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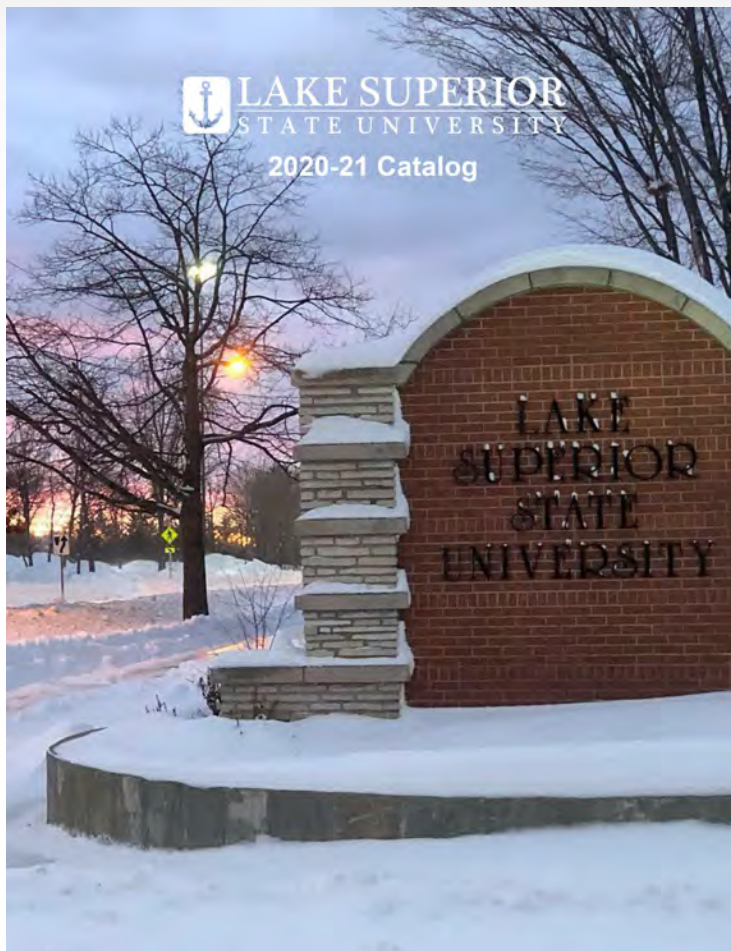
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A Look at LSSU

Lake Superior State University in Sault Ste. Marie Michigan, is a publicly funded state university operated under the control of a Governor-appointed Board of Trustees.

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This catalog includes general information about Lake Superior State University and its academic programs, including degree requirements for bachelors, associates and certificates. Course descriptions are available, as well as program information for each major and minor. It is recommended that if you have questions about your program, you speak to your academic advisor.



Use the links on the left to navigate the site.

Apply Online at: <http://www.lssu.edu/admissions/>

Printing: At the top right of each web page is a printer icon. Click on this icon to print the current catalog page.

Disclaimer

The University makes every effort to ensure the Catalog is current at the time of publication and that it contains relevant policies, procedures, degree requirements and other information of importance to its constituents. Because the institution is dynamic, the LSSU Catalog is for informational purposes and 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 published. Please contact the appropriate office for the most up-to-date information.

It is the policy of Lake Superior State University that no person shall be discriminated against, excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination in employment, or in any program or activity for which the University is responsible on the basis of race, color, national origin or ancestry, gender, age, disability, religion, height, weight, sexual preference, marital status or veteran status.

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Freshmen

A freshman student is defined as a student who has not enrolled in a postsecondary institution anytime after the summer following high school graduation.

A student may apply to Lake Superior State University anytime throughout his or her final year of high school. The best time to apply is at the beginning of a student's senior year. Applications are processed continuously. When all necessary materials have arrived, the student will be notified of a decision as soon as possible.

The Admissions Office must receive an official high school transcript, (or GED score report), to make an application decision.

The primary factors used to determine admission are cumulative grade point average (GPA) and high school course curriculum. LSSU recommends students follow a college preparatory curriculum mirroring the Michigan Merit Curriculum. The middle 50 percent of the entering freshmen class have high school GPAs ranging from 2.80 to 3.70. Students with a high school GPA of 2.4 or less will be reviewed through our holistic review process. Letters of recommendation or personal statements are considered. Students are encouraged to submit any additional materials that may aid the Admissions Office in the decision-making process where unusual circumstances may have impacted high school performance.

A student's admission will be contingent upon satisfactory completion of current coursework and receipt of a final high school transcript with verification of graduation from an accredited school or passing of the GED. All transcripts and/or test score reports must be mailed from the high school guidance office or testing agency directly to Lake Superior State University to be considered official. Transcripts delivered via approved platforms will also be considered official. Please contact the Admissions Office for more information regarding approved current electronic delivery methods.

LSSU assigns each student an individual student identification number. A student number will be provided upon admittance. While LSSU does not use social security numbers for student identification purposes, the university does use it to match an application record with other permanent records. Financial aid applications will not be processed without a student's social security number. Social security numbers should be included on the application for admission. Canadian and international student applicants should not report his or her social insurance number. LSSU will use the assigned student identification number.

Conditional Admission Policy

New freshmen applicants with a high school GPA of 2.4 or less and new transfer applicants with a combined previous institution(s) GPA of less than 2.0 will be reviewed through a holistic review process. The Admissions Committee may require additional documentation in the form of essays or recommendations. Applicants are encouraged to submit additional materials that may aid the Admissions Committee in the decision making process. The committee may recommend students for admission with conditional status.

Students admitted through the conditional admissions policy are:

- Limited to enroll in no more than 13 credit hours for two consecutive semesters
- Assigned an academic advisor through their major department
- Assigned an academic support specialist through the Library and Academic Services Department

Students admitted through the conditional admissions policy **must**:

- Earn a minimum 2.0 cumulative GPA while in conditional status
- Meet with their departmentally assigned academic advisor each semester
- Meet with their academic support specialist and follow the academic support plan outlined by their specialist

After the completion of two consecutive semesters and earning a cumulative 2.0 GPA or higher the student will be removed from conditional status and the semester credit hour limitation.

Early and Middle College or Dual Enrollment

Students participating in Early/Middle College or Dual Enrollment programs are considered first time in college (FTIC) students for admissions and scholarship purposes. Lake Superior State University uses holistic review and will consider all course work, both high school and college, in the evaluative process for admission. Early college students are considered FTIC with advanced standing for credits earned.

Students participating in early or middle college or dual enrollment in high school must have official transcripts from the college or university awarding course credit sent directly to Lake Superior State University. Credit will not be granted without an official transcript. Contact the college or university's Registrar's Office to have an official transcript sent. Transcripts sent by facsimile or hand delivered are not considered official. All transcripts become the property of Lake Superior State University and are not returnable.

Home Schooled Students

Lake Superior State University does not have separate requirements for home schooled applicants. Like all applicants, home schooled students will need to provide a transcript of his or her high school coursework. Admission will be based on high school grade point average and coursework completed.

Transfer Students

A transfer student is defined as a student who enrolls in a postsecondary institution anytime after the summer following high school graduation.

Transfer students must possess a 2.00 cumulative college GPA and be eligible to

return to their former college(s). Students seeking federal financial aid need to supply a final high school transcript (or GED score report) if transferring fewer than 60 credits without an earned associate degree.

Contact the college's Registrar's Office or high school guidance office to have an official transcript mailed to Lake Superior State University. 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.

Transfer Credit Evaluations

Official evaluation of transfer credit is made upon acceptance to LSSU. The Admissions Office will help with an unofficial transcript review upon request.

If a course taken at another institution is not offered at LSSU, elective credit may be granted for that course.

To receive transfer credit, students will need to earn a grade of C- (2.7) or higher.

The Admissions Office completes transfer credit evaluations based on equivalencies determined by the faculty. The decision on courses and transfer credit granted may be appealed first to the academic dean and then to the provost.

Michigan Transfer Agreement (MTA)

In order to satisfy the MTA, students must successfully complete at least 30 credits from an approved list of courses at a sending institution with at least a grade of 2.00 in each course. These credits, which will be certified by a sending institution, should be completed according to the following distributions:

- One course in English composition
- A second course in English composition or one course in communication
- One course in mathematics
- Two courses in social sciences (from two disciplines)
- Two courses in humanities and fine arts (from two disciplines excluding studio and performance classes)
- Two courses in natural sciences including at least one with laboratory experience (from two disciplines)

Students admitted to Lake Superior State University who have the MTA stamp on his or her transcript are recognized as having completed the general education requirements at Lake Superior State University.

Students who do not complete the entire block of courses required by the MTA will receive credit for the courses they do complete on the basis of individual course evaluation and established transfer equivalencies.

It is important to note that the MTA is not the best fit for all programs. There are many programs in Michigan for which the MTA is not a good fit. Students are encouraged to work with their advisors at their destination institution (LSSU) in order to select a path that is best for them.

MACRAO Transfer Agreement

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

Residency Requirement

There is no limit to the number of transfer credits allowed from other institutions but students are required to complete LSSU's [Residency Requirements](#).

Former Students

Former Lake Superior State University students who miss one or more semesters (not including summer) must submit an application for readmission prior to the semester of re-entry. If a student attended another college during the period of absence, the student must submit official transcripts and meet LSSU's transfer student admissions requirements. Students who were academically dismissed must meet the requirements for re-enrollment or appeal to the Scholastic Standards Committee.

Guest Students

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

Ontario Students

Ontario student applicants must satisfy entrance requirements comparable to those of United States students. Please refer to the "Freshmen" and "Transfer" sections of the catalog for details. Ontario students are not required to take the SAT/ACT for admission consideration. SAT/ACT scores are required for merit scholarship consideration.

If a student has completed grade 13 or OAC courses before September 1990, he or she will receive transfer credit at the university for each course in which the 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".

Admitted Ontario students must provide verification of ability to pay in order to receive a Certificate of Eligibility for Non-Immigrant (F-1) Student Status (Form I-20) required to attend a university in the United States. This is not an admissions requirement for Ontario students; however, an I-20 form is required for a student to cross into the U.S. to attend classes. Please refer to "Verification of Ability to Pay" section in the catalog for details. If a student is a permanent resident or able to be in the U.S. with another form of documentation, the student is required to submit a copy of this documentation.

If a student is a Canadian Aboriginal or Native American (excluding METIS) with at least 50% blood quantum and has J-treaty privileges (carries a tribal ID), the student is exempt from needing an I-20 form. The student must provide a copy of his or her tribal ID and an official tribal-issued letter showing proof of blood quantum.

Ontario students planning to attend part-time (fewer than 12 credits) and commute to the university will be issued a new I-20 form each semester upon the verification of the payment of tuition and fees, or after submission of financial information as outlined above.

Ontario students are required to provide a copy of a valid Provincial Health Card (both sides) verifying coverage under a provincial health care program. LSSU highly recommends that students purchase adequate health insurance coverage while in the U.S. Students, however, may request to [waive](#) the purchase of additional health and accident insurance.

International Students (Excluding Ontario Students)

LSSU recommends international applicants submit all application material by July 15 for the fall semester and by November 15 for the spring semester. Students will be required to provide official transcripts evaluated by World Evaluation Service (WES) or Education Credential Evaluators (ECE) on a comprehensive course-by-course basis. Websites for WES and ECE are www.wes.org and www.ece.org. This applies to first time in college students and transfer students.

International applicants must also provide verification of ability to pay, prove English language proficiency, and purchase health and accident insurance through the university sponsored program. Please refer to those sections for specific information.

Applicants should not be considered admitted to LSSU until all required documents have been provided to the university and he or she has received an official letter of acceptance. Following the letter of acceptance, the I-20 form is sent, as required by the U.S. Immigration and Naturalization Services.

If a student is a permanent resident or able to be in the U.S. with another form of documentation, a copy of this documentation is required.

International students are required to purchase health and accident insurance through the university sponsored program.

Verification of Ability to Pay – Ontario and International Students

The U.S. Immigration and Naturalization Services (INS) require that LSSU have verification of a student's ability to pay for tuition/books and expenses before a Certificate of Eligibility for Non-Immigrant (F-1) Student Status (I-20) can be issued. This form is required for international students to cross the border into the United States.

An acceptable financial document must have been submitted not more than nine (9) months before the term the student intends to enroll at LSSU. The document needs to be current within the last 90 days. Inclusion of false information in the financial statements is grounds for dismissal. Verification may be documented by the following: personal savings or verification of loans or scholarships received, a parent or sponsor, government or sponsoring agency, or by LSSU anticipated support.

As of September 1, 2004, the U.S. Department of Homeland Security (DHS) has implemented a rule requiring F-1 visa applicants to pay a one-time fee to supplement the administration and maintenance costs of the Student and Exchange Information System (SEVIS). Because LSSU will be issuing the student an initial I-20 form, the student will be required to pay this SEVIS fee. Information about payment of the fee and the processing of an I-20 form upon entry to the U.S. will be provided to the student upon receipt of the initial I-20 form. Students may also check our website for additional information:

<https://www.lssu.edu/admissions/how-to-apply/international-student-admissions-application/>.

Proof of English Proficiency

Proof of English proficiency is required for admission to LSSU as an international student. English proficiency can be proven in several ways:

1. Score 500 or above on the paper-based [Test of English as a Foreign Language \(TOEFL\)](#) or a score of 61 on the internet-based TOEFL. Please use institutional code 1421 to report scores directly to LSSU.
2. Score of 72 on the Michigan English Language Assessment Battery (MELAB). Write: English Language Institute, MELAB Testing, 3020 North University Building, University of Michigan, Ann Arbor, Michigan 48109-1057, U.S.A.
3. Completion of Level 112 at any ELS Language Center located in the U.S. More information can be found at: www.studyusa.com or at www.els.com, 1-609-750-3500 or info@els.com.
4. APIEL - Advanced Placement English Language Test with a score of 3 or higher.
5. SAT critical reading score of 480 or higher for tests taken before March 1, 2016, minimum overall score of 965 or higher, ACT equivalent is 20. For SAT tests taken after May 2016 an evidence based reading and writing score of 510.
6. Completion of two (2) years of study at a school, college or university located in an English-speaking country.
7. IELTS - International English Language Testing System with a score of 6.0 or higher.
8. [PTE](#) Academic test score of 44 or higher.

Undocumented Students

Students who are undocumented are considered domestic students, not international students for admissions consideration. They must meet regular admission requirements. Undocumented students are not eligible for financial aid or scholarships.

Orientation

All new students (including transfer students) attending main campus are required to attend and participate in [orientation](#). Orientation is when students learn important information on academic policies and procedures that students are expected to follow while attending LSSU. Students will also learn about the wide range of services available to assist them in having a successful university experience.

Part-time Enrollment

Students may enroll as a part-time student and take up to 11 credits per semester in courses for which they have sufficient academic background. United States citizens or permanent residents attending part-time who are not seeking financial aid, a degree, or certificate, do not have to formally apply for admission.

Canadian (commuter) students wishing to attend part-time must apply for admission and be accepted into a degree program. All other international students must maintain full-time enrollment (12+ credits) to maintain F-1 status.

Part-time students (non degree) are not assigned a faculty advisor. Students are encouraged to seek assistance in selecting courses from the appropriate academic departments.

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

Career and Technical Education

Lake Superior State University recognizes the excellent academic achievement of students completed through the Career and Technical Education programs throughout the state by awarding university credit for work completed while in high school. Through this partnership students are able to begin their university studies by completing their CTE curriculum. Lake Superior State University is a proud partner with the Michigan Department of Education, Michigan High Schools, and Michigan Career and Technical Education Centers in providing direct pathways for students to continue with post-secondary education. Through [coordinated Articulation Agreements](#), LSSU assists students to realize a seamless and systematic transition, maximizing the use of resources and minimizing duplication of content as students move from a secondary to postsecondary educational experience.

Credit by Examination

A student may earn university credit by examination. The university grants credit from Advanced Placement, International Baccalaureate (IB), College Level Examination Program (CLEP) and departmental exams. If a student is already attending Lake State, he or she may earn credit through both CLEP and departmental exams.

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

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

Advanced Placement Program (AP)

Advanced Placement Exams are administered through high schools each May. LSSU grants credit in select AP exams passed with a score of three or higher. If an essay is part of an individual exam, it must be submitted to university testing services for evaluation. To receive credit, the essay must be satisfactory and the student must have a minimum score of three on the test. [Credit for AP is granted as shown on the table.](#)

International Baccalaureate (IB)

Lake Superior State University offers college credit for students who complete IB coursework with strong results. LSSU will grant credit only for Higher Level exams and scores of 5 or above. [Credit for IB is granted as shown on the table.](#)

College Level Examination Program (CLEP)

Students may take CLEP exams at a computer testing center, including Lake Superior State University's Testing Services. LSSU offers CLEP exams by appointment. Credit for CLEP is granted as shown on the [table](#).

Students 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.

Dantes ACE Credit

LSSU is proud to accept credit for prior military experiences. Once LSSU receives an official transcript, the transcripts (including military training) will be evaluated and credit will be granted based on American Council on Education (ACE) recommendations. If a student's Dantes equivalence is not listed, contact the Registrar's Office for further review. [Credit is granted as shown on the table.](#)

Departmental Exams

Departments may provide their own examinations for certain courses. Students must have the written approval of the appropriate dean to take the examination. The [Credit by Departmental Exam Application Form](#) can be found online and in Anchor Access. There is a fee charged per credit hour. An examination grade of 2.00 or better is required for credit to be earned. Credit earned by exam is recorded as transfer credit on the student's transcript. Some universities may not accept transfer credit earned by departmental exam.

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

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Overview

Financial Aid Mission Statement

The mission of the Financial Aid Office is to provide accurate and timely financial aid information to students to meet their educational expenses.

Our goal is to offer all students a balanced financial aid package that is competitive and attractive, and best utilizes the resources available.

We strive to assist and educate our students by providing the best service possible so that they can focus on their educational experience.

Financial Aid Office

The LSSU Financial Aid Office staff is available to assist students with the financial aid process. Our experienced staff is available during office hours to respond to financial aid questions and requests. We can meet virtually, via phone or in the office. Financial Aid staff can be contacted via email - finaid@lssu.edu, phone - (906)635-2678, or text - (906)379-9557. The Financial Aid Office is located in the Fletcher Center for Student Services.

Financial Aid Offer

Financial aid is any money used for students' educational expenses and includes grants, scholarships, loans and student employment. An offer of financial aid in the form of a university scholarship is made when a qualified student is initially admitted to LSSU. Other offers of aid follow the admission and receipt of federal applications or athletic tenders. LSSU participates in federal, state and province aid programs and provides a generous institutional scholarship and grant program. An "Official Offer of Award" letter from the Financial Aid Office is sent after all documents needed to complete a student award are received and reviewed.

Applying for Federal Financial Aid

To apply for most all forms of aid, students must complete the FAFSA. This application must be renewed each year for a student to continue receiving financial aid. For State of Michigan programs, the priority deadline is March 1st. Lake Superior State University's federal school code for the FAFSA is 002293.

Scholarship Selection

Students are automatically considered for Board of Trustees Scholarships upon admitting into the institution. For these admission based scholarships, amount is determined by high school or transfer GPA. See below for the scholarship renewable requirements.

Satisfactory Academic Progress (SAP) Requirements for the Retention of Financial Aid at Lake Superior State University

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 include Federal Pell Grant, Federal Work-Study, Federal Supplemental Educational Opportunity Grant, Federal Direct Loans, Federal PLUS Loans, State of Michigan and Institutional Scholarships, Grants, Loan and Work Programs, and some Rebates and Tuition Waivers.

The **minimum requirements** for all types of financial aid include three standard measures:

Minimum GPA Standard:

- Maintain a 2.0 cumulative LSSU grade point average
- Students who fail to meet this requirement will be placed on financial aid warning for one semester. Failure to meet this requirement after the warning semester will result in suspended status, which the student will lose all federal, state, and institutional eligibility.

Credits Earned Standard:

- Earn 67% of credits attempted at LSSU throughout your academic career
- Attempted credits are courses you are enrolled in after the end of the add/drop period, which is after the first 6 days of the start of the semester.
- Example: 48 earned credits / 56 attempted credits = 85% of credits earned
- Students who fail to meet this requirement will be placed on financial aid warning for one semester. Failure to meet this requirement after the warning semester will result in suspended status, which the student will lose all federal, state, and institutional eligibility.

Maximum Time Frame:

- Complete the highest degree being sought within 150% of the published length of the program. For example, students working on a baccalaureate program of 124 credits may receive aid for 186 attempted credits, including transfer credits.

Degree	Average Credits Needed	Maximum Time Frame
Paramedic Certificate	40	Within 60 attempted credits
LPN Certificate	47	Within 70 attempted credits
Pre-Nursing BSN	56	Within 84 attempted credits
Associate	62	Within 93 attempted credits
Bachelor	124	Within 186 attempted credits
Teaching Certificate	136	Within 204 attempted credits
Master's	36	Within 54 attempted credits

One WARNING SEMESTER

If a student does not meet the Financial Aid Satisfactory Academic Progress (SAP) at the end of each semester, the student will be given one warning semester. Students may receive aid during the warning semester. If a student fails to meet the standard for the second consecutive semester enrolled, the financial aid **will be suspended**. During the *WARNING SEMESTER*, it is **highly recommended that students plan ahead and work with an advisor to correct deficiencies**.

Financial Aid Suspension

No aid will be granted once a student's eligibility is suspended, including but not limited to federal, state and institutional aid.

Right to Appeal

A student whose aid is suspended may request reinstatement through the Financial Aid Appeals Committee. The student must effectively demonstrate that the failure to meet satisfactory Academic Progress (SAP) was due to an unusual or extenuating circumstance, and explain what has changed. [The directions and required forms for the appeal process are available online.](#)

Financial Aid Self-Reinstatement

Once financial aid is suspended, both the cumulative GPA and credit hour completion standards must be met in subsequent semesters of at least six credits before reinstatement of aid is possible. Students who successfully complete a minimum of six credits at LSSU while not receiving financial aid must contact the Financial Aid Office to request a review for reinstatement.

If completion of "I" grades or other record changes warrant a reinstatement, a copy of the transcript must be submitted to the Financial Aid Office with a written request for a review.

Repeat Policy for Financial Aid Recipients

Students may use financial aid to repeat coursework that has been previously failed. Students may also use financial aid one time when repeating coursework to improve an earned letter grade of D- or higher.

For example, a student taking a course for the first time who received an F grade could have financial aid to repeat the course. If the student received a D grade for the repeated course, the student **could** have financial aid one more time to repeat the course to raise the grade. Students advised to retake passed courses more than once to improve their GPA may do so at their own expense, provided the repeats are allowed by the department.

NOTE: Satisfactory Academic Progress Policy is in compliance with the Department of Education Final Regulations published Oct. 29, 2010 - 34CFR 668.16(e), 668.32(f) & 668.34.

LSSU Scholarship Renewal Requirements

If your scholarship was offered to you as a "renewable" award, it is important that you have met the criteria listed below each spring when your eligibility is reviewed for the next year.

- Board of Trustees Freshman merit scholarship: **2.75 LSSU cumulative GPA**
- Full-Tuition Scholarships: **3.00 LSSU cumulative GPA**
- Full-time enrollment each semester; must earn 24 LSSU credits each academic year.
- Awarded up to 8 consecutive semesters or until 1st Bachelors Degree is earned, whichever is first.
Students in their teaching internship semester may be eligible to receive a 9th semester renewal.
- Awarded for Fall and Spring semesters only, not available for use in summer semesters.
- To receive the on-campus component of any scholarship, you must be in the on-campus housing program for the semester. If you leave on-campus housing, the room and board award will be terminated.

NOTE: Scholarships and other institutional funds provided as grants or scholarships or stipends for campus R&B students, will not exceed the basic rate

cost of housing and board. This includes RA Grant, LSSU Supplemental Grant, the LSSU Housing Grant and all room and board components of Board of Trustees scholarships.

- Students at LSSU Regional Centers and meet consortium agreement requirements, if enrolled at least half-time (6+ credits) at LSSU, may use a semester of eligibility at a prorated amount.
- Must meet [Satisfactory Academic Progress](#) policy requirements.

Transfer Scholarships

Formula to determine the maximum number of semesters of eligibility:

- Senior (88+ credits) = Two semesters of eligibility
- Junior (56-87 credits) = Four semesters of eligibility
- Freshman/Sophomore (12-55 credits) = Six semesters of eligibility

Length is based on number of ATTEMPTED credits prior to LSSU

NOTE: Some types of financial aid awards, such as an employee rebate, the Native American Tuition Waiver, or the Tuition Incentive Program, could affect your eligibility for an LSSU scholarship. Please contact the Financial Aid Office for further details.

Frequently Asked Questions

- Full tuition scholarships are limited to 12-16 credits per semester for the academic year and do not include any type of fee.
- Full tuition scholarships can not be combined with tuition waivers, such as Michigan Indian Tuition Waiver or Employee Rebates.
- Recipients of foundation scholarships are encouraged to write a thank you letter to the donor.

New Scholarships for Current Students

Renewable scholarships are based on your grade level and number of credits transferred or earned at the time of your award. For example, if you are offered a renewable scholarship as a sophomore, you will generally be eligible for two additional years of scholarship. If an ending date is not stated in your offer of scholarship, please contact the Financial Aid Office if you have questions about the renewal features of your award. Except for students in their fifth year of the teaching program, scholarships are generally not available to students with more than four years of higher education or eight semesters of study or more than 124 attempted credits.

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Overview

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

Residency Policy for Tuition Purposes

Effective the Fall Semester 2018, Lake Superior State University offers a one rate tuition for all students worldwide.

Policy: Tuition/Fees

All tuition and fees are payable according to established due dates. Students are required to agree to a financial responsibility statement before registering for any classes at LSSU. Students delinquent in payment of a financial obligation are subject to enrollment cancellation and/or late fees until all amounts due the University are paid or satisfactory arrangements are made with Business Operations.

Anyone who is delinquent in any obligation to the University will not be allowed to register for classes. Additionally, University services will not be provided until financial obligations are met. Registration is not complete until fees are paid. A check or draft returned to the University and not honored by the bank constitutes nonpayment and may result in cancellation of registration.

Students auditing a class are assessed the Audit Class Tuition Rate and applicable fees for the course. A grade of AU is recorded on the student's official transcript upon completion of the course. Michigan residents who are 60 years of age or older may audit undergraduate courses compliments of LSSU. The student will be responsible for any associated fees.

In addition to tuition, there are various fees assessed to students in specific situations.

Activity Course Fee: The activity course fee is an additional charge applied to one-credit courses in music and recreation. This activity fee is assessed on all students enrolling in one-credit music (one-credit activity and performance courses with an MUSC prefix, except MUSC210) or one-credit recreation (one-credit activity courses with an RECA prefix) classes.

Administrative Fee: Administrative fees will be charged for departmental exams.

Distance Education Fees: These fees are charged to offset the costs of non-traditional modes of instruction, including any course listed as online, interactive t.v., or courses recorded for future distribution and viewing. Distance Education Fees are not charged on any course in which Regional Center Fees are also assessed.

New Student Administrative Fee: The new student administrative fee is a one-time fee used to offset administrative and programmatic costs associated with transitioning new students into the University. The new student administrative fee is assessed on all new and transfer undergraduate students when they are admitted to a degree program.

Late Fee: Students who do not make payment or enroll in a payment plan by the due date will be charged a 1.5% late fee. For each month thereafter, the University will charge an additional 1.5% late fee for any outstanding balance on the 16th of each month and a hold will be placed on the student's account until full payment is made. The hold prevents registration into classes for subsequent semesters and inability to receive a copy of a University transcript. Balances still outstanding after 90 days will be turned over to collections.

Students who are receiving VA Education Benefits are expected to pay tuition and fees by the payment deadline date established by the University each semester, with exception to the following:

- Students receiving Post 9/11 Benefits and have a current semester course certification on file in the Registrar's Office will automatically receive a deferment on tuition and fee payment until payment arrives from the VA.
- Students participating in the Vocational Rehabilitation Program, Chapter 31 will not receive late fees for any charges eligible for payment in accordance with VR&E.

Late Registration Fee: The Late registration period is defined as the period after the first payment due date for each semester until the close of the six day add/drop period. For the fall semester, the first due date is August 15. For the spring semester the first due date is December 15. No late registration fees are charged for the summer semester. Students who register in person or online during the late registration period are assessed a \$100 late registration fee. Students who register for classes after the six day add/drop period will be assessed a late registration fee of \$200.

Liability Insurance Fee: The liability insurance fee is a one-time per semester charge for students enrolled in select biology, emergency medical services, kinesiology, and nursing courses that involve direct student/patient contact.

Non-Sufficient Funds (NSF) Fee: A NSF fee will be assessed for any check or bank draft returned due to insufficient funds.

Program Fees: The program fee is an additional charge per credit for courses in accounting, biology, Business, cannabis business, cannabis chemistry, chemistry, culinary, economics, emergency medical services, engineering, environmental science, finance, geology, international business, kinesiology, management, marketing, natural resources, natural science, physics, and nursing.

Regional Center Fee: The regional center fee is an additional charge per credit, charged for courses delivered by instructors at the regional centers. The regional center fee is assessed on all students registering for a course at an LSSU

Regional Center.

Special Course Fee: Special course fees are charged to cover costs of supplies, equipment, maintenance, and student transportation over and above the normal costs for all courses. These fees become part of the department supply and equipment budget. Special course fees are assessed on students taking the course for which the fee is charged.

Student Activity and Media Fee: This fee was requested by the Student Government and approved by the Board of Trustees on June 30, 2003, to support Student Government, student activities, the student radio station WLSO, and the student newspaper, The Compass.

The student activity and media fee is a flat fee assessed on all enrolled students except those registered for internship classes, for classes at a regional center, or dually-enrolled at LSSU and a high school.

Vehicle Registration Fee: This fee entitles a student to register one student vehicle to be parked in a campus parking lot.

The fee is refunded only under certain conditions. Vehicle registration information is available at <https://www.lssu.edu/public-safety/parking/>.

