-18, Monday-Friday
Spring Tuition Due	18, Friday
Semester Ends	18, Friday, 6 p.m.

Spring Semester • 1999

Instruction Begins	JANUARY 11, Monday
Final Day to Add Classes	18, Monday
Spring Break Begins	FEBRUARY 26, Friday, 10 p.m.
Classes Resume	MARCH 8, Monday
Final Day to Drop Classes	12, Friday, 5 p.m.
Summer and Fall Semester Scheduling	29-April 2, Monday-Friday
Fee Statements Mailed	APRIL 5, Monday
Classes End	23, Friday
Final Examinations	26-30, Monday-Friday
Semester Ends	30, Friday, 6 p.m.
Commencement	MAY 1, Saturday

Summer Semester • 1999

Scheduling of Classes	MARCH/APRIL/MAY March 29-April 2, Monday-Friday
Registration, Tuition Payment	Begins April 5, Monday
Instruction Begins for 4- and 12-Week Classes	May 10, Monday
Instruction Begins for 8-Week Classes	JUNE 7, Monday
Semester Ends	AUGUST 2, Monday

University Calendar

1999-2000

Fall Semester • 1999

Instruction Begins	AUGUST 30, Monday, 8 a.m.
Labor Day Recess	SEPTEMBER 3, Friday, 10 p.m.
Classes Resume	8, Wednesday, 8 a.m.
Final Day to Add Classes	8, Wednesday, 5 p.m.
Canadian Thanksgiving	OCTOBER 11, Monday
Final Day to Drop Classes	26, Tuesday, 5 p.m.
Thanksgiving Recess	NOVEMBER 23, Tuesday, 10 p.m.
Classes Resume	29, Monday
Classes End	DECEMBER 10, Friday
Final Examinations	13-17, Monday-Friday
Semester Ends	17, Friday, 6 p.m.

Spring Semester • 2000

Instruction Begins	JANUARY 10, Monday
Final Day to Add Classes	17, Monday
Spring Break Begins	FEBRUARY 25, Friday, 10 p.m.
Classes Resume	MARCH 6, Monday
Final Day to Drop Classes	10, Friday, 5 p.m.
Classes End	APRIL 21, Friday
Final Examinations	24-28, Monday-Friday
Semester Ends	28, Friday, 6 p.m.
Commencement	29, Saturday

Summer Semester • 2000

Instruction Begins for 4-and 12-Week Classes	MAY May 8, Monday
Instruction Begins for 8-Week Classes	JUNE 5, Monday
Semester Ends	AUGUST 1, Tuesday

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