Withdrawal/Refunds

If you decide to drop your classes, you must complete the following:

1. Pick up a Withdrawal Form at the Registrar's Office, located in the Fletcher Center for Student Services.
2. Gather the required signatures (shown on the form). Note: if you have received federal loans as financial aid, you will be required to complete an exit interview at the Financial Aid Office. You may also be required to speak with a financial aid officer. You will need to provide the complete addresses and phone numbers of two people (living at different addresses) as references for the exit interview process.
3. Deliver the completed form to the Registrar's Office and clear any outstanding charges or holds that may prevent your return at a later date or prevent the release of your academic records. Your withdrawal date will be determined by the date the completed form is submitted to the Registrar's Office. Any refunds will be calculated as of that date. Federal Title IV financial aid refunds will be calculated based on the last day of attendance as reported by the instructors.

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

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

All withdrawals should be done in person. If you are unable to complete the process in person, the Registrar is the only University authority that can authorize the process of your withdrawal over the phone. Please contact the Registrar's Office at 906-635-2682 for assistance. If you are a federal financial aid recipient, you will need to complete your exit process with the Financial Aid Office.

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

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

- First, your account will be credited according to Lake Superior State University's Refund Policy (on or prior to the 38-day withdrawal period). The summer semester refund policy is shortened.
- Then, your federal financial aid will be reduced in direct proportion to the length of time you remained enrolled, up to 60 percent of the semester, following the Federal R2T4 policy. Federal student loans, parent loans and federal grants will be returned to the federal government on your behalf for the portion of time you are not attending classes in the semester.
- If you have any Michigan or institutional financial aid, your aid will be reduced according to the university refund policy. Private and other state scholarships and grants will follow the refund rules or restrictions on the funds.
- PLEASE NOTE: If you have received a payment for excess financial aid and you withdraw, you could owe the University and/or the federal government money.
- Any remaining refund, after all funding sources have received the appropriate credit, will be refunded directly to you.

For example: If there are 101 days in the semester and you withdraw on the 45th day, your federal aid would be reduced to 45% (45/101). If your total cost to attend was \$4,000 and it was paid with federal aid of \$2,400 and a personal payment of \$1,600, your federal aid would be reduced to \$1,080. You could owe the University \$1,320.

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

If you fail to demonstrate attendance by earning credits for a semester while receiving federal aid, your aid may be returned and you may owe unearned funds back to the University.

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

Students who fail to earn credits for the semester while receiving financial aid are subject to Title IV refund requirements and may lose all or part of their financial aid.

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

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

Room and Board Applications

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

The exceptions are:

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

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 the first room and board payment is not received by June 1st (May 1st for returning students). If application is canceled by notification to the Director of Campus Life and Housing by June 1st (May 1st for returning students), all monies paid will be refunded. If cancellation is between June 1st (May 1st for returning students) and the opening of the residence halls, LSSU retains \$100. Cancellation after the halls open is subject to a \$500-\$750 penalty. You must be accepted for admission and be enrolled in and attending classes to live on campus.

Room and board: Students are billed for room and board and tuition each semester. A payment plan may be set up with Business Operations located in the Fletcher Center.

Housing deposit: If you are living on campus, there is a \$150 damage deposit prior to checking into the hall. This deposit is refunded, less monies owed to the University, when you leave campus housing.

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

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Campus Life



Campus 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 60 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, golf, tennis and track for men and women; ice hockey for men; and volleyball for women. 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.

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The LSSU Ombudsman

If you're a student in need of assistance to resolve a conflict or dispute within the University then you should contact the LSSU Ombudsman. The Ombudsman is a senior faculty member appointed by the President and Provost to assist students in resolving these types of issues. The Ombudsman carries out these duties in a neutral, impartial, confidential, informal and independent manner.

What does an Ombudsman do?

Following a request for assistance, the Ombudsman will take one or more of the following actions: (1) listen carefully to the concern, (2) explain relevant student rights and responsibilities, (3) review relevant University policies or regulations, (4) suggest fair and equitable options, (5) refer the individual to an appropriate university resource or (6) investigate, when necessary.

Specifically the LSSU Ombudsman:

- meets with the respective student and listens intently,
- discusses conflicts, disputes, and complaints that the student has about the functioning of the University, including policies, and procedures, the actions of others, and treatment that is unfair,
- helps the student identify and evaluate the options available to address his/her concerns
- works with the student to promote the development of critical thinking and problem solving skills,
- helps the student to understand their rights and will encourage and coach the student to work on their own behalf to resolve conflicts,
- answers questions or find others who are able to answer the respective questions,
- engages in shuttle diplomacy between parties who are finding it difficult to solve a problem between the two of them, or
- identifies problem areas, and areas of conflict, that exist within the University and makes recommendations to the University leadership.

Are there things the Ombudsman cannot do?

Yes. The Ombudsman is not an advocate for any group on campus; instead, the Ombudsman is an advocate for fairness. The Ombudsman also does not provide legal service, represent students or instructors at academic grievance or disciplinary hearings or mediate disputes between or among faculty or between faculty and administrators. The Ombudsman does not accept formal complaints, or notices, for the University.

Specifically the LSSU Ombudsman does not:

- administer sanctions,
- determine "guilt" or "innocence" of those being accused of wrong doing ,
- make academic or administrative decisions for other parts of the University
- give legal advice,
- participate in formal grievance processes, hearings or judicial processes,
- accept official "notice" for the University about issues,
- keep official University records and/or written accounts of individual meetings with students, or
- respond to subpoenas or other requests for information because of assertion of Ombudsman privilege.

How can I Contact the Ombudsman?

Students may contact the Ombudsman in person, by email, or by phone. Please remember that e-mail is not recommended for confidential discussions. The LSSU Ombudsman is:

Dr. Sally Childs
 Norris Center, Room 108D
 Phone #: 906-635-2610
 Email: schilds@lssu.edu

Other Information:

According to the International Ombudsman Association (www.ombudsassociation.org) Code of Ethics, an Ombudsman practices:

Independence

An Ombudsman is independent in structure, function, and appearance to the highest degree possible within the organization

Neutrality and Impartiality

The Ombudsman, as a designated neutral, remains unaligned and impartial. The Ombudsman does not engage in any situation which could create a conflict of interest.

Confidentiality

The Ombudsman holds all communications with those seeking assistance in strict confidence, and does not disclose confidential communications unless given permission to do so. The only exception to this privilege of confidentiality is where there appears to be imminent risk of serious harm.

Informality

The Ombudsman, as an informal resource, does not participate in formal adjudicative or administrative procedure related to concerns brought to his/her attention.

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Academic Policies

Please familiarize yourself with the academic policies described in this catalog. They will help you obtain your educational objectives. Faculty advisors, staff and administrative personnel will also help you negotiate your way through these policies — seek their advice whenever you have questions!

Student Classifications

0 to 25 credits = freshman

26 to 55 credits = sophomore

56 to 87 credits = junior

88+ = senior

The Academic Year

Lake Superior State University operates on a semester system. There are two regular 15-week semesters (fall and spring) which begin in August or September and end in April or May. The summer semester consists of classes offered in two six-week sessions, or one 12-week session. Please view the [Important Dates](#) for specific information for each semester.

Credit Hour Policy

In accord with federal regulations, state guidelines and the Higher Learning Commission standards, LSSU defines a semester credit hour as follows:

A [semester] credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:

(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester, or the equivalent amount of work over a different amount of time; or

(2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward to the award of credit hours. 34CFR 600.2 (11/1/2010)

<http://policy.hlcommission.org/Federal-Regulation/assignment-of-credits-program-length-and-tuition.html>

LSSU defines “one hour of classroom or direct faculty instruction” as 50-60 standard minutes. Hour totals for a course include time used for evaluations, tests and final examinations. The amount of credit awarded for any activity should be in keeping with the learning outcomes; evidence of student achievement must be documented.

Course learning outcomes are defined by the school and approved as part of a curriculum review process which includes recommendations from the University Curriculum Committee – a majority faculty body with representation from every school and the Administration. Outcomes are established independently of the modality of course delivery such that the credit hours for a course title will not change if the course is offered in face-to-face sessions with synchronous faculty-student interaction, in

blended (hybrid) delivery, or in a fully online course.

Student-led tutoring, such as Supplemental Instruction or Structured Learning Activities, provides peer support to reinforce, expand and strengthen understanding of course content. Credit is not awarded for student-led tutoring, tutoring activities do not contribute to calculation of course grade, and participation **cannot** be required.

The standard University semester is 15 weeks, including the final examination week. Courses scheduled for compressed schedules carry the same academic credit hours, meet the same student learning outcomes, and share the same expectations for an equivalent amount of work as defined by the semester credit hours, as a normally scheduled course.

All definitions and standards apply to all instructional modalities and instructional locations, including dual enrollment, Early-Middle College, Regional Centers, online, and blended (hybrid) courses.

TYPES OF COURSES (hours indicated represent the minimum requirements):

Clinical – courses that require observation, participation, client/pupil studies, etc. Specific programmatic accreditation requirements, or applicable state regulations may set higher standards, but shall not be lower than the base of 1 credit hour awarded for each three (3) hours of clinical experience per week for a total of 45 hours in a 15-week semester.

Individualized/Directed Study – courses that are based on consultation and guidance from an instructor with meeting times established as TBA. One credit hour shall be awarded for each three (3) hours of student work per week for a total of 45 hours in a 15-week semester.

Laboratory – courses where the instructor provides direct supervision of student creative or investigational work, whether individually or in small groups, in a controlled experiential learning environment requiring specialized equipment and/or facilities. Laboratory hours are determined by the amount of time the student would spend to conduct specific faculty directed activities, including the development of written laboratory reports. Travel to and from distant experiential learning locations is not part of laboratory time. One credit hour shall be awarded for each three (3) hours of student work per week for a total of 45 hours in a 15-week semester.

Lecture – courses focused primarily on one-way communication (irrespective of modality) from instructor to students, but may be combined with elements of in-class discussion or other individual or group learning activities. One credit hour shall be awarded for each one (1) hour of lecture combined with two (2) hours of out-of-class work per week for a total of 45 hours in a 15-week semester. The course syllabus should identify the out-of-class work required to meet the credit hour standard.

Lecture/Laboratory – courses which have both lecture and laboratory component have credit awarded as though each were considered separately. A course with a designation of SCIN100 Science (1,2) 2 cr would require for each of the 15 weeks, one (1) hour of lecture instruction per week, two (2) hours of student work outside of class per week for the lecture, two (2) hours per week of supervised laboratory instruction, and one (1) hour per week of student work outside of lab – for a total of 45 hours for lecture and 45 hours for lab – 90 hours total.

Recitation – an optional component of a course where the instructor provides guided study to reinforce and apply course content in problem solving and other activities similar to the assignments in the course. One credit hour shall be awarded for each one (1) hour of Recitation combined with two (2) hours of out-of-class work per week for a total of 45 hours in a 15-week semester. The course syllabus should identify the out-of-class work required to meet the credit hour standard.

Practicum/Internship – courses where the title or course description define the course as a practicum or internship, including cooperative education courses. Students receive

credit for practical, degree-related experiences gained outside the classroom or laboratory. One credit hour shall be awarded for each three (3) hours of student work per week for a total of 45 hours in a 15-week semester. Additional departmental requirements may also be denoted in the course description.

MODALITIES OF COURSE DELIVERY:

The credits awarded for a particular educational experience will be based on the credit determination derived from the course type, irrespective of the modality used for course delivery, including delivery through online and blended types.

Standard – a traditional modality for courses where the instructor meets and interacts with students in the same physical space for 100% of the instructional time. Sometimes referred to as face-to-face, grounded instruction it is always synchronous and may include lectures and/or structured whole class or group discussions and other activities. Courses delivered in a standard modality may incorporate the use of online learning management systems, like Moodle, to support student learning through activities such as the viewing of documents, participation in asynchronous discussions, and submitting assignments in fulfillment of the requirement for out-of-class student work.

Other – Courses which are not delivered in a traditional modality must meet the same credit-hour requirement as standard courses, including evidence of active student engagement through structured synchronous and/or asynchronous interactions with students. Such interactions may include web-based delivery, online learning management system tools such as chats, discussion boards, written responses to student posts, feedback on student writing and other course assignments, etc. "Time spent logged into a learning management system does not constitute active faculty teaching or active student learning."

Blended – a course modality where instructors interact with students in the same physical space for less than 100% of the instructional time with the remainder of the instructional time provided through forms of distance education. Sometimes referred to as hybrid courses, courses delivered in this modality must demonstrate active student engagement.

Online – a course modality where instructors interact with students for 100% of the course through one or more forms of distance delivery, including web-based interaction and online learning management systems.

Academic Transcripts

You may have an official copy of your permanent records sent to schools, companies and other places or persons of your choice. Student copy transcripts are issued directly to you and can be requested free of charge at the Registrar's Office in the Fletcher Center. You must show a picture I.D. Any financial or other obligations to the University must be cleared before a transcript is released. You may also print an unofficial transcript online using Anchor Access.

Student Curriculum Choice and Advising

When you apply for admission, you are asked to declare a major. The major you declare will determine 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 by processing a Major Change Form, available in Anchor Access and in the academic offices. Major Change Forms must be filed with the Registrar's Office for each major change. If you are unsure of your major, you will be assigned to the Liberal Arts-Undecided major.

Semester Course Selection

Registration for the next semester takes place near the end of your current semester.

Three weeks before registration, course schedules listing times, dates and locations

will be available [online](#) and in Anchor Access. Review the class offerings, read the instructions for scheduling, and meet with your advisor to select courses for the next semester.

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

Please review all the registration information carefully as it has dates for registration according to class level, dates for tuition payments, and information regarding prerequisites, corequisites and other course requirements.

It is your responsibility to ensure that the classes you take count toward your degree program. You may, however, be required to take developmental courses (course numbers beginning with "0", such as MATH088), which will not count toward graduation.

Prerequisites: Many courses require that you complete English, reading and/or mathematics, or other preliminary classes before registering for the course. If you are currently enrolled in a course which is prerequisite to a course you need the following semester, you may register for the course on the presumption you will successfully complete the current course. If you do not earn the prerequisite grade required for the next course, you should consult your advisor and make a plan for an alternate course. Exceptions may be made only by the dean of the college or the instructor of the course.

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 appropriate dean. Students on academic probation should not take more than 15 credits per semester. Students having been academically dismissed and allowed to return are limited to 13 credits per semester.

Adding/Dropping courses through the Add/Drop Period: You may add or drop courses online using Anchor Access through the sixth day of the fall or spring semester. If you are attending a summer semester, you can add or drop courses online through the fourth day of the semester.

If you wish to add a course that is full or without having the necessary prerequisites, you must contact the instructor for that course to request permission. If the instructor approves the request, he/she will complete an Instructor Override for you. You must then go online and register for that course.

Courses dropped through the sixth day (fourth day for summer semester) will not appear on your academic transcript.

Adding courses after the Add/Drop Period of the semester: Online registration ends on the sixth day of the semester (fourth day for summer semester). If you wish to add a course after this date, you must have the instructor's permission. You will need to complete a Schedule Adjustment Form, have the instructor sign it giving permission, and then process the form at the Registrar's Office, located in the Fletcher Center for Student Services.

Dropping courses after the Add/Drop Period of the semester: You may drop a full-semester course during the first ten weeks of the semester. For courses running less than a full semester (e.g. seven-week class), check online for the official drop dates — the time period for dropping will be approximately equal to one-half of the course instructional period. If you drop a course, you will receive an N grade on your academic transcript. N grades are not counted in the academic GPA.

Dual Enrollment for High School Students

Effective July 2012, state law allows qualifying 9th and 10th grade students (in addition to 11th and 12th grade) to attend as dual enrolled students in a postsecondary institution. [To be eligible](#), students must be enrolled in at least one (1) high school

class in a school district. A student must receive a qualifying score in each subject area on a reading assessment or the Michigan Merit Exam (MME) in order to be eligible to take the relevant courses. Otherwise, he or she can only take courses in the area for which a qualifying score was achieved. If no qualifying score was achieved, the student is limited to a course in computer science, a foreign language, or fine arts, as permitted by the school district. Students must meet any course prerequisite requirements.

Students must be in Good Standing (cumulative gpa of 2.00 or higher) at LSSU to be eligible for continued enrollment. Students on probation are limited to course repeats, if available.

Eligible students are limited to no more than ten (10) courses overall if the school district covers the cost; this limit does not apply if the student is covering costs.

Attendance as a high school dual enrollee does not constitute admission to a degree program. LSSU encourages high school students to apply for admission at the start of their senior year.

Repeat Policy

This policy is in effect for all students starting at Lake Superior State University as of the Fall Semester 2011. You may repeat a class in which you earn a grade other than "W" or "N" only twice without special permission.

1. Courses transferred from other institutions are included in this policy.
2. Both the original and repeat grades will show on the transcript, but hours earned toward graduation will only count once.
3. For the purpose of calculating the cumulative grade point average, only the grade of the last attempt will be used.

To repeat a course more than twice, the student must attain the permission of the course instructor and the dean of the college offering that course. Permission is only granted under extenuating circumstances.

Policy on substitutions or waivers for failed classes

If you fail a class required for your degree program, you must repeat the class and receive a passing grade. If the failed class is no longer offered because of program changes and/or course deletions, the dean may approve a substitution or waiver recommended by the academic chair. The chair must provide reasons for the recommendation on the substitution/waiver form which is sent to the dean's office for approval. Upon approval, the dean will then send the form to the Registrar's Office.

Withdrawal Policy

Students dropping all courses within the first ten weeks of a fall or spring semester will be considered as withdrawn from Lake Superior State University. Students withdrawing may be eligible to receive a partial tuition refund following the [refund schedule](#), and those with financial aid will be subject to Federal Title IV refund regulations. The last date of attendance in an academically-related activity is required for all courses and may impact a student's financial aid and refund status.

Late Withdrawal: Students requesting a late withdrawal from one or all of their classes after the official drop date need to complete a [Request for a Late Withdrawal and/or Tuition Appeal Form](#) and have documented extenuating circumstances. The decision to grant the late withdrawal and/or tuition appeal will be made by the Late Withdrawal Committee. Appeals are reviewed in the order received and results may take from two to four weeks. The need for additional documents may delay this timeframe. All decisions by the committee are final and not subject to appeal.

Except for documented and exceptional circumstances, late withdrawals/tuition appeals

will not be accepted more than one year after the end of the term for which the late withdrawal/tuition appeal was documented. All petitions filed after the one-year deadline must be granted an exception prior to consideration by the Late Withdrawal Committee.

Class Attendance

Regular class attendance and active participation in classes are important elements in the learning process. You are at the University primarily for the sake of intellectual growth and development. Attendance and participation provide appropriate opportunities for the evaluation of your progress.

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

Participation in an official University function is an excused absence when approved by the provost. You will not be penalized for such participation. You are responsible for work missed and must confer with your instructor on this matter.

Grading System

Grades and Grade Points:

Grade	Grade Points per Credit
A+	4.00
A Excellent	4.00
A-	3.70
B+	3.30
B Good	3.00
B-	2.70
C+	2.30
C Average	2.00
C-	1.70
D+	1.30
D Inferior	1.00
D-	0.70
F Failure	0.00
I Incomplete	0.00
N No Grade	0.00
W Late Withdrawal	0.00
AU Audit	0.00
CR Credit	0.00
CR (undergraduate level) is equal to a 2.00	
CR (graduate level) is equal to a 3.00	
NC No Credit	0.00

Grade Point Average (GPA): To calculate your GPA for a semester, divide the total quality points earned by the GPA hours. GPA hours include those earned or failed but not those classes taken for credit/no credit. Cumulative GPA is calculated by dividing total quality points earned by the number of GPA hours carried in all semesters. If you repeat a course, count only the credits carried and the points of the last grade earned. Only 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, minor(s), and general education is required. Some programs require a higher GPA in the major and minor curriculum.

"I" (incomplete) grade: Students may request an "I" (incomplete) grade for a course if extenuating circumstances beyond their control prevent the completion of the course requirements by the end of the semester. Examples of extenuating circumstances may include health issues, death of a parent/spouse/child, or military service. Students and faculty must be aware that an "I" (incomplete) grade counts toward the student's attempted credits for a semester and may thus affect Satisfactory Academic Progress. Students receiving financial aid should consult with the Financial Aid Office to discuss their specific situation when electing to drop a course or requesting an "I" (incomplete) grade.

Appropriate documentation is required. Students will need to be enrolled and have completed the majority of the work required for a course during the semester to be eligible to request an "I" (incomplete grade). An "I" (incomplete) grade may be issued in a course that by design can not be completed in one semester. An example of this type of course would be a study abroad course that requires the student to be out of the country until after the official semester end date. An "I" (incomplete) grade shall not be issued as a midterm grade for any course.

Students must work with the instructor to complete all missing requirements by a date specified by the instructor. If a date is not given, the student will have a maximum of two semesters (excluding summer semesters) to complete the requirements for the course and to have the "I" (incomplete) grade changed to an appropriate final grade. Students should not re-enroll in any class in which they currently have an "I" (incomplete) grade.

If the "I" (incomplete) grade has not been changed to an appropriate final grade by the end of two semesters (excluding summer semesters) the "I" (incomplete) grade will be changed to an "F" (failure) grade.

Students are **not** eligible to receive a degree or certificate with an "I" (incomplete) grade on their academic record.

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

Credit/No Credit Courses

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

1. One course per semester may be taken as credit/no credit.
2. Only 12 credits of courses taken as credit/no credit may be applied toward a degree.
3. Courses that are required by your major, minor, or that are general education courses, can not be taken for credit/no credit.
4. You apply at the Registrar's Office to enroll for a credit/no credit course during the add/drop period; cannot change to regular grades after the add/drop 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 NC credit is assigned based on the grade your instructor submits.
7. 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.

Auditing Classes

Audits are designed for someone who wishes to take a particular course for its content, personal enrichment or academic exploration with no need for academic credit. The cost for an audited course is 50% of the standard tuition rate. Tuition is waived for Michigan residents who are 60 years of age or older, and verification of age must be provided to the Registrar at the time of enrollment. Individuals auditing a course will receive a final mark of AU (Audit) recorded on their LSSU academic transcript but will NOT receive university credit for the course.

An individual may register for courses on an audit basis provided space is available and all prerequisites have either been satisfied, or waived with the permission of the instructor. Individuals auditing a course shall be entitled to full classroom participation, and may complete all assignments and examinations for evaluation by the instructor, although these are not required for auditors. Not all courses can be taken for audit, and permission of the instructor (or Dean) is required prior to registration. Courses numbered below 100 may not be audited. Program fees, special course fees, parking permits, the purchase of textbooks, and required materials shall be the responsibility of the participant.

Audited courses do not count as part of an individual's official class load for determining financial aid eligibility, veteran's benefits or any other enrollment certification requirements. Students may change from an audit to credit status during the first week of classes, and only with the concurrence of the faculty member for the course. This change must be processed through the Registrar's Office for grading purposes. Requests for course audits will be processed beginning two weeks after the start of registration to ensure degree-seeking students have adequate opportunity to enroll prior to course auditors.

Students wishing to audit a course will need to complete the [Application for Auditing a Course](#) form and turn it in to the Registrar's Office.

Dean's List

Full time students carrying at least 12 graded credits of college-level courses (100 level or above) in a semester with a grade point average (gpa) of 3.500 or higher, and NOT having any incomplete ("I") grades, will earn Dean's List honors, which acknowledge outstanding academic achievement.

If a grade is changed within 30 days from the end of the semester because of an instructor error in the recording of a grade, or because the student has completed the work required to resolve an Incomplete ("I") grade, the student will be considered for Dean's List honors.

Effective fall semester 2006, students earning Dean's List honors will have this designation noted on their LSSU academic transcript.

Prior Learning Policy

Credit for Prior Learning (CPL)

LSSU recognizes that students may acquire expertise, skills and knowledge through individual study, employment, military training, community service or other experiences outside of the normal college setting, which is known as prior learning. LSSU credit may be awarded for prior learning through successful completion of standardized examination programs, (e.g. CLEP, Advanced Placement, DANTES), credit recommendations of the American Council of Education, or successful completion and evaluation of "departmental examinations". Credit may also be awarded upon successful completion of an individual Credit for Prior Learning Portfolio (CPL Portfolio) that documents the demonstration of learning outcomes for a specific course or set of courses.

All prior learning credits are considered transfer credits and are subject to the same policies as other transfer credits. Discuss your prior learning experience with your academic advisor, chair or dean for more information.

University residency requirements apply to all forms of prior learning (e.g. a minimum of 30 credits of the 124 credits required for an LSSU baccalaureate degree must be earned using LSSU coursework). See the Academic Catalog for the complete residency policy.

CPL Portfolio Program

The CPL Portfolio program grants credit after a successful faculty evaluation, and Dean approval, of a portfolio that demonstrates mastery of the learning outcomes for a specific course or set of courses. Unlike typical course articulations, no list of equivalencies exists since every person's prior learning experience can vary significantly. It is only through the CPL Portfolio review process that equivalencies are identified and credit awarded. Because of this, not all Lake Superior State University courses are eligible for CPL Portfolio review. Credits awarded through the CPL Portfolio review support a student's goals and are applied to a specific academic degree program. A typical portfolio will capture prior learning experiences from work experience (based on past employment), past training (such as classes, workshops, seminars, etc.), and life experiences (long-term activities that may have resulted in college level learning). The University provides guidelines and assistance for CPL Portfolio development through the School of Arts and Letters.

If you are interested in pursuing credit for prior learning through a CPL Portfolio, you should contact the Dean or the Chair of the School of Arts and Letters to review the process. After that meeting, you will be directed to a dean or multiple deans to review your request(s).

CPL Portfolio Criteria:

In order to be considered for CPL Portfolio credit review, a student must be currently enrolled in a degree program and his/her cumulative GPA must be a minimum of 2.00, or higher where required by the program. Furthermore:

1. All CPL Portfolio credit is considered non-LSSU credit (transfer credit) and is limited by LSSU policy to 60 credits and only 16 credits may be used to fulfill 400 level coursework.
2. CPL Portfolio-based credit may only be awarded for content which applies to the student's degree program. Approved CPL will appear on a student's transcript.
3. CPL credit may not be applied to fulfill the University's residency requirement.
4. CPL credit may not be used to satisfy the General Education Requirements of the University.

CPL Portfolio Guidelines:

1. Portfolios must be submitted to the Dean of the College or School responsible for the content review by the 12th Friday of the semester (two weeks before final examinations) during the academic year, or by the 2nd Friday in July for the summer semester. Students are not eligible to submit a CPL Portfolio in their anticipated term of completion (e.g. graduation term).
2. Credit will be granted for college-level learning and only for courses required for LSSU degrees.
3. Credit for any specific instance of prior learning can only be awarded once (e.g. credit for knowledge gained in mathematics cannot be awarded once through CLEP then again petitioned through a CPL Portfolio or transfer credit). All CPL Portfolio requests must be submitted at one time to facilitate coordination of credit awarded, and separate portfolios must be submitted to each School for all credits which the student seeks to have evaluated within the school.
4. The CPL Portfolio may be used to award credit for specific LSSU courses or for general elective credit applicable to the degree program. The amount of credit to be allowed through portfolio evaluation identification of specific courses for

substitution, if any, and the fulfillment of graduation requirement, if any, is determined by the Dean of the appropriate school under advisement of the school faculty.

5. While the School of Arts and Letters faculty provide general guidance and assistance, it is each student's responsibility to complete a narrative and a portfolio of documentation, which will be the basis for awarding credit.
6. To assist students interested in developing a portfolio for this purpose, the University may provide an elective portfolio course (e.g. USEM201 Prior Learning Portfolio Development).
7. CPL Portfolios will be evaluated on the alignment of learning evidenced with the specific course's or program's learning outcomes. Elements in the portfolio may include documentations of leadership and community service experiences, professional work experiences, creative contributions to society, and completion of professional training.
8. CPL Portfolios will be evaluated by faculty qualified to teach the course(s) for which the portfolio has been submitted.
9. Credit under this program cannot be obtained for learning when proficiency exams are required by the appropriate department.
10. Formal CPL Portfolio review to evaluate for credit requires an initial \$50 processing fee for each CPL Portfolio submitted using the [CPL Portfolio Review Form](#). If approval is received, the student will be required to pay an additional \$75 per awarded credit.

Course Grade Appeal Policy

Lake Superior State University has established procedures for students to appeal their final course grade. Situations where this appeal is applicable may include grade miscalculations, inconsistent application of grading policies and/or requirements, or actions that prevented the meeting of course learning outcomes. A student who has concerns regarding a final course grade may take the following steps:

1. **Initial Discussion between Faculty and Student:** Contact the course instructor and discuss the concern(s) within 20 UWD of posting of final grade. This will serve as an informal review and an opportunity for open dialog regarding the concern(s).
2. **Notification and/or Discussion with Academic Advisor by Student (or School Chair if Course Faculty and Academic Advisor are the Same Person)** allows for guidance in this process. This step is optional.
3. **Student Written Appeal to Faculty:** If the informal review does not lead to a satisfactory resolution, the student may choose to file a formal appeal. The appeal must be filed in writing with the Course Faculty within 5 University Working Days (UWD) of discussion with Faculty in Step 1. The appeal shall include:
 - [The Grade Appeal Record of Action Form](#): This form is to accompany all documentation of communication regarding the Grade Appeal issue.
 - Statement of appeal: this should be brief and specific.
 - Justification: present reasons for lodging the appeal with supporting evidence (all documentation must be provided at this point).
 - Remedy requested: cite the specific remedy desired.
4. **Faculty Written Response:** The Faculty shall respond to the appeal in writing to the student within five (5) University Working Days upon receipt of the appeal.
5. **Student Written Request to Dean:** If the Faculty's response does not lead to a

satisfactory resolution, the student may, within three (3) University Working Days of receipt of the response, request formal review of the appeal by the Dean of the College. The student shall submit the appeal and all related documents to the Dean.

6. **Dean Written Response:** The Dean shall respond in writing to the student, the course instructor, and the Chair. within five (5) University Working Days of receipt of the appeal.
7. **Student Written Request for Provost Review:** If steps 1-6 do not lead to a resolution of the concern, the student may petition the Provost within three (3) University Working Days. The student shall submit the appeal and all related documents to the Provost's Office with the completed Grade Appeal Record of Action.
8. **Provost Determination:** The Provost will make the final determination of the outcome of the appeal. Documentation will be provided to the Student, Faculty, Advisor, and Dean within 20 UWD of the receipt of the student request. The Provost may also exercise the option of appointing an ad hoc Appeal Board for advisement on this determination. The board may be comprised of an academic dean(s), student(s), and faculty.

General Information:

A University Working Day (UWD) refers to those days when the university is in normal operation, and university offices are open for business.

"Receipt" refers to the day upon which the person designated officially initials the appropriate document(s).

If the student does not meet the appeal timelines stated above, the appeal is considered closed and no further action is required. If university personnel do not meet the appeal timelines stated above, the student can advance the appeal to the next step. The Provost may grant an extension in time at any step due to extenuating circumstances; such extensions will be documented on the Grade Appeal Record of Action. The Provost may establish appropriate and reasonable extensions of time in cases where the student is not actively enrolled in the current semester, or where the course instructor is not assigned teaching duties for the current semester.

Undergraduate Academic Standing

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

For Undergraduate Coursework

(Effective Summer 2005)

Cumulative GPA Hours Carried at LSSU	Minimum for Good Standing*	On Probation	Dismissal
1 - 18.9	2.00	less than 2.00	two consecutive semesters on probation
19 - or more	2.00	less than 2.00	two consecutive semesters on probation or 1.60 or less gpa

You will be dismissed for academic deficiencies if you are on probation for two consecutive semesters at Lake Superior State University. If your cumulative GPA Hours

(as shown on your transcript) are 19 or more and your grade point average is 1.60 or less, you will be dismissed. GPA Hours are those used in figuring your grade point average. Classes not at the 100-level or above are not counted in the GPA Hours. Classes with grades of CR/NC are not counted in the GPA Hours.

*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 your major, minor and general education is necessary for graduation (effective fall 2007).

1. You will be on academic probation if your cumulative grade point average falls below 2.00. Academic Probation limits you to 15 credits. You must contact your advisor to adjust your schedule before classes start for the next semester.
2. If you are on probation for two consecutive semesters (summer semester included if you are enrolled in summer classes), you will be academically dismissed or, if your cumulative GPA Hours are 19 or more and your grade point average is 1.60 or less, you will be academically dismissed. Your classes for the next semester(s) will be deleted.
3. After a first or second dismissal you may choose one of the following options:
 1. Allow two semesters (summer may be counted for one semester) to elapse before re-enrollment,

or
 2. Petition the Scholastic Standards Committee for immediate readmission should extenuating circumstances exist. This action is initiated with the Chair of the Scholastic Standards Committee. The Committee can either permit early readmission with specific conditions required of you or deny your request. Subsequent to the Committee's denial, you can further appeal in writing to the Provost, whose decision is final.
4. If you continue after a dismissal, you will be dismissed again after any semester in which your cumulative grade point average falls below a 2.00. The Registrar may allow you to continue "on probation," with the record showing "on probation" instead of "academic dismissal" if your record has shown improvement during the semester and you have a 2.00 grade point average in courses carried for that semester.
5. If you are dismissed a third time, you will not be reinstated without the permission of the Provost. Three semesters must elapse from the time of dismissal before you may petition for readmission. Summer may be counted for one semester.
6. The Scholastic Standards Committee may dismiss you from the university for demonstrated academic dishonesty.

Graduate Academic Standing

Full- and Part-Time Students Academic Probation and Dismissal Policy For Graduate Level Coursework

(Effective Summer 2011)

A cumulative grade point average of 3.00 for all graduate credits carried at Lake Superior State University and a minimum grade of B for each course, including courses transferred into the program, are required for graduation.

1. You will be on academic probation if your cumulative grade point average falls below 3.00. Academic Probation limits you to six (6) credits. You must contact your advisor to adjust your schedule before classes start for the next semester.
2. If you are on probation for more than two consecutive semesters (summer

semester included if you are enrolled in summer classes), you will be academically dismissed. Your classes for the next semester will be deleted.

3. After a first or second dismissal you may choose one of the following options:
 1. Allow two semesters (summer may be counted for one semester) to elapse before re-enrollment,
 - OR
 2. Petition the Scholastic Standards Committee for immediate readmission should extenuating circumstances exist. The Committee can either permit early readmission with specific conditions required of you or deny your request. Subsequent to the Committee's denial, you can further appeal to the Provost, whose decision is final.
4. If you continue after a dismissal, you will be dismissed again after any semester in which your cumulative grade point falls below a 3.00. The Registrar may allow you to continue "on probation," with the record showing "on probation" instead of "academic dismissal" if your record has shown improvement during the semester and you have a 3.00 grade point average in courses carried for that semester.
5. If you are dismissed a third time, you will not be reinstated without the permission of the Provost. Three semesters must elapse from the time of dismissal before you may petition the Provost for readmission. Summer may be counted for one semester.
6. The Scholastic Standards Committee may dismiss you from the university for demonstrated academic dishonesty.

Academic Integrity

(Effective Spring 2021)

Academic integrity is a key component of the core values of Lake Superior State University. All members of the University community are expected to be honorable and ethical and observe standards of conduct appropriate to a community of scholars. Students are expected to behave in an ethical manner. The University community will not tolerate academic dishonesty as such behavior will cause harm to the reputation of students, faculty, and graduates of the institution. Such dishonorable behavior includes, but is not limited to, cheating, fabrication, plagiarism, and obtaining an unfair advantage. These terms are defined below:

Cheating: Using or attempting to use unauthorized materials or information of any kind during an exam or assignment of any kind. Using notes, texts, help from individuals, or copying information from another individual's exam, or by using electronic or any other means constitutes cheating unless such resources are EXPLICITLY allowed by the instructor.

Fabrication: Unauthorized falsification, invention, or copying of data, falsification of information, citations, or bibliographic references in any academic work. It also includes falsifying any academic record or other University document. Issues of academic integrity are not limited only to submitted written assignments but also include dishonest behavior that impacts planned learning opportunities for self or others. Examples include, but are not limited to: stated falsehoods with the intent/or have the result of impacting course schedules, group activities, or assignment design; actions of deception that are intended/or have the result of altering assignments, learning objectives, testing, and/or grading criteria.

Plagiarism: Representing someone else's work as one's own. Failing to cite references or presenting material, verbatim or paraphrased that is not acknowledged and cited

also constitutes plagiarism.

Obtaining an Unfair Advantage: Stealing, reproducing, circulating, or otherwise gaining any advantage with examination materials before, during, or after examination by the instructor. This may include, but is not limited to: submitting responses after the examination is complete, or not submitting the examination. Also prohibited are stealing, destroying, defacing, or concealing academic materials with the purpose of depriving others of their use.

Possible Academic Sanctions for Offenses

It is in the best interest of the University community to sanction any individual who chooses not to accept the principles of academic honesty by engaging in the above acts. Appropriate sanctions may include but are not limited to verbal and/or written warning, revision and/or completion of additional work, change or reduction of grade, course failure, and/or dismissal from academic program and/or the University. In the case of theft, damage, or destruction of University property, or the property of others, there may be additional penalties which may include, but are not limited to issuance of fines, removal from the campus, dismissal from the University, and/or criminal prosecution.

Faculty/Staff and University Responsibilities

A faculty/staff member who observes a violation or has a violation reported to them in one or more of the above areas shall meet with the student to address the violation and review the Academic Integrity Incident Report with them. The faculty/staff member will then file the report with the Academic Advisor, Dean and the Provost's Office. This report will be kept in the Provost's Office for a period of five years after graduation or leaving the university. Academic Departments or Schools may have additional policies and procedures that could provide further recommendations to the Provost's Office when instances of academic dishonesty are suspected.

The Office of the Provost will keep a record of all Academic Integrity reports. On behalf of the faculty member, Academic Deans may access these records for assessment of patterns in past academic integrity incidents. In cases of egregious or repeated violations, it may be determined by the Dean that dismissal from the University is warranted. In this case, the Provost's Office and the student will be notified.

Student Responsibilities

Unless the faculty member has explicitly specified otherwise, students are to assume that exams are individual, closed book, and without the use of notes or similar reference materials. Unless specifically allowed by the faculty member, papers, projects, and similar products are expected to be the original individual work of the student. If notes, texts, other reference materials, group work or similar activities are to be allowed, the faculty member will specify what is permitted for a particular assignment or exam prior to disseminating the assignment or exam.

It is the student's responsibility to start the appeal process if they wish to challenge an academic integrity decision.

Student Appeal

For a single course Academic Integrity incident, the student will follow the procedure outlined in the [Academic Integrity Appeal Process Record of Action](#).

Should the student desire to appeal a University dismissal related to egregious or repeated Academic Integrity incidents, the same process outlined in the Academic Integrity Appeal Process Record of Action would be followed but begin at Step 5 with the Student Written Request to Dean.

Academic Forgiveness Policy

(Effective Spring 2018)

Purpose: LSSU recognizes that sometimes, despite a student's best efforts, life circumstances interrupt academic progress, impacting academic standing and GPA in ways that make returning and being successful difficult. The Undergraduate Academic Forgiveness Policy provides returning students with a chance to establish an academic standing that reflects their increased maturity and commitment to successful degree completion.

Through the Academic Forgiveness process, a student who has been away from Lake Superior State University for a period of at least three years, is given a one-time opportunity to remove prior course work from specific academic semesters from grade point computation.

Academic Forgiveness must be requested the first semester of a student's return. An academic plan must be completed with the faculty advisor. In addition, the student will be required to complete no less than 12 additional credits at LSSU with a minimum GPA of 2.000 or higher in order to have academic forgiveness applied to their transcript. The Application for Academic Forgiveness can be found [here](#).

Academic Forgiveness is not available to students who have previously been awarded an LSSU associate, or bachelor's degree. Students with an earned certificate may not forgive any coursework that was used to earn the certificate.

Students may only request academic forgiveness once, and if academic forgiveness is approved it is irrevocable. The student's academic standing will be set to "Good Academic Standing".

All courses and grades that fall within the academic forgiveness semesters will remain on the student's transcript with the notation "Academic Forgiveness Granted". All grades will be annotated with an 'R' indicating forgiveness, (for example, RA, RB, RC, RD, RF). Grades thus annotated will be excluded from the university grade point average calculation. Forgiven course grades of RC- or higher will count in Earned credits and can be used to fulfill LSSU requirements.

Academic Forgiveness does not relate to or affect Financial Aid eligibility. A student's cumulative completion rate of attempted credits is not reduced by the approval of Academic Forgiveness.

Academic Forgiveness is a policy of Lake Superior State University and may not be recognized by outside institutions or agencies (e.g. Michigan Dept of Education, other universities and colleges).

Michigan Transfer Agreement (Sending)

The Michigan Transfer Agreement (MTA) is a partnership between Michigan's colleges and universities that allows students to complete core college courses at one institution and transfer those credits to other partner institutions to be applied to the core requirements.

To be eligible to receive the "MTA-Satisfied" designation on the LSSU academic transcript, students must:

- Complete LSSU's bachelor degree General Education Core Requirements with a minimum of a C or higher in each course. If students transfer coursework to LSSU, any coursework used toward LSSU's General Education Core Requirements will be required to have a minimum grade of a C or higher.
- Complete at least one credit bearing course at LSSU.
- Submit the completed LSSU MTA Application Form.

Coursework in areas of prior learning are not applicable to the MTA at this time (e.g., International Baccalaureate-IB, College-Level Examination Program-CLEP, DANTES Subject Standardized Test-DSST, etc.).

Students [requesting and earning this designation](#), will have it applied to their academic transcript at the completion of the academic semester.

Family Educational Rights and Privacy Act (FERPA)

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 U.S. Department of Education, 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 U.S. Department of Education concerning alleged failures by the University to comply with the Act. In accordance with these requirements the annual notice regarding students' rights, the location of copies of the University's policies setting forth these rights, as well as the right to file complaints with the Family Educational Rights and Privacy Act Office, shall be published in the University Catalog. The annual letter to students will notify students of directory information.

The registrar is the hearing officer for the Act and is responsible for implementing the notification requirements and the 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:
 1. are in the sole possession of the maker thereof, and
 2. 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:
 1. maintained apart from the University's educational records;
 2. maintained solely for law enforcement purposes; and
 3. 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:
 1. are made and maintained in the normal course of business;
 2. relate exclusively to the individual in that individual's capacity as an employee; and
 3. are not available for use for any other purpose.
 4. 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:
 1. 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;
 2. created, maintained, or used only in connection with the provision of treatment to the student; and
 3. 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 records 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; Office of Admissions
- Career Advising and Placement; Academic, Personal, evaluations; Director; Library
- Continuing Education; Academic; Director; Cisler Center
- Human Resources; Work Evaluation, Employment; Director; Administration Building
- Financial Aid; Financial, Academic, Personal evaluation, Employment; Director; Fletcher Center
- Graduate Office; Academic, Financial; Coordinator; Crawford Hall
- Registrar's Office; Academic (complete and official academic record), Personal, Veterans Affairs; Registrar; Fletcher Center
- Residence Halls; Personal; Housing Manager; Cisler Center
- Residence Halls and Student Life; Discipline; Dean of Student Affairs; Cisler Center
- Student Accounts; Financial; Director Business Operation; Fletcher Center
- Academic Areas, Academic; School/Department Chairs.

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

Section 8. Disclosure of Restricted Information to University Officials

Personally identifiable information from the education records of a student may be disclosed without the prior consent of the student to University officials who have a legitimate educational interest in the information. The University officials must

demonstrate a need to obtain the information consistent with their official functions and the request must be consistent with normal professional practices and legal requirements.

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

Section 9. University Officials

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

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

Section 10. Disclosure of Personally Identifiable Information

A. Prior Consent for Disclosure Required

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

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

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

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

B. Prior Consent for Disclosure Not Required

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

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

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

1. To federal and state authorities as provided by the Act or other legal authority.
2. In connection with financial aid for which a student has applied or received; provided that the information may be disclosed only:
 1. to determine the eligibility for financial aid,
 2. to determine the amount of aid

3. to determine the conditions that will be imposed regarding financial aid, or
4. 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

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 of the add/drop period to the Registrar's Office.

The University considers the following as directory information: name, address, telephone number, place of birth, e-mail address, enrollment status (e.g., undergraduate or graduate, full time or part time) major field of study, dates of attendance, degrees, honors and awards received, including scholarships, most recent previous educational agency or institution attended by student, participation in officially recognized activities and sports, and height and weight of members of the athletic teams.

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:
 1. admission, or
 2. application for employment, or
 3. receipt of an honor or honorary recognition.
4. Those records which are defined not to be education records as set forth in Section 3

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

Section 14. Request to Amend Educational Records

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

The procedures regarding amendment to a student record are:

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

Section 15. Right to a Hearing

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

Procedure of Hearing

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

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

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

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

The student may be assisted or represented by any individual, including an attorney, at their own expense.

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.

Students have the right to file a complaint with the U.S. Department of Education concerning alleged failures by Lake Superior State University to comply with the requirements of FERPA. The name and the address of the office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-5901

Additional Information

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

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Degree Requirements

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

Bachelor degree: A minimum of 124 credits (at the 100 level or higher) is required for a bachelor degree. Some programs require more than this number of credits. Requirement categories are: general education, bachelor of arts (if applicable) and major. Some programs require concentrations, support courses and/or a minor, and free electives. Please note: a minor selected to accompany a major may not be in the same discipline.

Bachelor of Arts degree (8 credits): One year of a modern language other than English. One-half year of two different languages will not meet this requirement.

Associate degree: A minimum of 62 credits (at the 100 level or higher) is required for an associate degree. Some programs require more than this number of credits. Requirement categories are: general education and major or concentration. Some programs require minors, support courses and free electives.

Certificate: A certificate may be comprised of a series of courses/experiences housed in one department, or a cluster of courses/experiences in a defined thematic area which are not confined to a single disciplinary area - referred to as a multidisciplinary certificate. Standard and professional certificates credit minimums are variable, however, certificates that will be eligible for standalone approval under Gainful Employment provisions must be at least 24 credits minimum.

Concentration: A prescribed set of disciplinary or interdisciplinary courses within a particular bachelor or associate degree.

Minor: Academic minor programs are offered in a wide variety of disciplines. A minimum of 20 credits is required for a minor, with some minors requiring additional credits. Minors are earned as part of the bachelor or associate degree program.

GPA: A minimum cumulative grade point average of 2.00 for all credits carried at Lake Superior State University **and** a minimum cumulative grade point average of 2.00 for all courses required in a student's major, minor and general education is necessary for graduation. Some degree programs may require a higher gpa.

Electives: Elective courses are chosen to obtain credit beyond that of specified requirements. Free electives refer to courses students may select completely of their own choice. Designated electives refer to courses selected from a list

specified by the department.

Graduation with Honors: Students graduating with honors must earn at least 30 credits at Lake Superior State University.

Cum Laude: Cumulative gpa of 3.50 to 3.69

Magna Cum Laude: Cumulative gpa of 3.70 to 3.89

Summa Cum Laude: Cumulative gpa of 3.90 to 4.00

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

For the commencement ceremony and program, honors status will be determined based on the Fall Semester cumulative gpa. Official graduation with honors status will be granted based on students' final cumulative gpa at LSSU.

Honors Degree

The University Honors Program offers highly motivated students the opportunity to develop their knowledge, abilities and skills in distinctive ways, which draw from and which build upon LSSU's best qualities. The central goal of the University Honors Program is to create and foster a community of scholars characterized by strong student-faculty interaction and who are equipped to get the most out of their LSSU experience and to take that experience into society. The Honors Program approach to education incorporates the qualities of active participation, intellectual curiosity and interdisciplinary collaboration.

Selection is based upon a number of factors, including: SAT scores or ACT scores, grade point average, and/or an application essay. Students are accepted into the program on a rolling basis, which means that students may apply at any time for admittance into the program. 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 include seminars or directed research projects.

To graduate with an honors degree in a program of study, the honors student must have successfully completed 18 honors credit hours with a cumulative grade point average of 3.5 or better at graduation.

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 academic transcript. The Honors Degree is distinct from graduating with honors (see Graduation with Honors).

Acceptance of Other Institutions' Honors Credits

This policy applies only to the transfer of honors credits which count towards earning an honors degree at Lake Superior State University. It does not affect non-honors course credits and the transfer of those credits to LSSU.

1. The LSSU Honors Program will accept up to 12 honors credits with a grade no lower than B taken at an accredited college or university. These accepted honors credits will count towards the 18 honors credits required to graduate from LSSU's Honors Program.
2. To graduate from the Honors Program at LSSU, students affected by this policy must meet the following requirements at LSSU:
 1. The completion of the capstone senior thesis project at LSSU.

3. Students who transfer into LSSU's Honors Program will receive the same honors benefits given to other students who enter LSSU's program earlier. These include but are not limited to:
 1. Priority Registration
 2. Optional Honors Housing
 3. Opportunities to participate at Honors Program conferences
4. Students who transfer into LSSU's Honors Program will receive the same Honors designation on their Lake Superior State University diploma as other LSSU students who meet its Honors requirements by their graduation date.
5. This Policy shall commence on January 24, 2012, or as soon thereafter as administratively possible, and shall be in effect until suspended or terminated.
6. Students already admitted into the Lake Superior State University Honors Program at the time of suspension or termination will be allowed to complete the Program at LSSU under the terms of this policy enumerated (above) in numbers 1 through 4. Suspension or termination will only affect those admitted after suspension or termination of this policy.

Residency Requirements: On-campus and regional centers

Bachelor degree candidates must successfully complete at least 30 of the 124 credits earned for the degree using courses offered by Lake Superior State University. Additionally, at least 50 percent of the departmentally required (major) 300/400 level credits must be earned using courses offered by Lake Superior State University.

Associate degree candidates must successfully complete at least 15 of the 62 credits earned for the degree using courses offered by Lake Superior State University. Additionally, candidates must earn at least 50 percent of their departmentally required (major) credits using courses offered by Lake Superior State University.

Certificate candidates must successfully complete at least half (50%) of their departmentally required credits using courses offered by Lake Superior State University.

Minor candidates must earn at least 10 of the departmentally required credits using courses offered by Lake Superior State University.

Departmental residency requirements may exceed the residency of the University for certain degree programs.

Multiple Majors

Students may earn more than one major by completing all requirements of each desired major program. Before graduation, students must file a Degree Audit approved by the school chair for each major. The double major must be granted as one combined degree such as: bachelor of science degree in accounting and business administration.

Multiple Degrees

If a student desires to earn more than one degree, the student must complete all program requirements of the additional degree(s) as certified by the school chair, comprising a minimum of 30 additional LSSU credits for each additional

bachelor degree, or a minimum of 15 additional LSSU credits for each additional associate degree from Lake Superior State University.

There are no overlapping or additive residency requirements between the associate and bachelor degree tracks. The degrees stand alone. Earning an additional associate degree and a bachelor degree at the same time would require the completion of an additional minimum of 30 credits.

Additional degrees for graduates of other universities

Students who hold a bachelor degree at another U.S. accredited institution, and who desire a bachelor degree from LSSU, must complete all requirements of an approved degree schedule including at least 30 additional credits in courses offered by LSSU. The degree schedule must be approved by the major school chair and sent to the Registrar's Office. Transfer credits from other universities will be evaluated for those classes used for the new degree. Students 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 major, minor and cognate courses.

Courses considered essential to the degree but not previously elected may, at the option of the school chair, be required even though the total may exceed 30 credits. Lake Superior State University general education requirements are considered complete if students have earned a bachelors degree at any United States accredited university or an honors bachelors degree from an accredited Canadian university.

If students have earned a bachelors degree or associates degree at another accredited institution and desire an associates degree from Lake Superior State University, they must complete all requirements of an approved degree schedule including at least 15 additional credits in courses offered by LSSU. The degree schedule process is identical to that described above for an additional bachelors 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 15 credits.

Incomplete (I) Grades

Students are **not** eligible to receive a degree or certificate with an Incomplete (I) grade on their academic record.

Failed Classes

If a student fails a class required for their degree program, the student must repeat the class and receive a passing grade. If the failed class is no longer offered because of program changes and/or course deletions, the dean may approve a substitution or waiver recommended by the academic chair. The chair must provide reasons for the recommendation on the substitution/waiver form which is sent to the dean's office.

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 Chair of the Scholastic Standards Committee.

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, students will graduate under the program degree requirements in effect and published in the Catalog at the time they are admitted into the given degree program, provided enrollment at the University is continuous. If enrollment is interrupted, or if students select a new major, they must satisfy program requirements in effect at the time they re-enter or officially change to the new major. If program requirements are revised during students' enrollment, students will be allowed to graduate under the new requirements providing they 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.

Missing Requirements

Students not graduating because of missing requirements will be sent a letter notifying them of the missing requirements and will direct them to the department of their major.

Posthumous Degree Policy

A posthumous degree may be awarded in the name of a deceased student upon request of the student's family, if the deceased student had met the requirements as set forth below.

The deceased student will need to be in good academic standing with the University and have completed a majority of the requirements for the degree. The Chair of the school responsible for the student's degree program will make the recommendation to the Dean. The Dean will complete a degree audit and submit it to the Registrar who will complete a verification of the requirements, and submit the request to the Provost. If the Provost approves, the request will be submitted for Presidential approval, and final Board of Trustees approval.

The academic transcript will be marked: "Degree Granted Posthumously". A copy of the academic record will be released, if requested, to an attorney representing the estate of the deceased student.

Deceased students not meeting the above criteria may receive a "Certificate of Achievement" if requested by the family.

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General Education Requirements

General Education Mission Statement

In a diverse and changing world, college graduates must be prepared for a lifetime of learning in a variety of fields. In order to meet this challenge, general education requirements foster the development of general skills and knowledge that are further developed throughout the curriculum.

General Education Learning Outcomes

LSSU graduates will be able to:

- Communicate competently in a variety of contexts (Oral Communication Outcome)
- Analyze, develop, and produce rhetorically complex texts (Written Communication Outcome)
- Analyze, evaluate, and explain human aesthetics and its historical development (Humanities Outcome)
- View the world from cultural perspectives other than their own (Diversity Outcome)
- Incorporate empirical evidence in the analysis of the causes and consequences of natural phenomena (Natural Science Outcome)
- Think critically and analytically about the causes and consequences of human behavior (Social Science Outcome)
- Analyze situations symbolically and quantitatively in order to make decisions and solve problems (Mathematics Outcome)

General Education Requirements (Bachelors Degree)

Students planning to earn a degree are required to complete general education requirements with a general education gpa of 2.00 or higher. The general education requirements will be considered satisfied for students transferring to LSSU with [MTA](#) or [MACRAO](#). The general education requirements will be considered satisfied for students who have already earned a bachelors degree (honors bachelor degree from a Canadian University).

- **Oral and Written Communication (9 Credits Minimum)** One year of composition and one semester of communication.

Composition: [ENGL110](#) and [ENGL111](#)

Communication - One course from: [COMM101](#), [COMM201](#) or [COMM225](#)

- **Mathematics (3 Credits Minimum)** One course in Mathematics ([MATH110](#) or higher)

- **Social Science (6 Credits Minimum)** Two courses from different disciplines. Pick one course from any two disciplines:

Business Discipline: [BUSN121](#)

Economics Discipline: [ECON201](#), [ECON202](#), [ECON302](#), [ECGE100](#)

Geography Discipline: [GEOG201](#), [GEOG302](#), [GGGE100](#)

History Discipline: [HIST101](#), [HIST102](#), [HIST131](#), [HIST132](#), [HSGE100](#)

Political Science Discipline: [POLI110](#), [POLI160](#), [POLI241](#), [PSGE100](#)

Psychology Discipline: [PSYC101](#), [PSYC107](#), [PSYC155](#), [PYGE100](#)

Sociology Discipline: [SOCY101](#), [SOCY102](#), [SOCY113](#), [SOG100](#).

- **Natural Sciences (7 Credits Minimum)** Two courses from different disciplines - one with a lab. Pick one course from any two disciplines (including interdisciplinary), or pick two from interdisciplinary:

Biology Discipline: [BIOL104](#), [BIOL105](#), [BIOL122](#), [BIOL131](#), [BIOL132](#)
(effective Fall 2018)

Chemistry Discipline: [CHEM108](#) (effective Fall 2017), [CHEM108](#) and [CHEM109](#), [CHEM115](#), [NSCI110](#)

Geology/Geography Discipline: [GEOL115](#), [GEOL121](#), [GEOL122](#), [GEOG106](#), [NSCI102](#)

Physics Discipline: [PHYS221](#), [PHYS231](#), [NSCI101](#)

Interdisciplinary: [NSCI103](#) (effective Fall 2017), [NSCI103](#) and [NSCI104](#), [NSCI108](#) (effective Spring 2020), [NSCI116](#), [NSCI119](#), [GEOG108](#)

Other: [NSGE100](#)*

*Two [NSGE100](#) courses may be used if the reviewing dean determines that two or more disciplines are represented.

- **Humanities (6 Credits Minimum)** Two courses from different disciplines. Pick one course from any two disciplines (including interdisciplinary), or pick two from interdisciplinary:

Arts Discipline: [ARTS250](#), [ARTS251](#), [HUMN240](#)

Culture Discipline: [ENGL180](#) (effective Summer 2015), [HUMN203](#)

History Discipline: [HIST231](#) (effective Fall 2018)

Music Discipline: [MUSC220](#), [MUSC221](#)

Mythology Discipline: [HUMN255](#)

Philosophy Discipline: [PHIL204](#) (effective Spring 2020), [PHIL302](#), [PHIL305](#)

Theatre Discipline: [HUMN256](#) (effective Spring 2020), [THEA251](#)

Language Discipline: Second year (6-8 credits) of a foreign language (e.g. [SPAN261](#) and [SPAN262](#) may be used as one course)

Interdisciplinary: [HUMN251](#), [HUMN252](#)

Other: [HUGE100](#)*

*Two [HUGE100](#) courses may be used if the reviewing dean determines that two or more disciplines are represented.

- **Cultural Diversity (3 Credits Minimum)** from:

[BUSN308](#), [EDUC250](#), [ENGL235](#) (effective Summer 2015), [ENGL236](#) (effective Summer 2015), [GEOG306](#), [HIST203](#), [HLTH328](#), [INTB289](#) (effective Spring 2020), [POLI234](#), [POLI334](#), [RECS367](#) (effective Spring 2019), [SDGE100](#), [SOCY103](#), [SOCY321](#).

Total Credits Required: 34 - 36

General Education Requirements (Associates Degree)

- **Oral and Written Communication:** [ENGL110](#), [ENGL111](#), [COMM101](#)
- **Mathematics (Minimum 3 credits):** [MATH110](#) or higher or [PHIL205](#)
- **12 additional General Education credits are required** (chosen from at least two of the following categories listed above: Humanities, Natural Science, Social Science, or Diversity).

Total Credits Required: 24

General Education Requirements (Associate of Applied Science Degree)

- **Oral and Written Communication:** [ENGL110](#) and [ENGL111](#) or [COMM101](#)
- **Mathematics (Minimum 3 credits):** [MATH102](#) or higher or [PHIL205](#)
- **6 additional General Education credits are required** (chosen from the following categories listed above: Communication Skills, Humanities, Mathematics, Natural Science, Social Science, or Diversity).

Total Credits Required: 15

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Two semesters prior to intended graduation, students must submit the following to the Registrar's Office:

Graduation Application: Students must complete a [Graduation Application](#) for each degree or certificate they plan to receive.

Official Degree Audit: The official 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 chair of the school or department offering the major or minor program. Course substitutions and waivers of departmental degree program requirements may be granted only by the chair and approved by the dean of the college offering the major or minor program. Course substitutions and waivers for education majors or minors must also have approval from the School of Education.

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 Chair of Scholastic Standards.

Students are responsible for reviewing their My Degree Plan degree audit and requesting clarification of anything that is not consistent with their records or understanding.

A final degree audit verification will be completed after grades are received at the end of the semester, for students planning to graduate as of that semester. The degree will be awarded if all requirements have been satisfied. Names of graduates are then sent to the president for approval by the Board of Trustees. Subsequently, a diploma is provided to each student.

Please Note: Students are **not** eligible to receive a degree or certificate with an "I" (incomplete) grade on their academic record.

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, spring or summer semester who need documentation of degree completion before their diploma is available, may request a letter from the Registrar's Office certifying that they have completed degree requirements.

Commencement

From the Graduation Application Forms submitted by students, a potential graduate list is created each semester. The names of students who are listed in the annual commencement program are also compiled from the Graduation Application Forms. Names for the commencement program and diplomas will be

the official, legal name as listed in the records of the University. Students may not be listed in the commencement program unless their Graduation Application Form is filed with the Registrar's Office six weeks prior to commencement. Students are expected to attend [commencement](#) exercises unless excused by the Registrar's Office.

Students completing degree requirements during the summer semester may participate in the May commencement ceremony if their Graduation Application Form is received six weeks prior to commencement.

Participation in the commencement ceremony is NOT equivalent to graduation. Because the ceremony occurs before final grades are submitted, it is not possible to determine if all degree requirements have been satisfied at that time.

Missing Requirements

Students not graduating because of missing requirements will be sent a letter notifying them of the missing requirements and will direct them to the department of their major.

Graduation Audit Policy

Graduation Audits (Graduation Application, Degree Audit, supporting paperwork) are maintained in the Registrar's Office permanently for students that apply to graduate but ultimately do not graduate due to missing requirements.

If the student re-applies to graduate within two years from original graduation application term, the student will follow the same degree audit previously submitted.

If the student re-applies to graduate after two years from the previous graduation application, the student will be directed to contact their academic department to request a new Degree Audit. The Registrar's Office will provide copies of the student's graduation audit paperwork to the academic department as requested. The student will also be required to complete a new Graduation Application to be submitted to the Registrar's Office with the updated, official, signed degree audit from their academic department.

Because degree programs are continually assessed, requirements may change during the student's absence. Students will need to work with their academic departments in order to fulfill the department requirements in place at the time the student returns to LSSU.

For degree programs that are no longer available (eliminated/suspended), students having completed the Graduation Application process will be directed to their academic department for advisement.

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College of Innovation and Solutions

- Lukenda School of Business
- School of Computer Science and Mathematics
- School of Engineering and Technology

College of Science and the Environment

- School of Natural Resources & Environment
- School of Science and Medicine

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Course Descriptions

Each course description is preceded by the following type of heading:

**CHEM999 Chemistry
(3,3) 5**

or

**CHEM999 Chemistry
(3,3,1) 5**

or

**CHEM999 Chemistry
(3,3) *alternate years* 5**

The first line provides the code number (CHEM999) and the course name; see abbreviation legend below. The second line includes several pieces of information: The first two numbers in parentheses are hours of lecture-lab per week. If the course has a recitation component, it will be listed next. The far right digit indicates the number of credit hours. Sometimes, no semester will be indicated, or there may be an alternate years or "every third year" notation. Consult either the on-line course schedule listings prior to registration or your department chair concerning scheduling of such courses.

NOTE: 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 if it is found during the regular add/drop period that the proper prerequisites have not been met. Responsibility rests with students to be certain that they have the approved prerequisites.

Abbreviations

- [ACTG - Accounting](#)
- [ARTS - Art](#)
- [BIOL - Biology](#)
- [BUSN - Business](#)
- [CBUS - Cannabis Business](#)
- [CCHM - Cannabis Chemistry](#)
- [CHEM - Chemistry](#)
- [CHLD - Early Childhood Education](#)
- [CHIN - Chinese](#)
- [CJUS - Criminal Justice](#)
- [COMM - Communication](#)
- [CSCI - Computer Science](#)

- [CULN - Culinary Arts](#)
- [DATA - Data Processing](#)
- [ECON - Economics](#)
- [EDSE - Special Education](#)
- [EDUC - Teacher Education](#)
- [EGEE - Electrical Engineering](#)
- [EGEM - Engineering Mechanics](#)
- [EGET - Electrical Engineering Technology](#)
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- [EGMF - Manufacturing Technology](#)
- [EGMT - Manufacturing Engineering Technology](#)
- [EGNR - General Engineering](#)
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- [EMED - Emergency Medical Services](#)
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- [FINC - Finance](#)
- [FINE - Fine Arts](#)
- [FIRE - Fire Science](#)
- [GEOG - Geography](#)
- [GEOL - Geology](#)
- [HIST - History](#)
- [HLTH - Health Sciences](#)
- [HONR - Honors Program](#)
- [HUMN - Humanities](#)
- [INTB - International Business](#)
- [INTD - Interdisciplinary](#)
- [JAPN - Japanese Studies](#)
- [JOUR - Journalism](#)
- [KINS - Kinesiology](#)
- [LAWS - Law](#)
- [LIBR - Library](#)
- [LING - Linguistics](#)
- [MATH - Mathematics](#)
- [MGMT - Management](#)
- [MRKT - Marketing](#)
- [MUSC - Music](#)
- [NSCI - Natural Science](#)
- [NRES - Natural Resources](#)
- [NURS - Nursing](#)
- [OFFC - Office Administration](#)
- [PHIL - Philosophy](#)
- [PHYS - Physics](#)
- [PNUR - Practical Nursing](#)
- [POLI - Political Science](#)
- [PSYC - Psychology](#)
- [READ - Reading](#)
- [RECA - Recreational Activities](#)
- [RECS - Recreation Studies](#)
- [SERV - Student Services](#)

- [SOCY - Sociology](#)
 - [SOWK - Social Work](#)
 - [SPAN - Spanish](#)
 - [THEA - Theatre](#)
 - [USEM - University Seminar](#)
-

ACTG132

Principles of Accounting I

(4,0) 4

An introduction to the principles and procedures of accounting as applied to proprietorships and corporations. Areas of study include the accounting, internal control and the asset, liability and equity sections of the balance sheet. Prerequisite: Two years of high school algebra and equivalent/satisfactory score on ACT/SAT or Placement Exam or MATH102 with a grade of C or better.

ACTG133

Principles of Accounting II

(4,0) 4

This course emphasizes the role of managerial accounting information within a firm. Topics include budgeting, responsibility accounting, cost allocations, cost behavior, decision models, product costing, cost control, performance evaluation, capital budgeting, cash flows and methods of financial analysis. Prerequisite: Grade of C or higher in ACTG132.

ACTG232

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: ACTG132 and ACTG133.

ACTG233

Intermediate Accounting II

(4,0) 4

Continuation of ACTG232 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: Grade of C or higher in ACTG232.

ACTG332

Cost Management I

(4,0) 4

An advanced study of managerial accounting as it applies to management practices. Topics include job order and process costing systems, value chain management, activity based costing and management, joint product costing, CVP analysis, cost allocations, budgeting, and financial planning models, and allocation of support activity costs. Prerequisite: ACTG133.

ACTG333

Cost Management II

(4,0) 4

A continuation of ACTG332. Topics include strategic decision making, strategic issues in capital investment decisions, standard costing and variance analysis, performance evaluation and the balanced scorecard, responsibility accounting, investment centers and transfer pricing, target costing, theory of constraints, and strategic pricing, managing and controlling quality, management compensation, and business valuation. Prerequisite: ACTG332.

ACTG334

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: ACTG233, ACTG332, and introductory data processing course.

ACTG350

Income Tax Practicum

(0,2) 1

Field instruction and practical experience in federal and state income tax preparation. Prerequisite: ACTG421. Repeat up to two times for a maximum of 2 credits.

ACTG421

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: ACTG133 and Junior standing or approval of the department.

ACTG422

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: ACTG421.

ACTG427

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: ACTG233 and 333.

ACTG432

Advanced Accounting: Consolidations

(4,0) 4

This course involves a study of corporate business combinations and the preparation of related consolidated financial statements. International accounting issues related to the hedging of foreign currency transactions, translation of foreign financial statements and the application/comparison of international accounting standards will also be presented. Prerequisite: ACTG233 with a grade of C or higher.

ACTG433

Advanced Accounting: Governmental

(4,0) 4

An introduction to governmental and nonprofit accounting as applied to state and local governments and other nongovernmental not-for-profit entities including colleges and universities, and health care organizations. Areas of study include both the source of GASB standards and statements and the application of this theory to the governmental accounting cycle. Students will also be exposed to and apply a variety of financial performance measures unique to this sector of the economy. Students will prepare a monthly transaction analysis and complete a governmental practice set. Prerequisite: ACTG233 with a grade of C or higher.

ACTG450

CPA Exam Preparation - Financial Accounting and Reporting

(3,0) 3

This course prepares students for the financial accounting and reporting section of the CPA exam. Students will complete a comprehensive review of financial accounting concepts, standards and reporting requirements used by business, not-for-profit and state and local government entities. Students will also become familiar with the format and administration of this exam section. Students will complete this course as an independent study with guidance from a faculty member. Prerequisite: Senior status and permission of instructor.

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ARTS250

Art History and Appreciation I

(4,0) 4

The study of art beginning with the prehistoric caves in France through the religious presentations in Mesopotamia and Egypt. The humanistic-centered art of Greece and Rome follows. Powerful expressions of faith dominate art in the Christian and Islamic styles that evolved after the fall of the Roman Empire. The early renaissance offers a religious art that combines the elements of faith with a renewed interest in the art of classical Greece and Rome. Students from all academic disciplines can benefit from this course.

ARTS251

Art History and Appreciation II

(4,0) 4

A study of European art from the High Renaissance to the present day. Beginning with Leonardo and Michelangelo, this class will examine the evolution of western art in the works of Rembrandt, Bernini, David, and Delacroix to mention only a few. Of particular importance is the universal Romantic style that inspired artists in America. This class will examine how the industrial revolution and the invention of the camera forced artists to seek new ways of presentation. Modern styles such as Impressionism, Cubism, Surrealism and Abstract Expressionism follow. Art in the 20th and 21st centuries will be studied in relation to science, two world wars, and the societal changes that characterize the contemporary world.

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BIOL104

Survey of General Biology

(3,3) 4

This course is a non-majors biology course that will cover the major units of general biology: (1) cells and energy; (2) genetics; (3) evolution; (4) organismal biology; (5) ecology. Developing a solid understanding of the fundamentals of general biology is vital to being an informed citizen about advances in the medical and food sciences, foundational and new information about the organization of life, and current issues of environmental and ecological concern. Course content is tied to the State of Michigan's benchmarks for training elementary school teachers, but any students interested in the life sciences are encouraged to take this class. The laboratory is designed to illustrate the course content as well as illustrate the principles of inquiry. Prerequisites: MATH088 and READ091 or equivalent test scores. Pre or Corequisite ENGL110.

BIOL105

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: Pre or Corequisite ENGL110.

BIOL106

Boat Handling and Navigation

(2,3) 3

Topics related to the art of seamanship are covered, including the basics of boating and safety. Piloting and navigation are emphasized with an understanding of weather, waves, and wind, as well as the use of board electronic equipment. Pre- or corequisites: MATH102.

BIOL121

Human Anatomy and 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 complement the lecture topics. This course may not be used as a general education natural science elective nor does this sequence apply toward a major or minor in biological science. Prerequisites: High school chemistry, MATH088 or equivalent satisfactory score on ACT/SAT or Placement Exam, Pre or Corequisite ENGL110.

BIOL122

Human Anatomy and 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: BIOL121.

BIOL131

General Biology: Cells

(3,3) 4

This course is an introduction to the cellular aspects of general biology. This course will provide an overview of cellular biology and serve as a framework for further biological studies. Topics to be covered include basic chemistry of the cell, function of cellular organelles, cellular metabolism including respiration and photosynthesis, the cell cycle, mitosis, meiosis, simple transmission genetics, introduction to molecular and developmental biology. The laboratory introduces the student to inquiry based scientific method. Prerequisites: MATH088 or equivalent scores on the math placement exams; Pre or Corequisite ENGL110.

BIOL132

General Biology:Organisms

(3,3) 4

An introduction to the diversity of life, including the morphology, physiology, reproduction, general habitats and taxonomy of organisms. Adaptation to environment and modern concepts of evolution are stressed as unifying themes throughout the course. Prerequisites: MATH088 or equivalent scores on the math placement exams; Pre or Corequisite ENGL110.

BIOL199

Freshman Seminar

(1,0) 1

A partial focus for this course will be on academic skills and the transition from high school to college. Topics will include time management, use of campus resources, development of critical thinking, and strengthening study skills. At other times students will meet in discipline-based groups in conjunction with BIOL299, BIOL399 and BIOL499. These meetings will include discussion of literature relevant to the discipline and progress reports from upper-class students engaged in scholarly projects.

BIOL202

Plant Science: Ident/Diversity

(2,3) 3

Identification of plants, with emphasis on local flora; systematics and overview of the biodiversity across plant families, with emphasis on seed plants; ecological, cultural and economic concerns of select plant species. Prerequisite: BIOL132

BIOL204

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: BIOL131 and CHEM115.

BIOL206

Medical Laboratory Practices

(2,0) 2

Covers fundamental principles of medical laboratory science including safety, specimen handling, measurement, common calculations, organization of the medical laboratory, automation, and quality control. Prerequisites: MATH111, CHEM115, BIOL131.

BIOL208

Principles of Animal Biology and Health

(3,0) 3

The course provides a comprehensive overview of the biology of animals that are in close association with humans, including food animals, companion animals and zoo animals. The main topics will emphasize fundamental concepts of animal anatomy and physiology, animal nutrition and growth, animal breeding and selection, animal health and management, ecology and behavior, diversity and evolution, as well as applications in care and use of specific animal species and phyla. Prerequisite: BIOL131 and BIOL132.

BIOL220

Genetics

(3,3) 4

This course covers the three major subdivisions of the study of genetics - Mendelian or transmission genetics, molecular biology, and population genetics. Transmission genetics topics will include traditional genetics problems and modes of inheritance; mitosis, meiosis and control of the cell cycle; chromosomal structure and recombination. Molecular topics will include information on DNA structure and replication, transcription, translation, gene cloning, genomics, and current research in DNA technology. Topics in population genetics will include aspects of the Hardy-Weinberg theory. The laboratory will include exercises in both traditional and molecular genetics. Prerequisites: BIOL131 and CHEM115.

BIOL223

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: CHEM105 or CHEM110 and BIOL122. Does not apply towards a major or minor in biology.

BIOL232

Introduction to Aquaponics

(3,3) 4

The course will cover the main topics of aquaponics including an overview of the concept; coupled versus uncoupled systems; microbiology (friendly microbes and pathogens), water chemistry and nitrogen-cycling, plant growth and nutrition, aquatic animal growth and nutrition, automation and system monitoring, sustainable energy options. Pre-requisite BIOL132 or BIOL104 and CHEM115 or CHEM108 and CHEM109.

BIOL235

Introduction to Protected Horticulture

(2,3) 3

An introduction to growing crop plants in hoopouses, greenhouses or other protective structures. Topics include infrastructure considerations, management of growth conditions and disease/pests specific to growing indoors, variety selection, monitoring and adaptive management, and cost management.
Prerequisites: BIOL 104 or both BIOL 131 and BIOL 132.

BIOL243

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: BIOL132 and sophomore standing.

BIOL280

Biostatistics

(2,2) 3

A course in the design and analysis of biological experiments. The focus of the course is the development of a systematic method for determining an appropriate statistical technique and the interpretation of results in terms of biological science. Prerequisites: BIOL131, BIOL132, and MATH111 or Calculus.

BIOL290

Independent Study in (Discipline)

(1-4,0) 1-4

Special studies and/or research in biology for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of department and college dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no 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 Natural Science.

BIOL299

Sophomore Seminar

(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BIOL199, 399 and 499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Sophomores will assist with ongoing projects and will be guided by faculty and juniors enrolled in BIOL399 to conduct a comprehensive, annotated literature search in their area of interest. Prerequisite: BIOL199 and ENGL111.

BIOL302**Invertebrate Zoology****(2,3) 3**

A study of the invertebrate groups with emphasis on morphology, phylogeny and life cycles. Prerequisite: BIOL132.

BIOL303**General Entomology****(2,3) 3**

An introduction to the biology, ecology and systematics of the insects. This course covers fundamentals of insect taxonomy and physiology; and the varied roles insects play in the natural world and in human history and culture. Prerequisite: BIOL132.

BIOL306**Mycology****(2,2) 3**

Covers fungal structure, reproduction, and classification, fungal infections and toxicoses of humans and plants, food uses of fungi, fungal identification, and fungal cultural. Laboratory covers techniques for fungal cultural, identification, and laboratory diagnosis of mycoses. Prerequisite: BIOL132 and BIOL204.

BIOL307**US Food System****(3,0) 3**

An overview of how food is produced, sold, bought and used in the US. The class will analyze the ecological, economical, social, cultural, political and ethical implications of the conventional operation of the US food systems and investigate emerging alternatives designed to address these issues. Prerequisites: ENGL111, Junior status.

BIOL315**Plant Sciences: Structure and Function****(3,3) 4**

Organization of the plant body, photosynthesis, water relations, mineral nutrition, growth and reproduction, plant responses to stress, ecological and economic importance of secondary metabolites. Prerequisites: BIOL131, BIOL132, CHEM115.

BIOL330

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: BIOL131, BIOL132 and CHEM116.

BIOL332

Embryology

(2,2) 3 Alternate Years

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: BIOL131 and BIOL132. (BIOL243 is highly recommended.)

BIOL335

Principles of Animal Nutrition

(3,0) 3 Alternate Years

A scientific approach to the nutritional role of water, carbohydrates, proteins, lipids, minerals, and vitamins. The course will emphasize comparative aspects of gastrointestinal anatomy and physiology for livestock, wildlife, and fish. Prerequisites: CHEM116.

BIOL337

General Ecology

(2,3) 3

A survey of concepts and applications of plant and animal physiological, morphological, behavioral, population, community, and systems ecology. Prerequisites: BIOL131, BIOL132 and MATH111.

BIOL380

Clinical Hematology and Hemostasis

(3,3) 4 Alternate Years

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: CHEM351 and BIOL330 as a pre- or corequisite.

BIOL385

Public Health Statistics and Epidemiology

(3,0) 3

Principles, purpose and methods of descriptive and analytic epidemiology with emphasis on environmental health. Prerequisite: BIOL280 or PSYC210 or SOCY302 or MATH207.

BIOL389

Internship in (Discipline)

(3-4) 3-4

A variable credit practicum course in which the students will perform research and/or gain work experience under the direction of a faculty mentor and a qualified supervisor. Students are expected to spend a minimum of 45 hours in an approved work setting for each credit earned. The course may be repeated once for a maximum of eight credits. Student interns will be required to write weekly updates or journal entries to be submitted to their LSSU faculty mentor for evaluation of what the student has learned. Prerequisites: 2.50 GPA in major and permission of faculty mentor or department chair.

BIOL399

Planning Research Project

(1,0) 1

A one credit practicum course in which students meet weekly with a faculty mentor to develop a senior research project, complete a formal research proposal, and present the research proposal to peers and faculty. Students and mentors will also meet in larger groups to discuss relevant literature and provide constructive feedback of student projects from BIOL499 and BIOL399. Prerequisites: BIOL280, BIOL299 and COMM101.

BIOL405

Animal Behavior

(3,0) 3 Alternate Years

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 BIOL330 or 337. Offered even-numbered fall semesters.

BIOL406

Immunohematology

(2,3) 3 Alternate-Year Course

Fundamentals of blood banking in the ABO, Rh and other blood group systems; blood component preparation and utilization; transfusion complications; quality control and problem solving. Laboratories include techniques used in immunology/serology; blood grouping; compatibility testing; and antibody identification. Offered even-numbered springs. Prerequisites: BIOL220. Pre- or co-requisite: BIOL423.

BIOL420

Evolutionary Analysis

(3,0) 3

This course explores the fundamental mechanisms of evolutionary process and speciation, and illustrates the use of evolutionary analysis as a problem-solving tool. Issues of current interest in ecology, conservation, animal behavior, human medicine and a variety of other fields are addressed from the evolutionary perspective to explain biological phenomena and community interactions. Prerequisite: BIOL220.

BIOL421

Advanced Cell & Molecular Biology

(3,3) 4

This course will examine cellular structure and function with emphasis on organelle ultrastructure, cell membranes and permeability, cellular interactions, and the molecular foundations of genetic mechanisms and cell energetics. Prerequisites: BIOL220 and CHEM351.

BIOL422

Parasitology

(2,2) 3

A study of the morphology, taxonomy, habitats, pathology and life cycles of parasites. Prerequisites: BIOL131 and 132.

BIOL423

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: BIOL131, BIOL132, BIOL204 and CHEM351.

BIOL425

Virology

(2,3) 3

The basic concepts of virology are discussed. Lab will cover some traditional virology methods but will emphasize recent molecular approaches to viral identification. Prerequisite: BIOL204 and BIOL220.

BIOL426

Animal Disease and Zoonoses

(3,0) 3

The course covers the environmental conditions that favor disease outbreaks, and the affects of diseases on the functional dynamics of both terrestrial and aquatic ecosystems, including human public health. Basic concepts of the ecology of infectious diseases and management strategies for functional ecosystems will be discussed. Prerequisite: BIOL337.

BIOL433

Histology and Histopathology

(3,3) 4 Alternate Years

A systems approach is used to study the microscopic anatomy of mammalian tissues and organs. Related physiological processes are integrated with the anatomical studies. The course includes an intensive laboratory experience where students will learn to visually identify diseased tissue. They will also learn methods of sample preparation including sectioning and staining for microscopic identification of pathogens. Prerequisites: BIOL330.

BIOL437

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: BIOL202, BIOL337 and MATH207.

BIOL450

Laboratory Apprenticeship (Discipline)

(0,3) 1

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. This is a credit/no credit course.

BIOL455

Clinical Chemistry and Body Fluids Analysis

(3,2) 4 Alternate Year Course

Covers molecular analytes that are measured in blood, urine, and body fluids: the physiologic and pathologic processes that affect the levels of these analytes, correlations of analyte levels with disease, methods and instruments used to measure them, and principles and practices of quality control. Offered fall of even-numbered years. Prerequisites: MATH207, CHEM332. Pre- or co-requisite: CHEM351. It is highly recommended that students take BIOL330, Animal Physiology, before taking BIOL455.

BIOL460

Clinical Internship

3 or 9

A six-month internship experience in a clinical laboratory. This course is open only to students in the Medical Laboratory Science Major, Clinical Concentration. Students will be placed at one of LSSU's affiliate clinical sites. There they will perform routine analyses of clinical specimens under the supervision of clinical site personnel. Students will be trained in chemical, hematological, microbiological, coagulation, and blood bank analyses. Prerequisites: BIOL380, BIOL406, BIOL423, BIOL455, BIOL480 and Permission of Course Director. Variable credits, 3 or 9; must be repeated once for a maximum of 12 credits.

BIOL480

Advanced Clinical Microbiology

(3,3) 4 Alternate Years

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: BIOL204 and CHEM326.

BIOL490

Independent Study in (Discipline)

(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 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 Natural Science.

BIOL495

Senior Project

(0,6) 2

A practicum under the guidance of a faculty member. The student will conduct a scholarly project based on the proposal submitted by the student in BIOL399 (or an appropriate substitute). Prerequisite: BIOL399.

BIOL499

Senior Symposium

1

A one credit practicum course in which students meet weekly with a faculty mentor to complete the formal senior thesis paper, and prepare both oral and poster presentations for the senior symposia. Students and mentors will also meet in larger groups to discuss relevant literature and provide constructive feedback of student projects from BIOL499 and BIOL399. Prerequisites: BIOL280, BIOL299 and COMM101.

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BUSN101

Freshman Seminar

(1,0) 1

This course will enable Business students to improve their academic skills, knowledge and utilization of Lake Superior State University (LSSU) services, familiarity with the unique local community of Sault Ste. Marie, understanding of the field of business, and individual professionalism in representing themselves as future businesspeople and LSSU advocates.

BUSN121

Introduction to Business

(3,0) 3

This course is intended to provide students a broad overview of the complex and dynamic contemporary world of business. The course will illustrate how human resources management, marketing, production, and finance are major functions that work together to help owners, employees and customers reach their objectives. Business must operate within economic, social, natural, technological, international, legal, and political environments.

BUSN211

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: MATH111.

BUSN231

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: ENGL111.

BUSN299

Internship in [Discipline]

(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 achieve the school approved learning objectives/outcomes established for the internship. Students are expected to spend a minimum of 45 hours (1 credit), 90 hours (2 credits), 135 hours (3 credits), or 180 hours (4 credits) in an appropriate work setting. This course may be repeated once for a maximum of four total credits. Prerequisites: 2.5 GPA, and approval of the Dean.

BUSN308

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.

BUSN350

Business Law I

(3,0) 3

This portion of business law covers the law applicable to contracts, sales, personal property and bailments.

BUSN355

Business Law II

(3,0) 3

This portion of business law covers the law applicable to commercial paper, corporations, partnerships, agency and employment.

BUSN389

Entrepreneurship

(3,0) 3

A study of individual small firms: start-up, on-going management, challenges, and requirements for success. Students will apply both strategic planning and the knowledge acquired from other business courses to (a) demonstrate understanding and competence in using S.A.P. in small business decision-making

and operations, (b) develop a viable business plan for a new small business, and (c) utilize problem-solving for other local small businesses, where required, in an advisory capacity. Prerequisites: BUSN121, ACTG132 or ACTG230, MRKT281.

BUSN399

Internship in [Discipline]

(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 achieve the school approved learning objectives/outcomes established for the internship. Students are expected to spend a minimum of 45 hours (1 credit), 90 hours (2 credits), 135 hours (3 credits), or 180 hours (4 credits) in an appropriate work setting. This course may be repeated once for a maximum of four total credits. Prerequisite: 2.5 GPA, junior standing or higher, employee and instructor approval of the Dean.

BUSN403

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: ECON202 and junior standing.

BUSN405

Business Ethics and Social Responsibility

(3,0) 3

Business ethics in organizations requires value-based leadership and purposeful actions that include planning and implementation of standards of appropriate conduct. This course will prepare students to be good corporate citizens through the study of business ethics, social responsibility, ethical decision making, corporate codes of ethical conduct, and how ethical behavior relates to organizational performance. Prerequisite: MGMT360 or MGMT365.

BUSN466

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. Prerequisites: Senior status and FINC341.

BUSN491

Research Reading in Business and Economics

(1-4,0) 1-4

Independent study and seminar; individual student guidance by faculty for selected research topics in business. This course may be repeated for a maximum

of eight total credits. Prerequisite: Senior status.

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CBUS122

Survey of Cannabis Business

(2,0) 2

The purpose of this course is to provide an overview of the history of cannabis from 2900 BC to modern day. Covering the use of cannabis and hemp and their historical agricultural and cultural importance, the prohibition of cannabis and subsequent cannabis law reform, and the inconsistencies in cannabis policy. The course will develop an understanding of Cannabis Industry, including an introduction to the types of businesses and products related to cannabis and hemp.

CBUS203

Cannabis Economics

(3,0) 3

The principles of economic reasoning as it applies to the Cannabis industry. Supply and demand, production and cost and the effect of price controls and public policy implications as it relates to the cannabis industry today. Prerequisites: Two years of high school algebra and equivalent/satisfactory score on ACT, SAT or Placement Exam or MATH102 with a grade of C or better.

CBUS305

Business of Cannabis Cultivation and Dispensary Operations

(3,0) 3

An introduction into the business side of various cultivation, harvesting and distribution methods. Costs, yield and labor requirements as well as benchmarking for the various methods will teach students how to increase the viability of a cannabis operation. Prerequisite: ACTG133.

CBUS360

Cannabis Law and Policy

(1,0) 1

This course is designed to teach students how state and federal laws are reformed in the United States. The course investigates the recent reform in State laws related to cannabis, how it was passed, and the effectiveness of the legislation. This course will examine the burgeoning field of law surrounding the use, management, sale and production of cannabis.

CBUS389

Cannabis Entrepreneurship

(3,0) 3

A study of individual small firms: start-up, on-going management, challenges, and requirements for success. Students will apply both strategic planning and the knowledge acquired from other business courses to (a) demonstrate understanding and competence in using S.A.P. in small business decision-making and operations, (b) develop a viable business plan for a new small cannabis

business, and (c) utilize problem-solving for other local small businesses, where required, in an advisory capacity. Prerequisites: ACTG132 or ACTG230, BUSN 121 and MRKT281. This course is dual-listed with BUSN389.

CBUS466

Cannabis 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. A business plan for a cannabis enterprise will be developed as a capstone experience. Prerequisites: Senior Status and FINC341. This course is dual-listed with BUSN466.

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CCHM120

Cannabis Chemistry I

(1,0) 1

A course designed to introduce scientific literature regarding cannabis and explore the basic principles of cannabis chemistry.

CCHM240

Cannabis Plant Sample Preparation

(1,3) 2

A course in cannabis plant preparation for analytical chemical analysis, covering plant dehydration, digestion, and extraction of pertinent organic and inorganic chemical analytes for analysis on modern chemical instrumentation. Prerequisite: CCHM 120 and either CHEM 108/CHEM 109 or CHEM 115.

CCHM245

Cannabis Chemistry II

(1,0) 1

A course providing an advanced understanding of cannabis chemistry through discussion of current scientific literature and modern methods of chemical analysis. Prerequisite: CHEM 120.

CCHM250

Cannabis Production

(1,0) 1

An introduction to commercial growing of cannabis. Topics include commercial cannabis growth including genetics and hybridization and the operational components of a cannabis grow. Prerequisite: CCHM240.

CCHM350

Cannabis Chemistry III

(1,0) 1

An advanced course in cannabis chemistry in which students will utilize their understanding of chemical principles to comprehend, discuss, and present advances in cannabis chemistry identified in current scientific literature.

Prerequisites: CCHM245 and CHEM225.

CCHM440

Cannabis Separations Chemistry

(3,3) 4

An analytical chemistry course in cannabis separations chemistry, this course will cover various types of chromatography, including GCMS, LC, and LCMS and their application to cannabis analysis. The course will also cover the operation and maintenance of the modern chemical chromatography instrumentation.

Prerequisite: CHEM 332 and CHEM 245.

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CHEM091

Basic Chemistry

(2,0) 2

Thorough exposure to elementary chemistry designed to prepare students for college-level chemistry. Emphasis on drill to enhance problem-solving skills.

Prerequisite: MATH088 or equivalent. Students must receive a C (2.0) or better in this course to qualify for CHEM104, CHEM108 or CHEM115. Credit in this course does not apply toward graduation.

CHEM108

Applied Chemistry

(3,0) 3

An introduction to selected principles of chemistry with emphasis on technological applications. Credit in this course does not apply toward a major or minor in chemistry. Prerequisites: Pre- or corequisite of MATH102.

CHEM109

Applied Chemistry Lab

(0,3) 1

Laboratory experience for CHEM108 Applied Chemistry (must complete both lecture and laboratory to qualify for general education credit). Corequisite: CHEM108.

CHEM110

Applied Organic & Biochemistry

(3,2) 4

A continuation of concepts presented in CHEM108 with an emphasis on the fundamentals of organic and biochemistry. The interrelationships between the metabolic processes of living systems are discussed along with their underlying chemical reactions. Prerequisite: CHEM108 or equivalent, with a grade of C- or better.

CHEM115

General Chemistry I

(4,2) 5

Fundamental principles of chemistry with emphasis such as scientific method, basic chemical reactions and acid base equilibria, stoichiometry, periodic trends of elements, an introduction to the energy of reactions, atomic structure, simple bonding models, molecular structure, and intermolecular forces. Pre- or corequisite of MATH111 or higher and ENGL091 or equivalent. Pre- or corequisite of MATH111.

CHEM116

General Chemistry II

(4,3) 5

Fundamental principles of chemistry with emphasis on physical chemical concepts such as solids and solutions, kinetics, thermodynamics, equilibrium, including acid-base reactions, electron transfer processes and nuclear chemistry. Prerequisite: CHEM115 with a grade of C- or better.

CHEM208

Survey of Organic Chemistry with Biological Applications

(3,3) 4

A survey course in organic chemistry covering the nomenclature, structure, reactivity, synthesis, and spectroscopic analysis of important organic compounds with an emphasis on biological applications. This course will introduce students to the chemistry of bio-organic compounds and persistent organic pollutants. The laboratory will introduce basic organic laboratory techniques and will include experiments in organic synthesis, separations, and analysis. Prerequisite: CHEM116.

CHEM225

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: CHEM116 with a grade of C- or better.

CHEM231

Quantitative Analysis

(3,3) 4

Evaluation of analytical data and study of gravimetric and titrimetric methods of analysis. Prerequisites: CHEM116 with a grade of C- or better and MATH111 with a grade of C.

CHEM261

Inorganic Chemistry

(3,3) 4

This course will provide a foundation in Inorganic Chemistry with a focus on understanding the properties of the elements, bonding and geometries of small molecules and their chemical reactivities. Survey of main group and transition metal chemistry and applications to bio-inorganic chemistry. The laboratory component will provide students with opportunities to observe and measure the changes that accompany inorganic reactions and to make predictions regarding these inorganic reactions. Prerequisite: CHEM116 with a grade of C- or better.

CHEM290

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 Natural Resources office.

CHEM310

Applied Spectroscopy

(3,3) 4

General principles of spectroscopy will be explored including underlying principles and theory, data acquisition and processing coupled with spectral interpretation. Different spectroscopic methods used for the structural determination of organic molecules and in chemical research are described including mass spectrometry (MS), ultraviolet and visible spectroscopy (UV-Vis), infra-red spectroscopy (IR), atomic spectroscopy, fluorescence spectroscopy, and both one-dimensional and two-dimensional ^1H and ^{13}C nuclear magnetic resonance (NMR) spectroscopy. Prerequisite: CHEM231 and CHEM326. (Alternate Years)

CHEM326

Organic Chemistry II

(3,3) 4

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 advance 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: CHEM225 with a grade of C- or better.

CHEM332

Instrumental Analysis

(3,3) 4

Continuation of CHEM231. 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: CHEM231 with a grade of C- or better. Recommended either PHYS222 or PHYS232.

CHEM351

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, vitamins, 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: CHEM225.

CHEM353

Introductory Toxicology

(3,0) 3 Alternate Years

An introduction to toxicology, including its history, types of poisons, their mode of operation and the biochemistry of detoxification. Environmental problems caused by toxic contaminants will be discussed. Prerequisite: CHEM351

CHEM355

Medicinal Chemistry

(3,0) 3

Principles of medicinal chemistry and the role of drugs in disease treatment will be explored in this course. This course examines biological target identification, methods of drug discovery and development, and drug pharmacokinetics. Prerequisite: CHEM 326, CHEM 351

CHEM361

Physical Chemistry I

(4,0) 4

Chemical thermodynamics with applications to both phase and chemical equilibria. Prerequisites: CHEM116, one year of physics, and either MATH112 or MATH152. Corequisite: CHEM363.

CHEM362

Physical Chemistry II

(3,0) 3

Traditional quantum chemistry topics will be discussed that help explain chemical phenomena and provide descriptions and applications for spectroscopy. Prerequisite: CHEM361.

CHEM363

Physical Chemistry Laboratory: Kinetics and Reaction Dynamics

(0,3) 1

An advanced laboratory exploring reaction kinetics and dynamics with an emphasis on modern methods of physical chemistry measurement. Prerequisite: CHEM116 and one semester of calculus.

CHEM395

Junior Seminar

(1,0) 1

Literature searching, scientific writing, and oral presentation of scientific data. Students will be expected to listen to presentation of peers enrolled in CHEM/EVRN499 and develop a topic for their senior thesis. Prerequisite: Junior standing. Note: Also listed as EVRN395.

CHEM399

Internship in Chemistry

(1-4) 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. Work hours and activities must be documented daily and approved by both the on-site supervisor and the instructor to receive credit. The course may be repeated for a maximum of four credits. Prerequisite: 2.5 GPA in major, Junior standing and permission of chair at least one semester in advance of registering for the course.

CHEM445

Forensic Science

(3,3) 4

This is a capstone class for the forensic chemistry degree. It will focus on standard and non-standard methods in forensic science. Lecture and laboratory concentrate on quantitative and qualitative drug analyses, fingerprint visualization techniques, ballistics, DNA analyses, and chemical analyses of evidence. Gas chromatography, atomic absorption spectrometry, and infrared spectroscopy techniques will be used to differentiate evidence. In this course much time will be spent on mechanisms of the analyses facilitating critical thinking skills. Prerequisites: CHEM332 and CJUS444. Note: Also listed as CJUS445.

CHEM450

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 CHEM electives. This is a credit/no credit course.

CHEM452

Advanced Biochemical and Molecular Techniques

(2,4) 4 Alternate Years

A course covering advanced laboratory techniques for manipulating and analyzing bio-polymers such as proteins and nucleic acids. A brief discussion of bioinformatics will be presented. Protein expression vectors, PCR, and modern molecular techniques will be explored with potential applications for chemistry, biology, toxicology, forensic, and clinical lab science. Prerequisite: CHEM351.

CHEM461

Advanced Inorganic Chemistry

(3,0) 3 Alternate Years

This is an every-other-year course. This course will meet for three hours per

week. Advanced concepts of inorganic chemistry will be examined, including atomic structure, ionic and covalent substances, acids and bases, main group elements, and transition metal elements. Prerequisite: CHEM261.

CHEM462

Advanced Inorganic Chemistry Laboratory

(0,3) 1 Alternate Years

This is an every-other-year course. This laboratory will meet for three hours per week. Advanced concepts of inorganic chemistry will be examined in a laboratory setting. Pre- or corequisites: CHEM461 and either CHEM310 or CHEM332.

CHEM490

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 Environmental and Physical Sciences office.

CHEM495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. This course will be required for a degree certified by the American Chemical Society. This course may not be repeated for credit. Prerequisites: CHEM395 (also listed as EVRN395) and permission of instructor. Dual listed as EVRN495.

CHEM499

Senior Seminar

(1,0) 1

Required for seniors majoring in chemistry/environmental science. Students will present the results of their scholarly research. Students who have completed CHEM/EVRN495 will be required to give poster and oral presentations to the University community as part of this class. Pre- or corequisite: CHEM395 (also listed as EVRN395). Dual listed as EVRN499.

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CHIN151

First-Year Chinese I

(4,0) 4

An introductory course designed to develop the four basic language skills in listening, speaking, reading, and writing in the target language as well as the acquisition of basic Chinese grammar and vocabulary. A communicative approach

based on real-life situations. Relevant Chinese cultural aspects discussed. English used as necessary in classroom instruction.

CHIN152

First-Year Chinese II

(4,0) 4

Further development of basic language skills in listening, speaking, reading and writing with a strong emphasis on speaking and reading fluency. Relevant cultural aspects briefly discussed and the target language used progressively in instruction when it fits. Prerequisite: CHIN151 or equivalent.

CHIN251

Second-Year Chinese I

(3,0) 3

An intermediate-level course aiming at expanding the learner's ability to communicate in everyday life situations in the target language. Continued focus on language proficiency in listening, speaking, reading, and writing as well as further development of vocabulary knowledge and consolidation of grammatical knowledge. Social and cultural norms and conventions discussed when appropriate. Communicative approach used in instruction. Prerequisite: CHIN151, CHIN152 or equivalent.

CHIN252

Second-Year Chinese II

(4,0) 4

An intermediate-level course aiming at expanding the learner's ability to communicate in everyday life situations in the target language. Continued focus on language proficiency in listening, speaking, reading, and writing as well as further development of vocabulary knowledge and consolidation of grammatical knowledge. Social and cultural norms and conventions discussed when appropriate. Communicative approach used in instruction. Prerequisite: CHIN251 or equivalent.

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CHLD101

Introduction to Early Childhood Education

(4,0) 4

This course provides an introduction to the field of early childhood. Topics include typical and atypical developmental milestones in the social, emotional, physical, intellectual and moral development of children from birth to age 8. In addition, the history of early childhood education, types of programs and issues in the field of childcare will be addressed. Field experience is required.

CHLD103

Learning Environments for the Young Child

(4,0) 4

This course explores the contributions of child development theorists, and the multiple integrated influences of family and community, to the design and

implementation of early childhood learning environments. The use of space, materials, and routines in providing inclusive, safe environments is considered, as well as philosophical approaches to supporting young learners. Field experience is required. Prerequisite: CHLD101.

CHLD150

Observation and Assessment

(4,0) 4

This course provides experience with the practices and tools for observation, documentation, and assessment of young children from birth through age eight. Discussion will include the use of results of assessment for planning continued developmental and learning experiences, as well as for appropriate classroom management and guidance strategies. Field experience is required.

CHLD210

Infants and Toddlers

(4,0) 4

This course examines the design and evaluation of developmentally appropriate teaching, caregiving, and guidance practices for children from birth to 36 months. Addresses environments that provide challenging and developmentally appropriate expectations to stimulate development toward the long-term goals of autonomy, and cognitive and social-emotional growth of infants and toddlers. Field experience is required. Prerequisite: CHLD150.

CHLD225

Emergent Literacy

(3,0) 3

This course focuses on literacy acquisition theory and language development milestones for children from birth through age 8. Factors that affect reading acquisition and techniques that assist children in developing listening, speaking, reading and writing skills are also explored. Consideration of the unique needs of English Language Learners is included. Prerequisite: CHLD210.

CHLD241

STEM Foundations for the Young Child

(4,0) 4

This course explores basic concepts and skills in science, mathematics, engineering, and technology appropriate to early childhood education. Field experience is required. Prerequisites: MATH110 or higher; BIOL105.

CHLD242

Creativity & Humanities

(4,0) 4

This course examines literature, visual and performing arts, and social studies topics appropriate to early childhood education. Field experience is required. Prerequisites: ENGL111, SOCY103.

CHLD245

Early Childhood Curriculum

(3,0) 3

This course focuses on the design of developmentally appropriate practices and curriculum for young children. Emphasis is placed on planning learning activities that support positive developmental outcomes, as well as on differentiating instructional strategies for the individual child. Field experience is required. Prerequisite: CHLD150.

CHLD260

Practicum I

4

The student will complete at least 140 hours in an early childhood setting culminating in experience as a lead teacher. Seminar meetings are included. Grading will be CR/NC. Prerequisites: CHLD150 and permission of instructor.

CHLD270

Administration of Early Childhood Programs

(2,0) 2

This course focuses on the financial, legal, supervisory and administrative procedures used in operating early childhood programs, including applicable local, state, and national standards. Prerequisite: CHLD150.

CHLD310

Inclusion of Young Children with Special Needs in Early Childhood Settings

(3,0) 3

This course provides resources and models for designing and implementing quality inclusive learning environments for young children who demonstrate developmental diversity birth to age 5. Includes identification of common delays, impairments and disabilities, as well as assistive technologies appropriate for supporting continued development. Field experience is required. Prerequisite: CHLD210.

CHLD330

Philosophical Foundations of Early Childhood Education

(2,0) 2

This course expands on basic knowledge of early childhood education practices to examine and evaluate contemporary early childhood program models and philosophical foundations. Prerequisite: CHLD260

CHLD350

Early Childhood Facilities Management

(2,0) 2

This course develops an advanced level of knowledge and skills necessary for effective management of child development centers, preschools, and other facilities. Effective leadership styles are considered. Prerequisite: CHLD270.

CHLD410

Practicum II

4

Students complete at least 140 hours in an early childhood setting, with primary emphasis on curriculum and administrative responsibilities. Seminar meetings are included. Grading will be CR/NC. Prerequisites: CHLD350 and Permission of Instructor.

CHLD440

Family and Community Partnerships

(3,0) 3

This course explores the multiple integrated influences that impact the development of young children, and provides opportunities for students to develop collaborative and cooperative skills that are essential to building partnerships focused on supporting that development. The various roles of the early childhood educator as an advocate for individual children and for the community is addressed. Field experience is required. Prerequisite: CHLD310.

CHLD480

Directed Teaching: Seminar

(1,0) 1

This seminar provides a forum for students in the CHLD Directed Teaching experience to discuss issues in early childhood education, classroom management, teaching of all students and professional development. Co-requisite: CHLD492.

CHLD492

Directed Teaching: Early Childhood

5

This course is a full-time teaching practicum under the direction and mentoring of a cooperating teacher at the pre-primary level. Evolution from observation and facilitation of small group activities, to whole-class instruction of a full-teaching load in an area center. Emphasis is placed on full range of responsibilities, including family involvement and administrative responsibilities. Grading will be CR/NC. Prerequisite: Admission to student teaching internship. Corequisite: CHLD480.

CHLD495

Senior Project 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. Requires field research and oral presentation. Prerequisite: Senior Status and Instructor's approval.

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CJUS101

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.

CJUS102

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.

CJUS103

Introduction to Terrorism and Homeland Security

(3,0) 3

This course will provide learners with historical view of terrorism, its origins, methodology, and ideology. It will also provide the learner with knowledge of specific events of the 20th century related to terrorism that have formed modern terrorism. Finally it will discuss the worldwide effort on deterring and discovering terrorist activities.

CJUS110

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.

CJUS130

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.

CJUS140

Criminological Theory and Correctional Client Growth

(3,0) 3

Emphasis on needs, identities and development of recipients of correctional services; to assist students in gaining insight into development of sensitivity to behavior and motivations of corrections clients. Specific problems of prisoners and intervention strategies are reviewed.

CJUS197

Physical Fitness for Public Safety

(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Law enforcement students (MCOLES) take course both semesters of their senior year.

CJUS201

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. Prerequisite: Criminal justice student, sophomore standing or permission of instructor. Course may be repeated twice for credit, to a maximum of 3 credits.

CJUS203

Cyberterrorism

(3,0) 3

This course will examine the problem of both domestic and global Cyberterrorism/Cybercrimes. The recognition of various types of crimes committed using computers, the Internet, and other Electronic Devices. Learners will learn investigative techniques and legal issues as related to the investigation of Cybercrimes.

CJUS204

Domestic and International Terrorism

(3,0) 3

This course will examine the history and modern trends of Domestic, International and Transnational Terrorism. This will include the profile of terrorist recruits, the structure and dynamics of terrorist organizations, and government sponsored terrorism. The motivation of various organizations and their methods of terrorist violence, as well as, their justification of violent acts will be discussed. Antiterrorism and Counterterrorism measures will be analyzed.

CJUS206

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.

CJUS212

Loss Control

(3,0) 3

Study of security, including historical, legal and philosophical framework for various phases of security operations in our society today.

CJUS220

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.

CJUS240

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.

CJUS243

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: CJUS101.

CJUS250

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.

CJUS301

Advanced Firearms

(0,2) 1

Emphasis will be on maintaining safe firearm handling, the reinforcing of the fundamentals of good marksmanship, and proper methods of cleaning and maintaining firearms. This course will expound on concepts, techniques, and knowledge learned in the CJUS201 Firearms course to include close quarter combat firing and weapon retention, advanced firearm cleaning and multiple target evaluation and courses of firing. Prerequisite: CJUS201 with a "C" or better grade or approval of MCOLES Director.

CJUS302

Hate Crimes

(3,0) 3

The course explores the history of racism, xenophobia, hate crimes, and extremism from a criminal justice perspective. A restorative justice model shall be utilized in examining hate crimes from a law enforcement, theoretical, political and legal context. Prerequisites: CJUS101, CJUS102, CJUS140 and Junior standing or permission of the instructor.

CJUS303

Critical Infrastructure Protection

(3,0) 3

This course will examine the historical development of the United States modern infrastructures. The course will provide an in depth knowledge of the critical infrastructures and the current protection methods. The learner will then learn

advanced protection techniques and vulnerability analysis skills utilized to protect the assets.

CJUS306

Security Systems

(3,0) 3

Overview of specialized areas of security in specific facilities with special attention given to management of security information. Prerequisite: CJUS212.

CJUS313

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: CJUS101 and CJUS102.

CJUS319

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: CJUS101.

CJUS321

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: CJUS101 and CJUS102.

CJUS325

Homeland Security and Emergency Services

(3,0) 3

This course will prepare all graduates from a variety of majors to understand how homeland security impacts the US political system as a whole, but especially from the standpoint of emergency response and preparedness. Investigates the impact of the federal homeland security apparatus on emergency response organizations at the state and local level. Includes a historical review of homeland security measures beginning in WWI and through WWII and the Korean War. Especially reviews the security situation during the Cold War. The course deals with the federal agencies usually not associated with homeland security, such as DEA, ATF, the military departments, FAA, CDC, the National Guard Bureau, and the DOD. Prerequisite: Junior standing. Students from other majors are encouraged to enroll with permission from instructor. Also listed as FIRE325.

CJUS330

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: CJUS220, CJUS240, and junior or senior standing.

CJUS341

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.

CJUS345

Statistics and Design for Public Safety

(3,2) 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 MATH088 or equivalent/satisfactory score on ACT or Placement exam.

CJUS355

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: CJUS101 and SOCY214.

CJUS384

International and Comparative Criminal Justice Systems

(3,0) 3

A survey of selected world criminal justice systems including police, courts, and corrections. Cross-national and cross-cultural criminality from several perspectives will be examined as will the globalization of crime.

CJUS401

Senior Seminar

(3,0) 3

Seminar and independent study course with individual student guidance by faculty on selected research topics in criminal justice. Prerequisite CJUS345 and Senior standing.

CJUS402

Criminal Justice Internship

3-9

Criminal justice internship with an agency. Credit is based on the equivalent of 45 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. Course may be repeated for a maximum of 9 credits.

CJUS409
Procedural Criminal Law
(3,0) 3

Principles, duties and mechanics of criminal procedures as applied to important areas of arrest, search and seizure. Prerequisite: CJUS319; or permission of MCOLES Director.

CJUS411
Police Operations
(5,0) 5

A capstone course for Michigan Commission on Law Enforcement Standards (MCOLES) Criminal Justice certification students. Court functions, domestic violence law and procedures, ethical issues, civil disputes, interpersonal relations, juvenile offenders and other related topics. Prerequisite: Permission of MCOLES Director.

CJUS425
Women and Criminal Justice
(3,0) 3 Alternate years

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: CJUS101, and junior or senior standing.

CJUS444
Criminalistics
(3,3) 4

Criminalistics 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 MCOLES mandated hours. Prerequisite: CJUS243 or permission of MCOLES Director.

CJUS445
Forensic Science
(3,3) 4

This is a capstone class for the forensic chemistry degree. It will focus on standard and non-standard methods in forensic science. Lecture and laboratory concentrate on quantitative and qualitative drug analyses, fingerprint visualization techniques, ballistics, DNA analyses, and chemical analyses of evidence. Gas chromatography, atomic absorption spectrometry, and infrared spectroscopy techniques will be used to differentiate evidence. In this course much time will be spent on mechanisms of the analyses facilitating critical thinking skills. Prerequisites: CHEM332 and CJUS444. Also listed as CHEM445.

CJUS450
Skills Academy

A practicum course addressing the skills and competencies needed for certification through the Michigan Commission on Law Enforcement Standards (MCOLES). Prerequisite: Permission of MCOLES Director. Course may not be repeated for credit.

CJUS484

Futures Research: Long-Range Planning for Criminal Justice

(3,0) 3 Alternate Years

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: CJUS101 and CJUS102.

CJUS490

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.

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COMM101

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.

COMM201

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: COMM101.

COMM210

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: COMM101.

COMM211

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: COMM101.

COMM225

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: COMM101.

COMM280

Understanding the Mass Media

(3,0) 3

Acquaints students with the basic similarities and differences in newswriting among the mass media, particularly newspapers, radio and television. Students will practice writing in the various formats. Prerequisite: ENGL110.

COMM302

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: COMM101.

COMM307

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: COMM101.

COMM308

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: COMM101.

COMM320

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: COMM101.

COMM325

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: COMM101.

COMM399

Internship in Communication

(1-4) 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 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.

COMM416

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: COMM101.

COMM490

Senior Directed Study in Communication

(3-4) 1-4

This course is designed to allow communication majors the opportunity to develop and implement a project/paper using the skills and knowledge from their previous course work. Projects/papers should relate to a student's individual areas of interest within the communication discipline, and represent a synthesis of their previous learning under the supervision of an appropriate faculty member. Prerequisites: senior status and approval of the appropriate chair(s).

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CSCI101

Introduction to Microcomputer Applications

(2,2) 3

The study of a selection of contemporary microcomputer applications, including operating systems concepts, word processing, spreadsheets, database management systems, and the Internet and World Wide Web. Brief survey of other applications, such as presentation graphics, multimedia usage and desktop publishing. Does not apply toward credit in computer science major or minor.

CSCI103

Survey of Computer Science

(3,0) 3

An introduction to the field of computer science for computer science, computer networking, and web development majors. Applications, history of computing, computer networks and the Internet, programming, hardware, theory of computation, algorithms, fundamental concepts in computing.

CSCI105

Introduction to Computer Programming

(2,2) 3

An introductory course in computer programming in a graphical development environment, intended for students with no prior computer programming experience. Arithmetic, control structures and simple data structures. Sound, graphics and animation techniques. Prerequisite: MATH088 or equivalent/satisfactory score on SAT, ACT or Placement Exam.

CSCI106

Web Page Design and Development

(2,2) 3

Topics include planning a web site starting with domain name registration and selection of hosting service providers, creating web page using HTML/XHTML and cascading styles sheets; validating web pages; using web authoring tools such as Dreamweaver; publishing web pages to a remote web server, introductory web site design, including best practices for inserting graphics, page layout, building the web site navigation and user interface, integration of third-party and Web 2.0 tools and software, implementing web and accessibility standards, ethical and legal issues such as copyright and trademarks.

CSCI107

Web Graphic Design and Development

(2,2) 3

Apply graphic design, typography, color theory, and image composition to enhance a web site. Create web graphics using Adobe Photoshop and Microsoft Expression Design. Insert graphics into web pages and publish web sites using Adobe Dreamweaver and Microsoft Expresssion Web.

CSCI121

Principles of Programming

(4,0) 4

A broad-based introduction to computer programming, using the C++ programming language and basic operating system features as vehicles. Basic programming principles, including built-in and programmer-defined data, operators, functions and control structures. Introduction to classes and dynamic memory allocation. Text manipulation and parsing, binary files, and exception

handling. C-style input and output. Applications will be drawn from across the discipline of computer science. Prerequisite: CSCI105 and MATH102 (or equivalent math placement) with a grade of C or better in both classes.

CSCI131

Computer Prog Principles-Ind S

(1,0) 1

This course is designed to bridge the gap between transfer courses that are either 'not quite' CSCI121 or are in a different programming language than the current LSSU offerings of CSCI121 and CSCI201. Students may not receive credit for both CSCI121 and CSCI131. Requires permission of instructor.

CSCI163

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 interference as they relate to computer repair and operation. The disassembly and upgrading of a personal computer will be covered in the laboratory as well as the use of diagnostic hardware and software.

CSCI201

Data Structures and Algorithms

(4,0) 4

An introductory course in data structures and algorithms, with an emphasis on abstraction, implementation and analysis. Advanced class concepts, including operator overloading, Linked lists, stacks, queues, trees and binary trees. Separate compilation and third-party libraries. Application of various data structures to problems selected from the spectrum of computer science topics. Prerequisites: CSCI121 with a grade of C or better and MATH111 (or equivalent math placement) with a grade of C or better.

CSCI207

Developing Multimedia and Rich Interactive Web Sites

(2,2) 3

Transform static web pages into rich media-based interactive web applications. Apply graphic design and marketing principles to design and produce audio and video components for both consumers and commercial web applications. Using Adobe Flash and Microsoft Silverlight, build rich interactive web applications. Publish web sites to a web server. Prerequisite: CSCI107 with a grade of C or better.

CSCI211

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: CSCI105 with a grade of C or better.

CSCI221
Computer Networks

(2,2) 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: CSCI103 and 105 with a grade of C or better.

CSCI248
Network Operating Systems I

(2,2) 3

An introduction to using and administering network operating systems. Students will also be introduced to virtualization of machines, as well as interaction between virtualized machines. Topics include: account setup, basic security, file and device sharing, and maintenance. Course topics will be presented in the context of different network operating systems. Prerequisite: CSCI221 with a grade of C or better.

CSCI263
Managing Computer Security

(3,0) 3

This course investigates the various security protection and recovery techniques available for networks and personal computers including security policies, procedures, and requirements necessary for protecting the integrity of information stored on networks, workstations, and other computer systems. Other topics include discussions on disaster recovery planning, emergency response teams, threat assessment, detection and remediation of a threat, standards for establishing a security framework, and operations security and production controls. Prerequisite: CSCI101 or CSCI103 with grade of C or better.

CSCI275
Web Server Administration

(2,2) 3

Install and configure a web server; identify the web server administrator role; monitor web server performance and log files; configure file transfer and email services; secure the server. Plan and configure an e-commerce web site. Prerequisites: CSCI221 and CSCI248, both with a C or better.

CSCI281
Introduction to UNIX and Networking

(2,2) 3

An introduction to the UNIX operating system, shell scripting, and UNIX networking from the users perspective. Topics include basic and intermediate UNIX commands and file structure, regular expressions, BASH/CSH shell scripting, basic UNIX network setup, introduction to UNIX system daemons and networking services. Prerequisite: CSCI221 with a grade of C or Better.

CSCI290
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.

CSCI291**Computer Science Project****(4,0) 4**

This is a hands-on course where the student is assigned a project at a corporate site. The student is expected to spend at least 8 - 10 hours a week on the project. Topics for the project may include creating a substantial Web site, designing and implementing an application system for a user, modifying and updating an existing software system, or other related projects. The projects will vary each semester. Prerequisites: CSCI201 with a grade of C or better.

CSCI292**Computer Networking Project****(4,0) 4**

This is a hands-on course where the student is assigned a project in a corporate network setting. The projects will vary each semester to allow students to implement their knowledge to create and maintain a real-world network system. Activities could include the wiring of the network, installing and maintaining users, installing and repairing workstations, maintaining a Novell or Microsoft network, monitoring an NDS tree, and other similar activities. The student is expected to spend at least 8-10 hours per week on the project including hours on site, doing research, and writing weekly report logs. Prerequisite: CSCI106 and 107, both with a grade of C or better, or CSCI163 and CSCI221, both with a grade of C or better.

CSCI321**Computer Graphics****(3,0) 3 Alternate Years**

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: CSCI201, and either MATH112 or 151, all with a minimum grade of C.

CSCI323**Routers and Switches****(2,2) 3**

Principles of Wide Area Networks, IP and TCP, routers, routing protocols and configurations, virtual LANs, network management, subnetting, design of LANs and WANs, and security issues. Students completing this course will be prepared to take the CCENT and CCNA certification exams. Prerequisite: CSCI221 with a grade of C or better.

CSCI325

Developing Web Applications with JavaScript and PHP

(2,2) 3

Transform static web sites into dynamic web sites using a combination of client and server-side web programs. Process and validate forms, build interactive web sites, manage web databases and publish web sites to a web server.

Prerequisites: CSCI121, CSCI211 with a grade of C or better.

CSCI326

Developing Web Applications with ASP.NET

(2,2) 3

Create and publish web server and web database applications using the Microsoft ASP.net framework; Emphasis on improving performance, security, and isolating business logic from the user interface. Prerequisites: CSCI121, CSCI211 with a grade of C or better.

CSCI341

Discrete Structures for Computer Science

(4,0) 4 Alternate Years

Formal logic and proof techniques; recursion, recurrence relations and combinational methods; analysis of algorithms; algebraic structures; trees and graphs; Boolean algebra and computer logic; models of computation and formal languages. Emphasis will be on applications to computer science. Prerequisites: CSCI121 with a grade of C or better, and either MATH112 or 151 with a grade of C or better.

CSCI342

Advanced Programming Techniques

(4,0) 4 Alternate Years

Advanced data structures including general trees and graphs. Advanced programming techniques, including: divide and conquer, dynamic programming, greedy algorithms, graph algorithms, balanced trees. Emphasis will also be placed on the software development process, debugging and testing methodologies. Prerequisites: CSCI201 with a grade of C or better.

CSCI348

Network Operating Systems II

(2,2) 3

A continuation of using and administering network operating systems. Students will also be introduced to virtualization of servers, as well as interaction between virtualized machines. Topics include: file system and network service management, remote access, security, printing, and disaster recovery. Course topics will be presented in the context of different network operating systems. Prerequisite: CSCI248 with a grade of C or better.

CSCI351

Mobile Application Development

(3,0) 3

Introduction to the development of applications for smart phones and tablets; using a simulator and provisioning to mobile devices; user interfaces, touch

events, data management, and graphics; interaction with camera, accelerometer, and location hardware. Prerequisite: CSCI121 with a grade of C or better.

CSCI371

Multi-Platform Application Development

(3,0) 3

The design and implementation of applications across multiple platforms, with a goal of a similar or identical code base between versions. The course covers a variety of programming environments, as well as a variety of platforms. Focus will be on comparison between programming languages, as well as the strengths and weaknesses of various programming environments and models for a uni-platform vs a multi-platform approach. Prerequisite: CSCI121 and either CSCI281 or CSCI201 all with a grade of C or better.

CSCI411

Advanced Database and Project Management

(3,0) 3 Alternate Years

Designing and implementing an enterprise-level database. Creating interfaces to database systems from common programming language platforms. Capturing requirements, process modeling, project scheduling, documenting, testing, delivering and maintain a system. Prerequisites: CSCI201 and CSCI211, each with a minimum grade of C.

CSCI412

UNIX Network Administration

(2,2) 3

Network administration how to and issues for Linux. Installation of a Linux networked system, maintenance and upgrade of a Linux installation, security issues, common scripting languages, system admin tasks, NFS, and mail systems; other UNIXes. Prerequisites: CSCI221 and 281, both with a grade of C or better.

CSCI415

Computer Organization and Architecture

(3,0) 3

A hardware-orientated 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. Parallel computing for both SMP and MIMD models. Prerequisite: CSCI201 and either CSCI351 or CSCI371 with a grade of C or better.

CSCI418

Senior Project I

(1,4) 3

This course is the first part of the two-part sequence CSCI418/CSCI419. The student will begin a two-semester capstone experience that will include one of the following: a software project; a network implementation; a co-operative education position with an external company; or a research project. The experience must include the fulfillment of customer-generated requirements. The

projects/experiences will vary each year to allow students to experience work in a real-world environment. Students in CSCI418 must take CSCI419 the following semester. Prerequisite: CSCI291 or CSCI292 with a C or better and permission of instructor.

CSCI419

Senior Project II

(1,4) 3

The second of a two-part sequence, CSCI419 provides students with the skills necessary for completion of their two-semester capstone experience that will include one of the following: a software project; a network implementation; a cooperative education opportunity with an external company; or a research project. The experience must include the fulfillment of customer-generated requirements. The projects/experiences will vary each year to allow students to experience work in a real-world environment. Students in CSCI418 must take CSCI419 the following semester. Prerequisite CSCI418 with a C or better and permission of the instructor.

CSCI422

Network and Computer Security

(2,2) 3

An advanced look at common computer and network exploitation techniques in use today. Course emphasis is on how exploits work (both from the exploiters perspective as well as the software faults that allow these exploits to exist), what can be done with the exploits, as well as mitigation and solution techniques for containing the damage to administered systems. Prerequisites: CSCI412 and either CSCI351 or CSCI371.

CSCI434

Operating Systems Concepts

(3,0) 3 Alternate Years

Definition and historical development of operating systems. Characteristics of batch, interactive and multiprogramming systems. File systems, processor and memory management. Communication, concurrency, deadlock, protection, parallel and distributed systems. Case studies of modern operating systems. Prerequisite: CSCI201 with a minimum grade of C.

CSCI490

Individualized 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 nine credits. Prerequisites: Junior standing or higher.

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CULN111

Beginning Culinary Skills

(4,12) 8

First course in the culinary arts focusing on the basics behind basic cooking principles including, but not limited to, grilling, boiling, broiling, searing, poaching, steaming, basting, braising, sauteing, and roasting.

CULN113

Kitchen Safety and Sanitation

(0,6) 2

Training in kitchen safety and sanitation and workplace safety for the employee and patron. Preparation for certification under a nationally recognized program. Corequisite: CULN111.

CULN115

Food and Beverage Management

(0,6) 2

This course will cover the basic principles of food and beverage operations management. It will cover the 'big picture' of how to ensure profitability and proper management of food and beverage businesses. It will cover food and beverage cost analysis, menu development and engineering, basic staff management and labor cost control, property acquisition, income statement analysis, business financial development and analysis, purchasing and receiving, etc. Corequisite: CULN111.

CULN121

Advanced Culinary Skills

(4,12) 8

This course will be similar to beginning cookery, though cooking techniques and equipment will be more advanced. Students dive into advanced cooking techniques such as smoking, curing, yeast breads, pickling, fermenting, quick breads, cakes, custards, etc. Students will be required to carry an appropriate knife kit and be in proper uniform. Prerequisite: CULN111.

CULN123

Service Operations

(0,6) 2

This course will educate students on the service and bar aspect of food and beverage operations. Students will be trained in proper service techniques, as well as the basic techniques behind managing the alcohol and non-alcohol aspects of the operation. Students will practice proper service language, understand the flow of FOH operations, understand basic mixology, become educated in wine varietals and pairing, and undertake basic barista training. Prerequisite: CULN111; Corequisite: CULN121.

CULN125

Nutrition for Chefs

(0,6) 2

Fundamentals of human nutrition in relation to the culinary arts with a basis in human body function, wellness, metabolism and nutrients. Prerequisite: CULN111; Corequisite: CULN121.

CULN130

Culinary Internship

(0,6) 6

A supervised internship working in an approved food and beverage operation designed to further develop the chef's skill set in real-time culinary environments. A portion of the internship must be completed at an LCCS facility. Prerequisite: CULN121.

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DATA225

Word Processing Techniques

(3,0) 3

Students will cover basics of word processing including document creating, saving, printing, and some advanced features such as table, merge, graphics and report formatting. Hands-on experience is scheduled in labs outside of classroom hours.

DATA231

Database

(3,0) 3

In this course, students will cover advanced database applications in business including creating database tables, forms, reports, mailing labels and charts; creating relationships between database tables; using database wizards; and performing queries and filtering records. A student may repeat this course covering a different database management system for a maximum of six credit hours.

DATA235

Spreadsheets

(3,0) 3

In this course, students will cover advanced spreadsheet applications in business including writing and working with formulas; creating templates; finding and organizing information by filtering, sorting and subtotaling; working with multiple worksheets; creating charts; working with data tables and scenario management; and importing data into spreadsheet software. A student may repeat this course covering a different spreadsheet software program for a maximum of six credit hour.

DATA250

Desktop Publishing and Presentation Design

(3,0) 3

Introduction to document design and layout, use of font, color and graphics to produce newsletters, brochures and presentations. Concepts included are presentation preparation and delivery. Graphics software will be used. Prerequisites: ENGL111 and a working knowledge of word processing.

DATA261

Multimedia Applications

(3,0) 3

In this course, students will be introduced to the design and production of Web sites. Graphics, animation, and sound will be incorporated in the creation of interactive Web pages. Macromedia Studio, which includes Dreamweaver and Flash, will be used.

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ECON201

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: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam or MATH102 with a grade of C or better.

ECON202

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: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam or MATH102 with a grade of C or better.

ECON302

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: MATH112 or equivalent.

ECON304

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: ECON201.

ECON305

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: ECON201 or 202.

ECON307

Environmental Economics

(3,0) 3

This course examines the application of economic analysis to problems of air, water, forests, fisheries, energy, and soil use; economic approaches to valuing the environment; the benefits and costs of pollution control; and alternative policy approaches to environmental problems with emphasis on emissions trading. Prerequisite: ECON202.

ECON308

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: ECON202.

ECON309

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: ECON201.

ECON407

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: BUSN211 or MATH207, ECON201, 202, MATH112 or 151.

ECON408

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: ECON201 and 202.

ECON409

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.

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EDSE301

Introduction to Special Education

(3,0) 3

An introduction to the historical and legal bases of special education. Research based examination of the models, theories and philosophy of teaching students with disabilities. Prerequisites: admission to the School of Education. This course may NOT be repeated for credit.

EDSE302

Communication and Community

(3,0) 3

Developing effective communication between all participants in the educational community involved in the education of students with special needs. Topics include preparing and implementing IEPs and communication with parents, students and teachers. Prerequisite: EDSE301.

EDSE320

Introduction to Learning Disabilities

(4,0) 4

An examination of the educational research, characteristics, diagnostic principles and practices related to teaching students with learning disabilities. Psychological theories (e.g. developmental, behavioral, and cognitive) of teaching students with learning disabilities and associated learning strategies are reviewed. Prerequisites: EDSE301, EDSE302.

EDSE401

Issues and Trends Impacting Learning Disabilities & Special Education

(3,0) 3

Contemporary issues in the education of students with learning disabilities and other special needs will be explored. Policies and regulations, requirements and procedures for service, curriculum adaptation and modification, delivery models relating to placement, privacy, advocacy, and family education will be discussed. Prerequisite: EDSE302.

EDSE403

Assessment and Diagnosis

(3,0) 3

An examination of the education research and best practices related to identification, assessment, instruction, accommodation, and implementation of special education programs. Legal responsibilities of the school in the areas of assessment, diagnosis, and diversity will also be addressed. Prerequisites: EDSE301, EDSE320.

EDSE404

Instruction and Technology: Preschool to Adult

(4,0) 4

An examination of the research and best practices using assistive technologies to increase, maintain or improve the capabilities of students with disabilities.

Prerequisites: EDSE320, EDSE403.

EDSE480

Student Teaching Seminar: Special Education

(1,0) 1

A seminar for teacher candidates during a student teaching internship in a special education classroom. Corequisite: EDSE492. Prerequisites: EDSE320, EDSE403, and EDSE404, and admission to student teaching. The course may NOT be repeated for credit.

EDSE492

Internship/Supervised Student Teaching: Learning Disabilities

(8,0) 8

Supervised student teaching internship in a special education classroom, focus on working with students with learning disabilities. Grading will be CR/NC.

Corequisite: EDSE480. Prerequisites: EDSE320, EDSE403, EDSE404 and admission to student teaching. The course may NOT be repeated for credit.

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EDUC101

Self as Learner

(2,0) 2

This course introduces students to the field of education. Emphasis is placed on the application of basic learning theory to personal success in learning, successful integration into the university culture, educational ethics, and professional growth through the study of controversies in education.

EDUC250

Student Diversity and Schools

(4,0) 4

This course will examine the impact of diversity on students and educational systems through the consideration of the historical and philosophical foundations of schooling, the impact of diversity on students' participation in the system, and the characteristics of effective teaching practice to meet the needs of diverse learners. Field experience in an Eastern Upper Peninsula elementary or secondary school is required. Prerequisite: ENGL111.

EDUC301

Educational Psychology and Learning Theory

(3,0) 3

This course focuses on research-based theories of learning and learning

processes, the role of the teacher in supporting the process, and alternatives for evaluation of learning outcomes. Field experience is required. Prerequisites: EDUC250 and admission to the teacher education program.

EDUC315

Peer to Peer Mentorship

(1,0) 1

In this practicum course, the student will receive training in mentorship and information about autism spectrum disorder and then become a mentor to an individual of approximately college age who receives local special education services. Thirty hours of field experience is required. The course may be repeated for a maximum of three credits and is open to all majors. Pre-requisites: Completion of general education diversity or social science courses.

EDUC330

Reading in the Elementary Classroom

(3,0) 3

This course examines reading as a process of constructing meaning through dynamic interaction among reader, the text, and the context of the reading situation. Content includes objectives, content, materials, organization and methods of teaching reading in the elementary school. Fieldwork required. Prerequisite: Admission to the teacher education program. Pre- or co-rerequisite: EDUC301.

EDUC350

Integrating Technology into 21st Century Learning Environments

(2,2) 3

This course explores instructional technology tools, educational media, theory, and practice with the goal of designing consummate learning experiences with seamless technology integration for all students. Application of technology and learning theory to planning for instruction is included, with specific focus on setting outcomes for learning. Prerequisites: Admission to the teacher education program, EDUC301.

EDUC410

Corrective Reading in the Classroom

(3,0) 3

This course considers methods for the classroom diagnosis of students' reading strengths and weaknesses. Techniques for planning and implementing corrective and remedial interventions based on diagnosis are presented and applied. Fieldwork required. Prerequisite: EDUC330.

EDUC411

Elementary Language Arts and Literacy Skills

(2,0) 2

This course studies methods of teaching language arts as literate activity and the use of a research base for the social context of children's learning. Emphasis is on the emergence of literacy in elementary students. Fieldwork required. Prerequisites: EDUC415, admission to teacher education program.

EDUC415

General Instructional Methods

(1,2) 2

This course provides opportunities to study and apply research-based instructional methodologies to facilitate effective learning with an emphasis on differentiation and authentic assessment. Fieldwork required. Prerequisites: Admission to the teacher education program, EDUC350.

EDUC420

Math Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies that facilitate effective mathematics instruction. Students develop and present mathematics lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. Prerequisites: MATH103, MATH104, EDUC415 and admission to teacher education program.

EDUC421

Science Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies that facilitate effective science instruction. Students develop and present science lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. EDUC415 and admission to teacher education program.

EDUC422

Social Studies Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies to facilitate effective social studies instruction. Students develop and present social studies lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. Prerequisites: EDUC415 and admission to teacher education program.

EDUC423

Arts Methods for Classroom Teachers

(2,0) 2

Elementary teacher candidates examine the knowledge, understanding, and application of the content, functions, and achievements of dance, music, theatre, and the visual arts to promote elementary students' ability to create, perform and respond in and through the arts. Candidates demonstrate their understanding that all students can learn the knowledge and skills that make up the arts.

EDUC424

Health/Physical Methods for Classroom Teachers

(2,0) 2

Elementary teacher candidates demonstrate the knowledge, understanding, and application of research-based strategies to create opportunities for all students to develop critical knowledge, skills, and behaviors that contribute to life-long health. Candidates demonstrate knowledge and understanding through planning and appropriate implementation of effective past and current research-based human movement and physical activity strategies as central elements to foster active, life-long healthy lifestyles for all elementary students.

EDUC430

General Methods for Secondary Teachers

(3,0) 3

A study of strategies and methodologies to facilitate learning at the secondary level including classroom management and organization for productive learning communities. The multiple roles of the teacher in the secondary classroom are examined including participant, colleague, researcher, reflective practitioner, accountable professional, counselor and mentor. Integrated technology component. Fieldwork required. Prerequisites: EDUC150, 250, 301 and admission to the teacher education program.

EDUC431

The Secondary Learner

(3,0) 3

A study of the dilemmas of adolescents as they affect students in secondary schools. The course focuses on the special needs and sensitivities of adolescents and implications for instruction and classroom management. Integrated technology component. Fieldwork required. Prerequisites: EDUC150, 250, 301 and admission to the teacher education program.

EDUC440

Reading in the Content Area

(3,0) 3

A study of reading methods appropriate to use in secondary classrooms. Includes formal and informal assessment procedures for determining students' abilities and the accompanying strategies to enhance content area comprehension and concept development. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: EDUC250, EDUC301 and admission to the teacher education program.

EDUC441

English Language Arts Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific language arts and English content. Students develop and present English lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC442

Math Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific mathematics content. Students develop and present math lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC443**Science Methods for Secondary Teachers****(3,0) 3**

This course applies general instructional strategies and methodologies to specific science content. Students develop and present science lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC444**Social Studies Methods for Secondary Teachers****(3,0) 3**

This course applies general instructional strategies and methodologies to specific social studies content. Students develop and present social studies lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC451**Directed Study in English Language Arts Methods for Secondary Teachers****(3,0) 3**

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific language arts and English content. Students develop and present English lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC441. Prerequisite: EDUC415 or EDUC430.

EDUC452**Directed Study in Math Methods for Secondary Teachers****(3,0) 3**

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific mathematics content. Students develop and present mathematics lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC442. Prerequisite: EDUC415 or EDUC430.

EDUC453**Directed Study in Science Methods for Secondary Teachers**

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific science content. Students develop and present science lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC443. Prerequisite: EDUC415 or EDUC430.

EDUC454

Directed Study in Social Studies Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific social studies content. Students develop and present social studies lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC444. Prerequisite: EDUC415 or EDUC430.

EDUC460

Classroom Management

(2,0) 2

This course focuses on effective classroom management techniques essential to creating a positive, democratic learning environment. Exploration of management techniques and theories leads to a development of personal classroom management system to help students become responsible for their behaviors and choices. Prerequisite: EDUC415.

EDUC480

Directed Teaching Seminar

(2,0) 2

This seminar provides a forum for students in the Directed Teaching experience to discuss issues in teacher education, classroom management, teaching of all students and professional development. Co-requisite: EDUC492.

EDUC490

Research Topics in Education

(1-4) 1-4

Individual study under supervision of teacher education faculty member. May be repeated to a maximum of four credits. Prerequisites: admission to the teacher education program, senior status and permission of instructor.

EDUC492

Directed Teaching

10

This course is a full-time teaching practicum under the direction and mentoring of a k-12 cooperating teacher. Evolution from observation and facilitation of small group activities, to whole-class instruction of a full-time teaching load in an area

school. Emphasis is placed on maintaining classroom communities that ensure equitable access to important knowledge and skills. Grading will be CR/NC. Prerequisites: Admission to student teaching internship. Corequisite: EDUC480.

EDUC624

Reading: Research and Methodologies

(3,0) 3

Theories, research, and methods focused on enabling students to become self-regulated readers who effectively use multiple strategies in their reading. Strategic processes in comprehension, word identification, critical thinking, and analysis will be examined as will the role of the teacher as a model and mediator of such processes in a variety of reading contexts. Pre-requisite: Admission to MA C&I program or permission of instructor.

EDUC635

Applying: [specify course title by section]

1

A directed study course applying the content knowledge developed through approved EDUC 900-level sections within the context of curriculum and instruction. The student will develop three research based teaching units based on content appropriate to the grade level of their teaching certificate/endorsements (K-12), and/or a research project or paper as determined by the instructor and approved by the LSSU Department of Education. Prerequisite: admission to the MA-C&I program or approved plan of study, permission of instructor. Co- or Prerequisite: concurrent enrollment or successful completion (B or higher) of an approved 900-level section. Course may be repeated up to three times for credit with permission of the graduate coordinator or Dean, up to once per section number or course title.

EDUC690

Special Topics

1-3

Courses and workshops designed to meet the special needs of K-12 teachers, e.g. workshops approved by the School of Education for graduate credit. The transcript will specify the specific content, e.g. Special Topics (K-4 Mathematics), etc. Approval of the School of Education is required to apply credits earned through special topics courses in the MA C&I program. May be repeated for credit when content varies. Prerequisite: Admission to the MA C&I program or approval of instructor.

EDUC910

Special Topics: [specify course title by section]

1-3

Topical courses in education based on independent or directed study, workshops or other professional development activities. Courses addressing the continuing education requirements of educational professionals (e.g. regular or special educators, instructional assistants, school psychologist, counselors). *Successful completion of this course will award non-matriculated graduate credit which may apply to the renewal of professional certificates/credentials but which does not apply to an LSSU graduate degree. Course number may be repeated when content and course title vary, once per section. Grading: S=satisfactory, equivalent to a B or higher in graduate courses or NC=no credit. Tuition for non-matriculated graduate credit will be established by the Board of Trustees.

EDUC920

Special Topics: [specify course title by section]

2

Topical independent study courses in education delivered in partnership with Virtual Education Software. Courses addressing the continuing education requirements of educational professionals (e.g., regular or special educators, instructional assistants, school psychologist, counselors). This course requires DSL-level or higher internet and access to a computer for course assignments and to participation in online sessions and discussion boards. Sections of this course are based on curriculum developed by Virtual Education Software (VESi) and include additional assignments and group interaction including synchronous and asynchronous communication supervised by LSSU faculty. *Successful completion of this course will award non-matriculated graduate credit which may apply to the renewal of professional certificates/credentials but which does not apply to an LSSU graduate degree except as noted in EDUC635. Specific course titles under this number will be listed on the LSSU education web site, and are available through a cooperative contractual agreement with VESi. Course number may be repeated when and course title vary, once per section Grading: S=satisfactory, equivalent to a B or higher in graduate courses or NC=no credit. Tuition for non-matriculated graduate credit will be established by the Board of Trustees.

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EGEE125

Digital Fundamentals

(3,2) 4

This course provides a study of numbering systems, Boolean algebra, optimization and reduction techniques, combinational logic, sequential digital logic, digital arithmetic, counters, multiplexers, demultiplexers, and microcomputer memory devices. Emphasis is placed on digital circuit design and contemporary programmable logic concepts. Prerequisite: EGNR101 or EGNR103. Pre or Corequisite: MATH111 and MATH131.

EGEE210

Circuit Analysis

(3,3) or (3,3,1) 4

This course is an introduction to the analysis of linear circuits. Topics include: basic circuit elements and their terminal relations, Kirchoff's laws, nodal analysis, mesh analysis, superposition theorem, Thevenin and Norton equivalent circuits, DC transient analysis of RC and RL circuits, phasors, sinusoidal steady-state response of RLC circuits and single-phase and three-phase AC power analysis. Prerequisites: MATH152, EGNR140 and one of the following: EGNR101 or 103.

EGEE250

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: EGEE125 with a C or better grade.

EGEE280

Introduction to Signal Processing

(4,0,0) or (4,0,1) 4

The course introduces mathematical techniques used in the design and analysis of analog and digital signal processing systems. Topics include complex numbers, phasor representation of sinusoids, spectral representations, convolution, frequency response, sampling and reconstruction, Fourier series and Fourier transform, and the use of MATLAB as a signal processing tool. Prerequisites: MATH152 and EGNR140.

EGEE310

Network Analysis

(4,0) 4

A continuation of EGEE210 with an emphasis on the systems approach to circuit analysis and design. Topics include the Laplace transform, transfer functions, frequency response, Fourier series, filter design, and op-amps. Prerequisites: EGEE210, EGEE280. Pre- or corequisite: MATH310.

EGEE320

Digital Design

(3,3) 4

A study of logical and electronic circuit design techniques including combinational and sequential circuits, programmable logic devices, MSI and LSI devices. Synchronous state machine design using computer-based tools is emphasized for control applications. Prerequisite: EGEE125 with a grade of C or better, and either EGNR265 or CSCI121.

EGEE330

Electro-Mechanical Systems

(3,3) 4 or (3,3,1) 4

A study of three-phase circuits, electro-mechanical energy conversion, transformers, AC and DC machines, motor drives, and controlled converters. The laboratory activities include planning and conducting tests of electrical machines, and simulation with physical modeling software. Prerequisite: EGEE210 with a grade of C or better, EGNR140, and MATH152.

EGEE345

Fundamentals of Engineering Electromagnetics

(3,0) 3 or (3,0,1)3

This course provides an in-depth knowledge of the fundamentals of electromagnetic theory. Topics include vector analysis, electrostatic fields and magnetostatic fields, while familiarizing students with the applications of such fields, Maxwell's equations, and an introduction to wave propagation and radiation. Prerequisites: EGEE210 with a grade of C or better, MATH251 and PHYS232. Pre- or corequisite: MATH310.

EGEE355

Microcontroller Systems

(3,3) 4

A study of microcontroller systems design based on the 8/16/32-bit microcontrollers. Assembly and C languages are used for program development in the design of embedded systems. Interfacing techniques, real-time control, and microcontroller emulator use are emphasized. Prerequisites: EGEE250 and one of the following: EGNR265 or CSCI121.

EGEE370

Electronic Devices

(3,3) (3,3,1) 4

This course provides an in-depth study of the basic electronic devices. Topics include diodes, MOS field effect transistors, bipolar junction transistors as well as amplifier concepts such as gain, bandwidth, biasing and frequency response. Diode rectifiers, common amplifier configurations, digital CMOS logic circuits, latches, flip-flops and RAM cells are studied as applications of electronic devices. Prerequisites: EGEE125 with a C or better grade, EGEE210 with a C or better grade, and MATH152.

EGEE411

Power Distribution and Transmission

(3,0) 3

This course provides an introduction to the analysis and design of systems that carry electrical power from the point of generation to the point of use. Topics include mathematics and techniques of power flow analysis, ground-fault analysis, transient stability analysis, analysis of large power system networks, and the use of power system simulation software. Prerequisites: MATH152, EGEE210, and EGEE280.

EGEE425

Digital Signal Processing

(2,2) 3 or (2,2,1)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: EGEE250, and EGEE 280 with a grade of C or better, EGNR140, and either EGNR265 or CSCI121.

EGEE475

Power Electronics

(3,3) 4

This course provides an introduction to electrical power processing. The general topics include various electronic power switching circuits including: AC-DC rectifiers, DC-DC converters and DC-AC inverters. Additional topics include applications of power switching circuits as well as characteristics of power semiconductor devices. Prerequisites: EGEE280, EGEE370, and MATH251.

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EGEM220

Statics

(3,0) or (3,0,1) 3

A study of theory and application of engineering mechanics principles with emphasis on vector analysis, free body diagrams, properties of areas, and problem solving. This emphasis includes applying principles of equilibrium to particles and rigid bodies. Prerequisite: EGNR140. Pre, or Corequisites: MATH152 and PHYS231.

EGEM320

Dynamics

(3,0) or (3,0,1) 3

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. Prerequisites: MATH152 and EGEM220.

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EGET110

Applied Electricity

(3,2) 4

This course covers basic principles of DC and AC electricity. Topics include resistance, inductance, capacitance, series and parallel circuits, magnetic circuits, transformers and electrical motors. Laboratory exercises will reinforce the lecture material. Prerequisite: MATH111 and MATH131 each with a C or better.

EGET175

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: EGET110.

EGET310

Electronic Manufacturing Processes

(3,3) 4

This course will cover traditional and modern techniques for the design, fabrication, and testing of electronic circuit boards. Traditional techniques include wire cutting and stripping and manual and wave soldering. Modern techniques include the routing of multilayer surface mount boards, solder paste stenciling and dispensing, pick-an-place assembly and programming, reflow oven soldering, and rework techniques. Additional topics may include mechanical mounting, assembly line coordination, cell manufacturing, and potting and sealing materials. Prerequisites: either (EGET110 and EGET175) or EGEE210.

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EGME110
Manufacturing Processes
(2,3) 3

An introduction to basic manufacturing processes. Both theory and applications of various processes are covered in lecture and laboratory. Topics include: machining processes, welding and related processes, metal forming processes, and plastic forming processes. Included in machining processes is a limited scope computer aided design and computer numerical control project. The topics of measuring instruments and laboratory safety will also be addressed in the lecture and laboratory. Completion of a high school trigonometry course is expected for enrollment. Co-requisite or Prerequisite: EGME141 and MATH111 (or equivalent/satisfactory score on ACT/SAT, or Placement Exam) or Permission of Instructor.

EGME141
Solid Modeling
(2,2) 3

An application of standard solid modeling software to draw, dimension, and design mechanical parts and assemblies. Topics covered include: standard drafting techniques, orthographic projections, wireframe and solid methods, dimensioning, assemblies, and constraining. An introduction to animation of assemblies is also included. Pre- or Corequisite: MATH102.

EGME225
Mechanics of Materials I
(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: EGME220 with a grade of C or better. Pre- or corequisite: MATH152.

EGME240
Assembly Modeling and GD&T
(2,3) 3

The course is a continuation of EGME141. Parametric modeling and design of assemblies by the use of solid models. Emphasis will be placed on animation of assemblies to display the functionality of assemblies. Prerequisites: EGME110, EGME141, MATH131 and sophomore standing.

EGME275
Engineering Materials
(3,0) 3

A study of the physical structure of engineering materials, including metals, ceramics, polymers, and composites, as well as their properties and applications. Failure modes of materials, such as corrosion, fatigue, plastic deformation, and brittle failure, are also covered. For metal alloys, there is an emphasis on the interpretation of phase diagrams and time-temperature-transformation diagrams. Prerequisite: CHEM115 or (CHEM108 and CHEM109). Pre- or corequisite: EGME225 or EGME225.

EGME276

Strength of Materials Lab

(0,3) 1

Laboratory experiments covering topics in mechanics of materials and engineering materials. Theory from mechanics of materials and engineering materials will be covered through hands-on experiments. (Pre- or corequisites: EGME225 and EGME275) or (Prerequisite EGMT225 and Pre or corequisite EGME275).

EGME310

Vehicle Development & Testing

(1,2) 2

A course providing a systematic overview of topics within the areas of automotive vehicle dynamics, component design, and testing. An introduction to gross vehicle dynamics is followed by a detailed study of specific vehicle subsystems, including both their design and their role in the overall vehicle behavior. Dynamic behaviors covered include acceleration, braking, cornering, ride, and load transfer. Subsystems considered include the brakes, steering system, suspension, tires, and drive train. Vehicle testing and benchmarking is also covered. Laboratory content includes an introduction to a commercial vehicle dynamics software package. Prerequisites: PHYS221 or PHYS231. Pre- or corequisites: EGEM220 or EGMT225.

EGME337

Thermodynamics

(4,0) or (4,0,1) 4

A study of the theory and applications of thermodynamics. Topics covered include: thermodynamic properties, heat, work, first and second Laws of thermodynamics, entropy, power and refrigeration cycles, gas mixtures, and an introduction to transport theory. Prerequisite: MATH152.

EGME338

Fluid Mechanics

(3,0) or (3,0,1) 3

A study of the theory and applications of fluid statics and fluid dynamics. Topics covered include: hydrostatics, buoyancy and stability, Bernoulli and energy equations, dimensional analysis, flow in pipes, pumps, potential flow, open-channel flow, introductory gas dynamics, integral and differential analysis of flow, exact and approximate solutions of the Navier-Stokes equations, and computational fluid dynamics (CFD). Prerequisites: EGEM220, MATH251, MATH310.

EGME350

Machine Design

(3,3) 4

Design and selection of machine components and power transmission units. Selected topics in load, stress, and deflection analysis in more depth than EGME225, notably (but not exclusively) torsion of thin-walled sections, thick-walled pressure vessels, interference fits, buckling problems by eigenvalue analysis, and Castigliano's theorems. Deterministic and stochastic theories of static failure, dynamic loading, and fatigue. Performance analyses of machine components, such as shafts, bearings, gears, worms, fasteners, and belt/chain

drives. Laboratory covers finite element analysis using commercial software, and involves a major group design project. Prerequisites: EGME141, 225, 275, and 276. Pre-or Corequisite: MATH310.

EGME415

Vehicle Dynamics

(2,0) 2

A study of vehicle dynamics, treating selected topics in automobile dynamics with more theoretical depth than EGME410, but also surveying heavy trucks, tracked and off-road vehicles (including terrain interaction), railway vehicles, and water-borne vessels. Dynamic modeling, as well as a thorough understanding of underlying physical phenomena, are emphasized. Prerequisites: EGEM320, EGNR340 and EGME310.

EGME425

Vibrations and Noise Control

(3,2) 4 or (3,2,1) 4

An introductory course on vibrations analysis, noise control, and acoustics. The vibrations portion includes the theory of discrete and continuous vibrating systems, and such applications as vibration mitigation, machinery vibrations, and rotor dynamics. The noise control/acoustics portion includes the theory of airborne sound, sound fields in bounded spaces, an overview of human hearing, and noise mitigation. Measurement techniques and signal analysis are covered in the laboratory segment. Prerequisites: EGME225, EGEM320, EGNR340, MATH251 and 310.

EGME431

Heat Transfer

(3,0) (3,0,1) 3

Theory and applications of heat transfer. Steady-state and transient conduction, forced convection, natural convection, radiation. Analysis of heat exchangers, boiling and condensation, introduction to numerical methods in heat transfer. Prerequisites: EGME337, EGME338 and (EGNR265 or EGNR140).

EGME432

Thermal and Fluids Lab

(1,3) 2

Practical applications of thermodynamics, fluid mechanics, and heat transfer. Hands-on training in the operation of thermodynamic components, power generation systems, and fluid mechanical devices. Experimentation in heat transfer. Includes major project in the area of power generation and dissipation. Prerequisites: EGME337 and EGME338. Pre- or corequisite: EGME431.

EGME442

Finite Element Analysis

(2,2) 3

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. Prerequisites: EGME350 and MATH310.

EGMF110
Introduction to Machining I
(2,6) 4

Students will receive instructions on shop safety, blueprint reading, measuring instruments, layout principles, and basic bench work. They will also receive instructions on grinding, lathes, drill presses, saws, and basic milling. Some metallurgical concepts are introduced. The course will make use of the Machinery's Handbook and apply the principles, concepts, and data in the handbook to industrially related projects. Information from the handbook will be used to ensure proper set-up and operation of the machinery. Students will spend several hours each week setting up, working, and familiarizing themselves with the machines.

EGMF130
Introduction to Machining II
(2,6) 4

This course builds up upon the material presented in EGMF110. Students will receive additional instruction on shop safety and measuring techniques relative to the machinery introduced in this course. Additional topics on vertical and horizontal milling machines, surface grinders, metallurgy, and blueprint reading are covered. The Machinery's Handbook will continue to be used in conjunction with the machines utilized in this course. Students will spend several hours each week setting up, working, and familiarizing themselves with the machines. Prerequisite: EGMF110.

EGMF210
Advanced Machining
(2,6) 4

In this course, students will write CNC programs in machine codes, and then setup and run CNC machines 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. Students will be able to describe the sequence and operations for a part program, determine the tools required for machining, calculate speeds and feeds, set-up tooling on CNC machines, develop CNC programs using standardized formats, and use CAM software to produce three dimensional parts. Prerequisites: EGMF110 or EGME110, and MATH102. Pre- or corequisite: EGMF130.

EGMT142
An Overview of Solid Modeling Techniques
(1,2) 2

This course will cover an application of solid modeling software techniques to create parts and assemblies. Topics covered include creating sketches; creating parts with extrude, revolve, blend, and sweep; creating part features with round,

chamfer, pattern, mirror; use of the part history tree; dimensioning of parts; building of assemblies; creation of parts from 2D drawings; creating 2D drawings from solid models of parts and assemblies; and an introduction to animation of assemblies. Prerequisites: Previous CAD course and permission or instructor.

EGMT216

CAM with CNC Applications

(2,3) 3

Writing CNC programs in machine codes, and the setup and trial runs to produce parts from these programs. Simulation of CNC machining processes to predict tool paths and cycle times. Computer-aided manufacturing (CAM) topics and applications of CAM software will also be covered. Prerequisites: EGME110, EGME141, MATH131.

EGMT225

Statics and Strength of Materials

(4,0) 4

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: MATH111 and MATH131 each with a C or better and PHYS221.

EGMT332

Thermodynamics and Heat Transfer for Technologists

(4,0) 4

This course provides an algebra-based coverage of topics in thermodynamics and heat transfer relevant to technologists in manufacturing and fire science. Thermodynamics topics include properties of substances, energy balances, combustion and thermochemistry, and heating and ventilation systems. Basic principles of conduction, convection, and radiation, and their application to practical problems are covered in the heat transfer portion of the course. Prerequisite: MATH111 or 140.

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EGNR101

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: MATH102.

EGNR102

Concepts and History of Engineering

(2,0) 2

This course provides instruction on problem-solving techniques using engineering tools and concepts as students work on an engineering design project. Topics in

engineering ethics and the engineering work experience are discussed. A history of engineering and the development of the specific engineering fields are presented. Pre- or corequisite: MATH102.

EGNR103

Engineering Orientation

(0.5,1) 1

This course provides an orientation to the engineering and engineering technology fields at Lake Superior State University, including robotics. Students are introduced to the engineering professional organizations and are encouraged to participate in professional activities. Laboratory exercises focus on introducing students to the engineering facilities and programmatic options within the engineering and engineering technology disciplines. Academic success strategies are also presented. Pre- or co-requisite: MATH102.

EGNR140

Linear Algebra and Numerical Applications for Engineers

(1,3) 2

This course covers the engineering application of concepts from applied mathematics, iterative programming and computational software packages. Applications of linear algebra are introduced. Iterative programming emphasizes loops, conditional statements and user input-output. The lab also includes instruction on commercially-available software used to perform computational tasks of applied interest. Prerequisite: MATH131. Pre- or Co-requisites: MATH112 or MATH151.

EGNR245

Calculus Applications for Technology

(2,2) 3

This course covers engineering applications of differential and integral calculus, including areas, volumes of solids, vector analysis, matrix algebra, polar and cylindrical coordinate systems, partial differentiation, and multiple integrals for typical engineering technology problems. Application and solutions to engineering problems will emphasize and require the use of commercial software packages such as MathCAD and MATLAB. Prerequisite: EGNR140.

EGNR250

Cooperative Education

-2 2

A practicum in which students work in a supervised engineering capacity (on site) with industry. The student is expected to work at least 6 hours per week in an industrial setting. The student's experience must be related to his/her academic studies and thus this experience contributes significantly to his/her professional development. May be repeated for a maximum of 4 credits. Prerequisite: Permission of Instructor.

EGNR260

Engineering Research Methods

(1,3) 2

This is an introductory course covering research methods in engineering and engineering-related fields. The student will be involved in faculty-supervised and

guided research activities such as assisting with developing experiments, gathering data and analyzing results. Much time will be spent learning about the research project, past experiments and future directions. Can be repeated for credit. Prerequisite: permission of instructor.

EGNR261

Energy Systems and Sustainability

(3,0) 3

The course provides an introduction to energy conversion systems and discusses issues related to the sustainability of each system. Topics include basic energy definitions, traditional energy resources and reasons for pursuing alternative energy resources, renewable and nonrenewable energy resources, energy storage, and electrical grid integration. Topics also include policy as well as social, economic, and environmental sustainability issues as they relate to energy conversion. Prerequisite: MATH102 or equivalent.

EGNR265

C Programming

(3,0) or (3,0,1) 3

An introductory course in C programming with an emphasis on structured programming techniques and on utilizing C to solve engineering-related problems. Topics include looping techniques, input and output to files, conditional flow of control, writing and utilizing functions, pointers, 1D and 2D arrays, and data storage. Prerequisites: MATH111 and MATH131 and sophomore standing.

EGNR310

Quality Engineering

(3,0) 3

Provides a coverage of classical and modern methods of quality control and quality engineering. Topics include quality control principles and terminology, classical qualitative and quantitative quality control methods, including statistical process control procedures, robust design methods as applied to product design and design of experiments, and an overview of quality management systems used in industry. Pre- or Corequisites: MATH207 or MATH308.

EGNR340

Numerical Methods for Engineers

(0,2) 1

This course addresses numerical methods for the solution of problems in linear algebra, numerical integration, root searching, linear and non-linear regression, ordinary and partial differential equations, and eigenvalue analysis. It emphasizes proficiency in independently programming algorithms for the simulation of physical systems with engineering applications, an understanding of how these algorithms work and are structured, and an appreciation for the value of computational efficiency in numerical methods. Prerequisites: EGNR140. Pre-or Corequisites: MATH310 and (CSCI121 or EGNR265).

EGNR346

Probability and Statistics Laboratory for Engineers

(0,2) 1

This laboratory accompanies MATH308, a calculus-based introduction to the basic

theory of probability and statistics. Topics include methods of data collection, experimental design, interpretation of data and use of a statistical software tool. Prerequisite: EGNR140. Pre- or corequisite: MATH308.

EGNR361

Energy Systems and Sustainability Lab

(0,3) 1

The course explores the technical and implementation aspects of sustainable energy systems. Students will design, construct, and/or analyze various energy conversion systems. They will also design and implement subsystems that can store energy and construct connections between energy sources, energy storage subsystems, and the electrical grid. Prerequisites: (CHEM108 or CHEM115), (EGET110 or EGEE210), MATH131 or higher, excluding MATH207, (PHYS221 or PHYS231); Pre/Corequisite: EGNR261.

EGNR362

Vehicle Energy Systems

(2,3) 3

An introduction to vehicle power train energy systems and both battery and fuel cell electric/hybrid systems. Other topics include vehicle drive profile calculations, torque and speed coupling, and safety considerations. Vehicle topics also include cars, trucks, and off-road hybrid systems. Laboratory activities include CAN and other communication and information systems, and vehicle performance analysis and simulations using Excel, Simulink, and CANoe. Lab activities include using the chassis vehicle dynamometer with external instrumentation, CAN and OBD-based data acquisition. Prerequisites: (PHYS221 or PHYS231), (EGEE210 or EGET110) and pre/corequisite: (EGNR265 or CSCI121).

EGNR450

Cooperative Education Project I

-4 4

A practicum in which students work in a supervised engineering capacity (on site) with industry. This is the first of a two-part sequence that can replace the senior year Engineering Design Project II (EGNR495). The focus of this course is the development of the co-op project proposal and the initiation work on the co-op project. The expectation is that at least 60% of a forty hour work week is devoted to completing the project. Prerequisite: EGNR250 Cooperative Education.

EGNR451

Cooperative Education Project II

-3 3

A practicum in which students work in a supervised engineering capacity (on site) with industry. This is the second of a two-part sequence that can replace the senior year Engineering Design Project II (EGNR495). The focus of this course is the completion of the co-op project. The documentation at the completion of the project includes an update presentation and a final report/final presentation. The expectation is that at least 60% of a forty hour work week is devoted to completing the project. Prerequisite: EGNR450 Cooperative Education.

EGNR460

Engineering Research Project I

(2,6) 4

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students will acquire the skills listed under EGNR491 and develop a research plan for some portion of a project. The plan will be implemented in EGNR461. Specifically, the students will work to develop a proposal of the expected research goals and create a project timeline and budget. The student's faculty advisor and the director of the Lab for Undergraduate Research in Engineering (LURE) must approve the plan. Prerequisites: senior status, EGNR260 and permission of instructor. Students who plan to take EGNR461 must complete both EGNR460 and EGNR461 in the same academic year.

EGNR461

Engineering Research Project II

(1,3) 2

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students implement their research plan developed in EGNR460 and lead research efforts. Results and finding must be reported in oral and/or written forms to appropriate constituencies outside the LSSU audience. Prerequisites: EGNR460 and permission of instructor. The dropping or failing of EGNR461 will result in the student having to repeat both EGNR460 and 461.

EGNR490

Special Topics in Engineering: (Topic)

(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.

EGNR491

Engineering Design Project I

(2,3) 3

This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, ethics, timelines, resource allocation, project management and performance evaluations. Skills in oral and written communications, problem conceptualization, creative problem solving and technical presentations are developed. Prerequisites: Permission of instructor on the basis of senior status and expected graduation on or before December of the following calendar year, and one of the following: EGEE320 or EGEE370 or EGME350 or (EGRS365 and EGMT310). Students who plan to take EGNR491 and EGNR495 must complete both in the same academic year.

EGNR495

Engineering Design Project II

(1,6) 3

A continuation of EGNR491. This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, engineering economics, 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: EGNR491. The dropping or failing of EGNR495 will result in the student having to repeat both EGNR491 and 495.

EGNR496

Senior Directed Project

(1,6) 3

This course is designed to allow industrial technology majors the opportunity to implement a project while working collaboratively with engineering and engineering technology students. Students will be expected to use the skills and knowledge from previous course work. Project outcomes should relate to the student's individual areas of study and represent a synthesis of the previous learning under the supervision of a faculty member. Prerequisites: Approval of the department chair, senior status, and expected graduation on or before December of the following calendar year.

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EGRS215

Introduction to Robotics

(1,2) 2

An introduction and orientation to the field of robotics. Challenges in robotics manufacturing, design and structure of robotic systems, classification of robots, robot geometry, power sources, robotic control systems are covered in this course. The lab part of the course will provide an overview of robotics applications in industry through videos and hands-on experiences. Applied laboratory topics will cover basic programming concepts, structures, and applications using industrial robots. Prerequisites: MATH102 or equivalent.

EGRS365

Programmable Logic Controllers

(2,3) 3

An introduction to programmable logic controllers (PLC) with an emphasis on programming of the controller and operator interface. Standard PLC devices (bits, timers, counters etc.) and controller functions dealing with math, compare, moves, program flow, analog input, and high-speed counters will be covered in the course. Written and oral business communications are an integral part of the course. Co or prerequisites: EGNR265 or EGEE125 or CSCI121 and sophomore status.

EGRS366

Programmable Logic Controllers

(2,2) 3

An introduction to the use of programmable logic controllers (PLC). Basic components of the PLC along with the interface to hydraulic/pneumatic systems and sensors will be discussed. Some higher-level functions such as zone control, master control and sequencers will also be covered. This course will only be offered at the regional sites. It is not a communication-intensive course. Prerequisite: electrical fundamentals course.

EGRS372

Mobile Robotics

(3,3) 4

An introduction to mobile robotics. Students will learn to integrate sensor data in order to control mobile robots to perform useful tasks in both known and unknown environments. Applications could include drones, autonomous vehicles, underwater robots, and warehouse robots. Students will also learn about current trends and areas of research within the field of mobile and service robotics. Prerequisites: MATH151 or MATH112, EGNR265 or CSCI121 with a grade of C or better, and EGRS215. This course cannot be repeated for credit.

EGRS380

Robotics Technology

(2,0) 2

This course will cover topics relative to robotics and robotics systems. Two- and three-dimensional kinematics, end effectors, active and passive collision systems, sensors, feedback devices, robotic safety, and principles of operation of applicable hardware will be studied. Prerequisites: MATH111 and MATH131 with grade of C or better, and PHYS221.

EGRS381

Robotics Technology Lab

(0,3) 1

Laboratory exercises will provide hands-on examples in the use of industrial robots. Focus will be on learning a structured robotics programming language. Applications and projects will simulate industrial situations as well as emphasize system integration. Prerequisites: EGNR265. Corequisite: EGRS380.

EGRS382

Introduction to Robotics Programming

(0,3) 1

The laboratory work will provide an introduction to the use and application of an industrial robot. Programming concepts and structures in the V+ programming language as used in Adept and Staubli robots will be studied. Industry-like applications and system integration projects will be assigned. Prerequisite: EGRS380.

EGRS385

Robotics Engineering

(3,3) 4

An introduction to the field of robotics engineering. Topics include classification of robotic manipulators, accuracy and repeatability, wrists and end-effectors, actuators and sensors, homogeneous transformations, Denavit-Hartenberg convention, forward kinematics, inverse kinematics, trajectory planning and an introduction to velocity kinematics. Laboratory exercises will focus on the operation and programming of industrial robots and robotics simulation using industry standard software. Prerequisites: EGNR265 or CSCI105, and MATH251.

EGRS430

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: MATH152 or EGNR245, EGNR140, EGRS381 or EGRS385, and EGNR265 or CSCI121.

EGRS435

Automated Manufacturing Systems

(2,3) 3

A study and analysis of the components of an automated manufacturing system. Topics include analysis of flow lines, automated assembly systems, MRP, materials requirement planning, production economics and CIM. Course work will include applications of manufacturing systems software including factory simulation. Laboratory work will focus on systems integration, advanced programming of industrial robots, and flow line automation. Prerequisites: EGRS385.

EGRS460

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: MATH310, EGEM220 and EGEE210. Pre- or co-requisite: EGNR340.

EGRS461

Design of Control Systems

(3,3) 4

This course builds upon the fundamental control system theory covered in EGRS460 and introduces various control system design techniques. General topics include Bode and root locus design techniques, controllability and observability, optimal control, state space design. Several classical design techniques such as phase-lead, phase-lag, deadbeat, pole placement and PID design are covered. Prerequisite: EGRS460.

EGRS480

Manufacturing Automation

(3,0) 3

Study of the mathematical modeling of production concepts, analysis of automated flow lines, automated assembly systems, production economics, automated guided vehicles and materials requirement planning. Prerequisites: EGRS380, EGRS381 or EGRS382, and MATH112 or MATH151 with a grade of C or better.

EGRS481

Manufacturing Automation Lab

(0,3) 1

The first part of the laboratory work will focus on programming Fanuc robots

using the Karel programming language. Industry-like applications and system integration projects will be assigned. The second part of the lab work will include the application of WITNESS discrete-event simulation software package to study and analyze manufacturing systems. Prerequisites: EGNR265 or CSCI121 either with a grade of C or better. Pre or co-requisite: EGRS480.

EGRS482

Automation and Simulation Lab

(0,3) 1

Laboratory work in automation will focus on programming Fanuc robots using the Karel programming language. Industry-like applications and system integration projects will be assigned. Lab work in simulation will include the introduction to a discrete-event manufacturing simulation software package. Several manufacturing systems will be modeled, verified, validated and optimized using the simulation software package. Prerequisite: EGRS480.

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EMED181

First Aid

(0.5,1.5) 1

Basic course in first aid. Theoretical and practical experience in university laboratory.

EMED188

Wilderness First Responder

(1,3) 2

The student will learn concepts and hands-on strategies to respond to medical emergencies in a remote setting of at least 1 hour from professional medical care. Students who successfully complete the course will receive a WFR certificate. There are no prerequisites or co-requisites. This course may not be repeated for credit. Course may be taught in non-traditional scheduling format.

EMED189

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.

EMED190

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.

EMED191

Prehospital Emergency Care and Crisis Intervention II

(2,6) 4

Simulated practice with some in-hospital observation. Emphasis on laboratory practice of skills needed for functions of an EMT-A. Prerequisite: EMED190.

EMED211

Emergency Pharmacology I

(2,0) 2

Introduction to emergency pharmacology including sources of drugs, drug laws and regulation, routes of administration, pharmacokinetics and pharmacodynamics, dosage calculations and the metric system. Emphasis will be placed on drugs used in the management of cardiovascular emergencies. Prerequisite: math competency or MATH103, and corequisite EMED251.

EMED212

Emergency Pharmacology II

(2,0) 2

Continuation of HLTH211 with an overview of emergency drugs frequently used in the prehospital management of respiratory, endocrine, toxicological, obstetrical and other prehospital emergencies. Administration procedures and dosages for adult and pediatric patients will be covered. Prerequisite: EMED211 with a B- or above.

EMED251

Advanced Emergency Care I

(4,0) 4

Study of prehospital emergencies geared toward rapid intervention and patient stabilization. Introduction to the pre-hospital environment and preparatory information will be covered including medical-legal issues, airway management, parenteral therapy and comprehensive patient assessment. Management of traumatic injury and multiple casualty incidents will be addressed. Prerequisite: admission to Paramedic Technology Program.

EMED252

Advanced Emergency Care II

(4,0) 4

Continuation of EMED251 addressing treatment modalities for environmental, medical, obstetrical and behavioral emergencies in the adult and pediatric patient. Prerequisite: EMED251 with a B- or above.

EMED261

Emergency Cardiology I

(2,0) 2

Introduction to basic cardiac monitoring and dysrhythmia recognition. Review of the anatomy and physiology of the cardiovascular system, principles of electrophysiology, EKG interpretation and dysrhythmia management will be

covered. Sinoatrial, junctional and atrial dysrhythmias will be addressed.
Corequisite: EMED251.

EMED262

Emergency Cardiology II

(2,0) 2

Continuation of EMED261 with emphasis directed at identification and management of life-threatening dysrhythmias including ventricular dysrhythmias and heart blocks. Coronary artery disease, myocardial infarction and other cardiovascular emergencies will be addressed, and the course will conclude with ACLS certification. Prerequisite: EMED261 with a B- or above.

EMED271

Care of Special Populations

(2,0) 2

This course will prepare the Emergency Paramedic to effectively assess and manage special patient populations in the emergency setting. Course content will include differentiation between the normal adult and special patient populations, including assessment of the neonatal and pediatric patient and management of common medical and traumatic conditions experienced by the pediatric patient. Special emphasis will be placed on patient care needs and decision-making strategies unique to special patient populations, including resuscitation skills. Prerequisites: EMED211, EMED251, EMED261, EMED284, EMED286, EMED297.

EMED284

Advanced Skills and Situations I

(1,6) 3

Advanced skills and procedures discussed in Advanced Emergency Care will be demonstrated and practiced in a laboratory setting. Skills covered will include advanced airway management, parenteral therapy, cardiac monitoring and advanced patient assessment. Simulated patient scenarios will be designed to allow the student to practice these advanced skills in a realistic patient setting. Emphasis will be placed upon strengthening new skills and providing critical thinking opportunities which allow for the integration of theory with practical applications. Prerequisite: admission to the Paramedic Technology Program and corequisite EMED251.

EMED285

Advanced Skills and Situations II

(1,6) 3

Continuation of HLTH284 with an emphasis placed on ACLS and PALS procedures and algorithms. Instructor and peer evaluation will enhance learning, and working in groups will promote the concepts of teamwork and individual leadership. Prerequisite: EMED284 with a B- or above. Corequisite: EMED252.

EMED286

Paramedic Operations

(1,3) 2

This course will prepare the Emergency Paramedic to effectively handle unique situations which may be encountered in the prehospital setting that require highly specialized training. Program material will include managing multiple

casualty situations, Medical Incident Command, hazardous materials incidents, rescue awareness and operations and crime scene awareness. Special emphasis will be placed on rescuer safety. Practical skills will include vehicular entry and disentanglement, and basic rescue operations.

EMED297

Paramedic Clinical I

(0,12) 2

Clinical rotations in the hospital emergency department, surgical suite, outpatient surgery and with local EMS agencies designed to provide the student with hands-on practical experience of patient care. Corequisite: EMED251 and permission of the instructor.

EMED298

Paramedic Clinical II

(0,12) 2

Clinical rotations in the hospital emergency department, intensive care unit, obstetrical unit, pediatrics unit and local EMS agencies will provide the student with a continuation of clinical exposure. Additional clinical experience in other areas may be included as the opportunity permits. Prerequisite: EMED297 with a B- or above and concurrent with EMED252.

EMED301

National Registry Certification Preparation

(2,0) 2

This course is designed to prepare the Paramedic Student to challenge the National Registry Paramedic Certification Examination upon completion of the didactic, practical and clinical components of the Paramedic Technology Program. It will provide the student with an opportunity to thoroughly review key information in the 8 modules of the National Standard Paramedic Curriculum. Emphasis will also be placed on improving the student's test-taking skills.

EMED302

Paramedic Field Internship

(0,21) 4

Upon completion of the didactic, practical and clinical components of the Paramedic Technology Program, the student in this field internship will be provided with the opportunity to synthesize and apply acquired knowledge, values and skills necessary for the practice of an Emergency Paramedic to real life scenarios in the pre-hospital setting. This internship will also provide the student with an opportunity to critically analyze the thoroughness and effectiveness of care provided, while developing and implementing team leadership skills and critical thinking skills that foster the ability to provide safe and efficient patient care. Prerequisite: Completion of all general education credits and EMED core curriculum courses; Co-requisite EMED301.

EMED490

Independent Study for Emergency Medicine

(1-3,0) 1-3

This may take the form of either a research project or a program of directed reading on a specific subject. One to three 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. Prerequisites: Permission of Instructor.

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ENGL105

Writing Workshop

(2,0) 2

Students in this workshop, which is paired with ENGL110, First-Year Composition I, will learn to improve their self-confidence as writers, control surface features of language, and independently apply the writing process, with emphasis on development, revision, editing for clarity and meaning, and proofreading final products. Co-requisite: ENGL110.

ENGL110

First-Year Composition I

(3,0) 3

ENGL110 provides students with an introduction to the discipline of writing through an exploration of their own writing processes and products. Emphasis is placed on students learning to think critically about their own writing in order to address issues of coherence, grammar, mechanics, organization, clarity and content. Other material covered includes the role of literacy in society, the ways in which readers engage text, and the role of writing at the college level.

ENGL111

First-Year Composition II

(3,0) 3

First-Year Composition II prepares students for the complex demands of academic literacy and research. These require students to be able to critically observe personal and public knowledge; ask questions of reading and research; formulate hypotheses; design and conduct research projects, both in the library and in the field; and identify further avenues of inquiry. To help students develop these abilities, the course also teaches students the basic skills of analysis, interpretation, critical thinking and documentation. Required course work includes completion of an extended research project. Prerequisite: a grade of C or higher in ENGL110.

ENGL180

Introduction to Literary Studies

(3,0) 3

This course introduces students to the theory and methodology of literary study, focusing on three questions: What is a literary text? How do we read a literary text? How do we write about a literary text? Addressing these questions requires students to examine the social and cultural contexts of literature and its aesthetic, rhetorical and ideological aspects. These considerations will help students judge literary value and examine their own literary assumptions. Requires one research project and critical essays using MLA style. Prerequisite: ENGL110.

ENGL221

Introduction to Creative Writing

(3,0) 3

Through writing and discussion, students will study and practice introductory elements of drama, fiction, nonfiction, and poetry. Co-requisite ENGL110.

ENGL222

English Grammar & Language in Context

(3,0) 3

This course requires students to master the vocabulary and principles of standard English grammar related to sentence structure and the production of meaning. Students will also analyze and evaluate prescriptive and descriptive conventions of usage, the history and cultural influences of the English language, and its regional and social variations. Prerequisites: A grade of C or higher in ENGL110 and ENGL111.

ENGL223

Creative Writing II

(3,0) 3

Through writing and discussion, students will study and practice intermediate elements of fiction and poetry. Prerequisite: ENGL221.

ENGL231

American Literature I

(3,0) 3

This course is a chronological study of American literature from the colonial writers through the Romantic period, ending with the Civil War. Prerequisite: ENGL180.

ENGL232

American Literature II

(3,0) 3

This course is 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: ENGL180.

ENGL233

English Literature I

(3,0) 3

Students will read and discuss selected works from the Old English period to the beginning of the eighteenth century. Emphasis will be placed on major writers and works, evaluated in their historical context. Prerequisite: ENGL180.

ENGL234

English Literature II

(3,0) 3

Students will read and discuss selected works from the eighteenth century to the twentieth century. Emphasis will be placed on major writers and works,

evaluated in their historical context. Prerequisite: ENGL180.

ENGL235

Survey of Native Literature of North America

(3,0) 3

Students will examine various types of Native American literatures, including traditional stories, non-fiction, fiction and poetry from authors of numerous different nations. A variety of themes, including Native American identity and the role of culture in literature, will be covered. Corequisite: ENGL111 (also listed as NATV235).

ENGL236

Literature and Culture

(3,0) 3

Students will examine English-language texts from a variety of cultures, including American minorities and other underrepresented cultures. Students will observe the way in which culture is presented in the texts and how culture can help to shape the texts. Corequisite: ENGL111.

ENGL301

Creative Prose Writing

(3,0) 3

This course is a seminar and workshop for the study and practice of prose fiction, creative non-fiction, and other prose forms. Students will complete a final portfolio. Prerequisite: ENGL223.

ENGL302

Poetry Writing

(3,0) 3

This course is a seminar and workshop for the study and practice of poetry and its various forms. Students will complete a final portfolio. Prerequisite: ENGL223.

ENGL303

Performance Writing

(3,0) 3

This course is a seminar and workshop for the study and practice of writing for performance, which may include plays, film scripts, and other performance genres. Students will complete a final portfolio. Prerequisite: ENGL223.

ENGL306

Technical Writing

(3,0) 3

Technical writing is designed to introduce students to the theory and practice of technical communication. This course incorporates a broad approach, addressing the issues of critical thinking, collaboration, ethics, and the persuasive presentation of technical information in both written documents and oral presentations. The specific documents that will be covered include memos, formal business letters, technical descriptions, short and analytic reports, proposals and formal oral presentations. The central focus of the course will be the completion

of a discipline-specific final project, in which the technical communication skills learned during the course will be enhanced. A major goal of this project, and the class, is to introduce students to the demands of their chosen professions, and thereby prepare them for the kinds of disciplined intellectual and practical work they will be required to complete. Prerequisite: ENGL111.

ENGL320

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.

ENGL335

Children's Literature

(3,0) 3

This course focuses on understanding the historical, cultural, and generic dimensions of children's literature, with emphasis on critical reading, literary analysis, and the selection and evaluation of texts for children and young adults. Pre- corequisites: ENGL111 or COMM101.

ENGL336

Young Adult Literature and Culture

(3,0) 3

This course focuses on understanding the historical, cultural, and generic dimensions of young adult literature, with emphasis on critical reading, literary analysis, and selection and evaluation of culturally diverse texts for children and young adults. Prerequisite: ENGL180.

ENGL345

Studies in Classic Texts

(3,0) 3

Readings in literature, beyond North American traditions, that have possessed profound influence or reach throughout history, including theoretical and critical approaches to these texts, examining form, theme, and genre. Includes classic Greek drama, classic British literature from the Anglo-Saxon period through the twentieth century, Shakespeare, mythology, folklore, and world literature in translation. Prerequisites: ENGL111, ENGL180.

ENGL380

History of Literary Criticism

(3,0) 3

An investigation of the history of critical theory to include classicism, neoclassicism, romanticism, the New Critics and contemporary critical trends. This course prepares students for advanced studies in literature. Prerequisite: Either ENGL233 and ENGL234 or ENGL231 and ENGL232.

ENGL398

Community Workshop Internship

3 3

This is an internship designed to provide students with an opportunity to earn credit while obtaining meaningful work experience leading a creative writing community workshop. 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 6 credits total. Prerequisite: ENGL223, a 2.50 gpa in the major, and permission of the instructor.

ENGL399

Publishing Internship

(1-2) 1-2

This course is designed to provide students with an opportunity to earn credit while obtaining meaningful work experience in English or publishing 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 up to four times at 1-2 credit hours for a maximum of 3 credit hours with each LSSU publication, up to 6 credits total. Prerequisite: 2.5 GPA in major and permission of the instructor.

ENGL409

Advanced Writing Workshop

(3,0) 3

This course is a workshop for advanced level writing in a variety of genres, with an emphasis on students doing sustained work in a chosen genre. Students will complete a final portfolio and projects relating to the writing life and publishing world. Prerequisites: Two courses from: ENGL301, ENGL302, or ENGL303.

ENGL435

Studies in Visual Texts

(3,0) 3

Theoretical and critical approaches to visual texts, with the focus on graphic novels and film, examining form, theme, and genre and the production and interpretation of meaning in visual media. Prerequisites: ENGL111, ENGL180.

ENGL440

Advanced Studies in British Literature

(3,0) 3

Examination, implementing rigorous research and critical methods, of a notable period, genre, aesthetics, or movement in British literature. Prerequisite: ENGL380.

ENGL442

Advanced Studies in American Literature

(3,0) 3

Examination, implementing rigorous research and critical methods, of a notable period, genre, aesthetics, or movement in American literature. Prerequisite: ENGL380.

ENGL450

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.

ENGL470

Language Arts Senior Thesis

(3,0) 3

Students engage in sustained exploration of an English Language arts topic, such as literacy education, writing pedagogy, or children's literature, complete an independent research project under the direction of the instructor, and develop it into a major paper. Prerequisite: Language Arts Major, Senior Standing.

ENGL480

Creative Writing Portfolio I

(3,0) 3

This is the first in a series of two capstone courses. Working with an English faculty member on an independent study basis, the student will create a proposal for a unified collection of creative work of literary merit in a chosen genre. Upon approval of the proposal, the student will make significant progress toward completion of the creative work. Prerequisites: Creative writing major, senior standing, and ENGL409.

ENGL482

Creative Writing Portfolio II

(3,0) 3

This is the second in a series of two capstone courses. Working with an English faculty member on an independent study basis, the student will complete a unified collection of creative work of literary merit in a chosen genre. Prerequisites: ENGL480.

ENGL490

Senior Thesis I

(2,0) 2

In consultation with an English faculty member, students will gather research and produce a bibliography and research proposal, as well as begin writing the thesis. This course is an independent study. Prerequisites: Literature or English Education major, senior standing, and ENGL380 or EDUC415.

ENGL499

Senior Thesis

(2,0) 2

Completion of the thesis with focus on revising and editing of the final project. This course is an independent study. Prerequisite: ENGL490.

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EVRN131

Introduction to GIS and GPS

(2,3) 3

This course develops foundational knowledge and skills in (1) cartography (the science and art of map making); (2) remote sensing; (3) geographic information systems (GIS) and the many application of GIS in diverse professional and academic fields; and (4) the theory and operation of GPS receivers and data integration with GIS. Prerequisites: none.

EVRN211

Field Data Methods

(0,2) 1

A field intensive course including hands-on projects to delineate spatial boundaries based geographic, topographic, and/or ecological constructs (e.g. wetlands) to support decision-making with regards to conservation, mitigation, land use, or restoration. Prerequisites: BIOL132 and EVRN131.

EVRN225

Intermediate GIS

(2,3) 3

This course includes design, implementation, and use of geographic information systems (GIS) for a variety of practical applications and research topics. Emphasis will be on geodatabases, georeferencing, geocoding, and geoprocessing, as well as providing an introduction to advanced topics using ESRI's suite of geospatial applications. Prerequisite: EVRN131.

EVRN290

Independent Study in Environmental Science

(1-4,0) 1-4

Special studies and/or research in environmental science for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no I (incomplete) grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources.

EVRN311

Environmental Law

(3,0) 3 Alternate Years

Study of the fundamental concepts of environmental law and ethics. Course includes a survey of the field of environmental ethics and a discussion of ethical issues, a review of the basic legal systems and research techniques, state and federal environmental statutes and codes of conduct for environmental professionals. Extensive use of case studies related to application of environmental law are used to illustrate ethical dilemmas and the approaches for resolving them. Prerequisite: junior standing.

EVRN315

Human Impacts on the Environment

(3,3) 4

A study of human impacts on the environment, with an emphasis on global sustainability issues including impact from technology, population growth, agricultural and land use, climate change, chemical use and pollution, and energy systems. The laboratory will focus on developing skills in modeling, site assessment, and resource management. Prerequisite: NSCI103, ENGL111, and one semester of college chemistry.

EVRN317

Environmental Health Applications

(3,3) 4

A systems approach addressing the factors that contribute to illness, injury, or death, and that affect the health status of individuals and populations. Topics include: environments within buildings, food sanitation, recreation facilities, personal services, and community noise and control. The laboratory emphasizes methods of measuring and evaluating environmental health risks as well as field experience. Prerequisite: One semester of chemistry and NSCI103 or permission of instructor.

EVRN325

Geospatial Analysis

(2,3) 3

This course utilizes visualization of spatial data with GIS-based methods to analyze the data's distribution in space and/or time. Key topics will include the properties and quality of spatial data from land based and remote sensing sources, and the conceptual framework of spatial analysis. Project-centric lab exercises will include a variety of geospatial application such as the analysis of land use/land cover change, digital elevation model (DEM) analysis for terrain, watershed and flow, spatial interpolation, site suitability analysis, and spatial modeling through public and/or private sector applications. Prerequisite: EVRN225.

EVRN341

Fate and Transport in the Environment

(3,3) 4

A study of the fate and transport of chemicals in the hydrosphere, atmosphere, lithosphere, and biosphere, and the modern analytical techniques utilized by environmental chemists. The laboratory component is project based and will utilize modern analytical instrumentation and modeling approaches. Prerequisite: CHEM116.

EVRN355

GIS Programming and Applications

(3,3) 4 Alternate Years

Spatial models and Python scripts are used to extend the functionality of GIS, and to automate and document spatial analysis and data management processes. Core topics include creating and running models in a GIS environment, converting and modifying model scripts, and developing Python scripts to process, map and analyze spatial data. Prerequisites: EVRN225 and CSC1105 or by permission of instructor.

EVRN365

Applied Geospatial Technologies

(3,3) 4 Alternate Years

This course focuses on contemporary and emerging trends in field-based geospatial technologies such as using unmanned aerial vehicles (e.g. drones), land survey equipment and advanced GPS for data collection. Course content will evolve to reflect the current state of technologies in geospatial data acquisition, processing, and delivery. Prerequisite: EVRN225.

EVRN389

Environmental Research Methods

(1,5) 3

A variety of sampling techniques and laboratory methods are introduced as they relate to the environmental sciences. These methods include sampling, preservation, and analysis of biotic (plankton, fish, benthic invertebrates, DNA, pathogens) and abiotic (water quality, sediments, soil, climate) data. Topics include representative sampling, trace inorganic and organic methods, calibration, selection of analytical methods, QA/QC, data analysis, and cost comparison. This course requires travel over spring break. Prerequisites: CHEM108 and CHEM109 or CHEM116; either NSCI103, NSCI116, NRES286 or NRES345; and either MATH207, BUSN211 or BIOL280.

EVRN399

Internship in the Environmental Sciences

(1-4) 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. Work hours and activities must be documented daily and approved by both the on-site supervisor and the instructor to receive credit. The course may be repeated for a maximum of four credits. Prerequisite: 2.5 GPA in major, Junior standing and permission of chair at least one semester in advance of registering for the course.

EVRN435

Environmental Systems

(3,0) 3

A systems approach addressing engineered systems and their environmental impacts in modern society. Students will describe and analyze the causes and consequences of air pollution and air pollution control, water pollution and water pollution control (point source and nonpoint source controls), waste treatment, wastewater treatment, drinking water treatment, soil remediation, modern landfills, and design criteria. Prerequisites: MATH111, CHEM115, and NSCI103.

EVRN445

Remote Sensing and Spatial Statistics

(3,3) 4

Remote sensing skills such as ortho-rectification, color balancing, tiling imagery, and automate feature recognition will be used to analyze spatial data such as aerial photography, hyperspectral imagery, multi-spectral imagery, LiDAR, microwave, and RADAR. Spatial statistics focuses on analyzing patterns, mapping

clusters, and identifying geographic distributions using point pattern analysis spatial autocorrelation, spatial regression and kriging. Prerequisite: EVRN325.

EVRN450

Laboratory Apprentice

(0,3) Per Credit 1-2

Students will assist in laboratories, learning instructional techniques, under direction of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the faculty member in charge of the specific laboratory, and the department chair. Credits may be used as EVRN electives.

EVRN490

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(incomplete) grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the College of Natural and Mathematical Sciences office.

EVRN495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. This course will be required for a degree certified by the American Chemical Society. This course may not be repeated for credit. Prerequisites: EVRN395 (also listed as CHEM395), and permission of instructor. Dual listed as CHEM495.

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FINC242

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: MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC245

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 FINC341 may not enroll in this course. Prerequisites: ACTG132, 230, or OFFC119, and MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC248

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: MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC341

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: ACTG133 and MATH111.

FINC443

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: BUSN350 and MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC446

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: FINC341.

FINC448

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: FINC341.

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FINE405

Independent Project

(3,0) 3

Under the direction of an appropriate supervisor, the student will design and execute a scholarly (academic/creative) or practical (business/management) project related to an artistic discipline. The project will culminate in a relevant performance, works of art, composition, paper, presentation, or other appropriate product. Prerequisites: Instructor approval. This course may be repeated once for a total of six credits.

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FIRE101

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.

FIRE102

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.

FIRE111

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.

FIRE197

Physical Fitness for Public Safety

(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Fire science students take the course semester before FIRE220.

FIRE201

Fire Protection Construction Concepts

(3,0) 3

Impact of building construction concepts and methods on firefighting tactics and strategy, decision making and safety. Presentation of the ramifications of hostile fire on construction and building materials. Prerequisite: FIRE101.

FIRE204

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam and FIRE101 or FIRE102.

FIRE206

Fire Protection Systems, Equipment and Industrial Fire Protection

(3,0) 3

Use and water supply needs of sprinkler and stand pipe systems and devices, fixed detection and control 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. Examination of fire and lifestyle hazards in business and industry. Emphasis on managing fire prevention and training private fire brigades. Prerequisites: FIRE101, FIRE111, FIRE204 and MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

FIRE211

Tactics and Strategy

(3,0) 3

Utilization of manpower, equipment and apparatus on the fireground. Emphasis: Pre-fire planning, fire ground decision making. Implementing tactics and disaster planning. Students will use fire simulation programs and interactive technology to apply and implement the principles covered in didactic instruction. Prerequisite: Either FIRE101 or 102 and 204 as a pre- or corequisite.

FIRE219

Firefighter Essentials

(3,0) 3

This course is the first part of a two class sequence; the second part of the sequence is FIRE220. This course will cover the principles of firefighting attack skills through the practical instruction and exercises as outlined by the Michigan Firefighters Training Council (MFFTC). This course introduces the student to the application of the principles of fire attack and strategy for Firefighter I certificate and portions of Firefighter II through the use of exercises and computer-generated simulations. Hazmat incident analysis and other major disaster case studies are used in this class. Prerequisites: FIRE101 and 111. Corequisites: FIRE197, 204, and 206. Completion of special medical examination.

FIRE220

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: FIRE219. Corequisites: FIRE206 and FIRE211. Completion of specialized medical examination.

FIRE301

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, formulations and its relation to fire prevention and public education efforts and responsibilities of the fire service. Prerequisites: FIRE111, FIRE206 and Junior Standing.

FIRE309

Fire-Related Human Behavior

(3,0) 3

This course will provide students the knowledge to understand how humans behave in fire and emergency situations, and how that behavior is integrated into life safety systems development and design. Students will study past and present research on human behavior, life safety models, building design, and life safety education. Students will develop an understanding how to analyze possible outcomes as it relates to human survivability in fire and emergency situations. Pre- or Co-requisites: FIRE101, FIRE206, and FIRE301, or permission of instructor.

FIRE312

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: FIRE111 or CHEM116 and junior standing.

FIRE315

Company Level Supervision and Management

(3,0) 3

This course is intended to provide a comprehensive overview of supervision and administration skills necessary to function as a company officer, which would include but not be limited to planning, budgeting, time management, training, emergency incident command, and facility maintenance and care. Pre- or corequisites: FIRE101, FIRE111, FIRE204, FIRE206 and FIRE211.

FIRE325

Homeland Security and Emergency Services

(3,0) 3

This course will prepare all graduates from a variety of majors to understand how homeland security impacts the US political system as a whole, but especially from the standpoint of emergency response and preparedness. Investigates the impact of the federal, homeland security apparatus on emergency response organizations at the state and local level. Includes a historical review of homeland security measures beginning in WWI and through WWII and the Korean War. Especially reviews the security situation during the Cold War. The course deals with the federal agencies usually not associated with homeland security, such as DEA, ATF, the military departments, FAA, CDC, the National

Guard Bureau, and the DOD. Prerequisite: Junior standing. Students from other majors are encouraged to enroll with permission of instructor. Also listed as CJUS325.

FIRE401

Senior Seminar

(3,0) 3

Seminar and independent study course with individual student guidance by faculty on selected research topics in fire science. Prerequisites: ENGL111; Pre or Corequisite MATH207 or CJUS345, and Senior standing.

FIRE402

Fire Service and the Law

(3,0) 3

Capstone course. Introduces the judicial system in which the fire service operates. Covers civil action, liability, labor, prevention, safety (OSHA), and environmental law. Prerequisite: Senior level standing.

FIRE403

Fire Science Internship

3-9

Fire science internship with an agency. Credit is based on the equivalent of 45 hours of field work per credit hour. Students must make application by the ninth week of the previous semester. Prerequisites: Senior standing and permission of instructor. Course may be repeated for a maximum of 9 credits.

FIRE490

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.

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GEOG106

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. Credit for both GEOG106 and NSCI107 not permitted.

GEOG108

Physical Geography: Meteorology & Climatology

(3,2) 4

Introduction to earth-sun relationships, maps and elementary principles of atmospheric science. Natural (physical) science credit given. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. Credit for both GEOG108 and NSCI105 not permitted.

GEOG201

World Regional Geography

(4,0) 4 Alternate Years

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.

GEOG302

Economic Geography

(4,0) 4 Alternate Years

A study of the internal and external inter-relationships of the various economic groupings of the world; i.e. North America, Europe and the emerging third world.

GEOG306

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.

GEOG322

Geography of South America, Central America and the Caribbean Region

(4,0) 4 Alternate Years

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.

GEOG323

Geography of East and Southeast Asia

(4,0) 4 Alternate Years

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.

GEOG490

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.

GEOG492

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.

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GEOL115

Field Excursions in Earth Science

(2,4) 4

A field- and project-based educational experience in which aspects of geology, including environmental geology, earth resources, tectonic processes and the interrelationships among geology and other natural sciences, will be addressed. Travel destinations will include regions with unique natural history.

GEOL121

Physical Geology

(3,2) 4

The study of processes and features of the rocks and surficial materials that form the Earth's crust. Emphasis will be placed on the dynamic earth including volcanoes, plate tectonics, geologic time, catastrophic events such as earthquakes, and natural resources and their impact on society. The class requires student projects and emphasizes active problem-solving.

GEOL122

Historical Geology

(3,2) 4

The study of surficial, tectonic, geologic and biologic processes in the context of an Earth history perspective. Emphasis will be placed on evolution of the earth; stratigraphic principles, tectonic framework of North America; rock forming processes, landforms and depositional environments; climate, weathering, surficial processes, and sea level changes; and significant events in the history of plants and animals as recorded by fossils and paleontology studies.

GEOL223

Earth Materials

(3,3) 4

A course emphasizing techniques for identification and interpretation of minerals and rocks. Major topics include: physical properties, crystalline structure, and chemical composition of minerals, classification of minerals and rocks; interpretation of origins of igneous, sedimentary and metamorphic rocks; plate tectonic occurrence of minerals and rock assemblages; and societal and economic significance of minerals and rocks. Prerequisite: GEOL121 or NSCI102. Pre- or corequisites: GEOL122 and CHEM115.

GEOL290

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 chair. This course may be repeated for a maximum of eight credits. Prerequisite: Sophomore standing or higher.

GEOL308

Structural Geology Systems

(3,3) 4

A study of the deformation of the Earth through a project-centered approach that focuses on geologic questions. Course emphasis is on descriptive, kinematic and dynamic analysis of geologic structures, deformation mechanisms and the evolution of each in the context of the regional and global geology. Day and/or weekend field excursions may be required. Prerequisite: GEOL121 and GEOL122.

GEOL315

Geoenvironmental Systems

(3,3) 4 Alternate Years

The study of environmental issues in a geological context through local and regional field projects. Projects will examine issues such as flooding, shoreline erosion, slope stability, groundwater resources and contamination, and the environmental impact of mineral and energy resource extraction. Emphasis will be placed on the evaluation of environmental issues through the application of geological and environmental field data such as collecting and analyzing sediments, and bedrock and sediment mapping. Prerequisites: GEOL121 and GEOL122, CHEM115 and EVRN131.

GEOL322

Geochemical Systems

(3,3) 4

The study of high- and low-temperature geochemical processes including topics such as chemical, mineral and rock equilibrium, redox reactions, isotopes, chemical weathering, and nutrient cycles. Low-temperature geochemistry will emphasize processes that occur in soil, water, air, and sediments. High-temperature geochemistry will focus on trace and primary elements, igneous and metamorphic processes and geochemical processes that form ore-bearing mineral deposits. A field trip to visit mining, mineral exploration or environmental sites may be required. Prerequisites: GEOL223 and CHEM115.

GEOL334

Hydrologic Systems: Surface and Groundwater

(3,3) 4

A study of hydrologic systems with with an emphasis on hydrologic processes on land surface, sub-surface, and near-surface atmosphere. Water movement through geologic materials, aquifer properties, well-water dynamics, and contaminant transport in groundwater; physical basis of evapotranspiration, precipitation, and surface runoff; and causes and solution approaches of water resource problems will be studied. Laboratory components will provide experience in hydrologic field-techniques, analytical methods of hydrologic data, model-based exercises and data analysis. Prerequisites: GEOL121, EVRN131 and

MATH111. Pre-or Corequisite: GEOL122.

GEOL355

Stratigraphy and Sedimentation

(3,3) 4 Alternate Years

The study and interpretation of clastic and carbonate sediments and rocks and the environments in which they form. Emphasis will be on stratigraphic and sedimentological principal through topics such as clastic transport and fluid flow; sedimentary structures; lithostratigraphy, biostratigraphy and introduction to sequence stratigraphy; facies recognition and relationships; depositional models; stratigraphic diagrams and maps; diagenesis and tectonics and sedimentation. Weekend fieldtrips may be required. Prerequisite: GEOL223 and GEOL308.

GEOL380

Introduction to Field Geology

(0,9) 3

Introduction to field methods in geology including measurement of sections, mapping techniques, and field interpretation of outcrops. A variety of geologic provinces and environments will be examined. A supply and travel fee will be charged. Prerequisites: GEOL223 and GEOL308.

GEOL410

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: MATH112 or 151, CSCI101 or 111, PHYS221 or 231.

GEOL431

Geophysical Systems

(3,3) 4 Alternate Years

The study of geologic, geophysical, and environmental problems using geophysical techniques such as: ground penetrating radar, magnetic, electromagnetic, resistivity, gravity, seismics, etc. Projects will involve geophysical and geologic survey design, data collection, data processing, and data interpretation and will require the integration of geophysical and geological data to solve problems. Prerequisite: GEOL308. Pre- or corequisites: MATH112 or MATH151 and PHYS221 or PHYS231.

GEOL440

Technology in Geology

(1,3) 2 Alternate Years

Students will use modern technologies to evaluate geologic problems and questions. These technologies will change with time but may include computer, field and/or laboratory applications. Prerequisite: Eight or more credits of GEOL 3XX and/or GEOL4XX courses.

GEOL450

Geology Seminar I

(0,2) 1 Alternate Years

Study, discussion, and laboratory experience in specialized topics in geology. Students will collect and compile information, write research papers, make presentations, and lead discussions. Prerequisite: Two GEOL courses at the 300 level or above.

GEOL451

Geology Seminar II

(0,2) 1 Alternate Years

Study, discussion, and laboratory experience in specialized topics in geology. Students will collect and compile information, write research papers, make presentations, and lead discussions. Prerequisite: Two GEOL courses at the 300 level or above.

GEOL468

Tectonic Systems

(3,6) 5 Alternate years

Study of tectonic process and how these processes affect the earth and its evolution with time. A variety of modern and ancient tectonic settings will be studied through projects and case studies. The deformational, geochemical, mineralogical, petrological, sedimentological and geophysical characteristics of individual tectonic settings will be evaluated and their evolution with time will be analyzed. Weekend and/or weeklong field trips may be required. Prerequisites: GEOL223 and GEOL308.

GEOL480

Advanced Field Geology

(0,9) 3 Alternate Years

Three weeks of advanced field methods in geology including field mapping of deformed rocks, construction of cross sections, and interpretation of depositional and deformational histories. A variety of geologic provinces and environments will be examined. A supply and travel fee will be charged. Prerequisites: GEOL380 and one additional GEOL course at the 300 level or above.

GEOL490

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 chair. This course may be repeated for a maximum of eight credits. Prerequisites: Junior standing or higher.

GEOL495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and

his/her faculty mentor. Prerequisite: NRES399 or equivalent and permission of the instructor.

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HIST101
History of World Civilization I
(4,0) 4 Fall

A study of world civilization from earliest time through the baroque.

HIST102
History of World Civilization II
(4,0) 4 Spring

A study of world civilization from the baroque to the present.

HIST131
United States History I
(4,0) 4 Fall

A study of United States history from the colonial settlement to the end of the American Civil War in 1865.

HIST132
United States History II
(4,0) 4 Spring

A study of United States history from the end of the Civil War to the present.

HIST203
Chinese Cultural Diversity
(3,0) 3

Designed for students interested in the diversity of Chinese culture and study abroad. Taught in English and offered at a partner university in China during the first summer session. This four-week course explores, but is not limited to, the traditional social values, classes, divergences, ethnicity, religion, and gender issues characteristic of Chinese culture. The course is conducted in a lecture format with class discussions and guided field trips.

HIST231
Natives and Newcomers
(3,0) 3

This course is an introduction to the encounters between Native Americans, Europeans, and Africans in North America from the late fifteenth century to the mid-eighteenth century. Students will gain a working knowledge on how these encounters generated a variety of cultural, economic, religious, political, social, and military interactions. No Prerequisites or Co-requisites required.

HIST250

The Atlantic World

(3,0) 3

From the late 15th through the 18th centuries, the continents bordering the Atlantic Ocean were thrust into interaction. Europeans, Africans, and indigenous peoples negotiated diverse new societies through both confrontation and cooperation. This course explores interconnections through histories of Europe, Africa, North America, and the Caribbean, demonstrating the associations between peoples and nations within a global context. Prerequisite: HIST101 or HIST131. Spring odd-numbered years.

HIST296

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: HIST101/HIST102 sequence or HIST131/HIST132 sequence. Fall.

HIST301

History of England: 1000 to 1714

(4,0) 4 On Demand

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.

HIST302

England in the Modern World

(4,0) 4 Spring, even-numbered years

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.

HIST310

Russia: From Under-developed State to Superpower

(4,0) 4 Fall, odd-numbered years

A study of Russian history from Peter the Great to the present.

HIST315

Europe From Napoleon to World War I

(4,0) 4 Fall, even-numbered years

A study in the political and economic history of Europe in the period 1789-1914.

HIST316

Europe in the 20th Century

(4,0) 4 Spring, odd-numbered years

A study of Europe in the age of Nazism, Communism, World War I and II, and the Common Market.

HIST321

History of Michigan

(2,0) 2

The History of Michigan is a survey course that will include an examination of the geology, geography, and history of the state. This course will also study the role of citizens, events, issues, and their impact on the development of Michigan as well as the larger developments in the United States during the Jacksonian Period, the Civil War Period, the Period of Rapid Industrialization and Urbanization, the Period of 1914 to 1945, the Period 1950 to the Present, the Period of Industrial Expansion and Decline, and the Post-Vietnam War Period of Globalization. The major political, economic, social, and cultural movements and developments of these historic periods will be examined.

HIST333

American Military History

(4,0) 4

This is a survey of military history that will study the inter-relationships of warfare and society in American history. It will not only investigate how political and societal changes have influenced the nature of warfare in American history, but how the composition of the military establishment and its transformations has impacted state and society.

HIST361

Latin America

(4,0) 4 Fall, even-numbered years

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 the role in the change of problems of U.S.-Latin American relations will be an important focus of this study. Prerequisite: GEOG322 geography of South America.

HIST371

Far East Civilization: 1850 to Present

(4,0) 4 Odd numbered years

A study of the history of China, Japan, India and adjoining areas of Asia from 1850 to present.

HIST440

American Revolutionary Era

(3,0) 3

This course examines the diversity of Colonial America in the mid 18th century. It traces the challenges faced by the British colonies in the French and Indian War, the emergence of political unity and national identity among Americans, and the achievement of American independence by 1783. Prerequisite: HIST101 and HIST102 sequence or HIST131 and HIST132 sequence; HIST296; or instructor permission.

HIST441

History of American Foreign Policy, 1776-1950

(3,0) 3

This course examines US Foreign Policy from 1776 to 1950, with some consideration to the 1607-1776 era. The course investigates US conduct in war and diplomacy, issues of cultural contact, impact of domestic politics on foreign policymaking, the organization political economy, and problems of American Imperialism. Prerequisite or Co-requisite of the HIST131, HIST132 sequence or POLI110.

HIST490

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. Prerequisite: Permission of instructor.

HIST497

Senior Seminar in History

(0-6) 2

Students will complete a 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: HIST496 and instructor permission.

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HLTH101

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.

HLTH104

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.

HLTH150

Introduction to Public Health

(3,0) 3

A survey of the field of public health from a biopsychosocial perspective.

Prerequisites: None.

HLTH185

Basic Health Care Skills

(1,3) 2

The purpose of this course is to introduce the student to basic health care skills. Student learning will include basic concepts and skills related to medical and surgical asepsis, total hygiene, mobility, body mechanics, patient safety, phlebotomy skills, and earn a certificate in mental health first aid. Prerequisite: HLTH101.

HLTH208

Principles of Human Nutrition

(3,0) 3

Fundamentals of human nutrition and nutrition therapy are presented in relation to human body function in wellness and illness. With a special focus across the lifespan, content from this course begins to build a foundation for the interpretation of diet regimes and diet formulations for patients with nutritional needs. This course is required for all nursing students. Prerequisites: BIOL122 or BIOL105 with a grade of C or better.

HLTH209

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: BIOL122 or 105 and CHEM105.

HLTH210

Introduction to Health Care Concepts and Issues

(3,0) 3

This course is an introduction to the health care system with analysis of the issues and trends affecting the provision of health care services. Health care topics reviewed will include both local and global issues. Required course for environmental health and healthcare and administration; may also be used as an elective course. Material supports accreditation criteria for environmental health. Prerequisite: Sophomore standing.

HLTH232

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: BIOL122.

HLTH235

Healthcare Informatics

(2,0) 2

The purpose of this course is to gain a basic understanding of nursing informatics and its application to education, research and practice in health care professions. Topics include computer literacy skills, information literacy, and overall informatics competencies. Competencies taught will meet the American Nurses Association Scope and Standards of Nursing Informatics Practice (ANA, 2001) for beginning nurses. Prerequisites: Admission into Nursing program and basic computer skills.

HLTH310

Pathopharmacology

(3,0) 3

This course applies information learned in Pharmacology and Pathophysiology to incorporate evidence-based findings into nursing practice. This course will provide an advanced foundation for clinical assessment, clinical decision-making, and patient management. Through the expansion of knowledge, technology, and skills, students will advance their nursing practice into the care of patients with selected disease states and determine the most appropriate route of care. Prerequisites: HLTH209, HLTH232, NURS213.

HLTH328

Multicultural Approaches to Health Care

(3,0) 3

This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations, assessment techniques and alternative/complementary health practices. Prerequisite: SOCY101. Also listed as NURS328.

HLTH329

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: SOCY101.

HLTH330

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: HLTH208.

HLTH352

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: PSYC155 and junior level status. Also listed as NURS352.

HLTH452

Contemporary Issues in Nutrition

(3,0) 3

Utilizing an epidemiological frame, students will learn how to research current issues and topics in nutrition for closer examination and discussion. Nutritional trends and topics such as nutraceuticals, nutrigenomics, functional foods, supplements, herbs, and advertised dietary approaches aimed at promoting wellness and health will be explored in-depth and analyzed. Prerequisites: BIOL122, CHEM105, HLTH104, 108, 208 and EXER275.

HLTH490

Independent Study in Health

(1-4,0) 1-4

Individual investigation of topics tailored to student interest and need. Prerequisites: Junior or senior standing and instructor permission.

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HONR101

Honors First-Year Seminar (variable topics)

(1-2,0) 1-2

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.

HONR199

Honors Freshman Seminar

(1,0) 1

This course creates a learning community centered around the mind. Students will explore concepts and content related to the Honor Program's three pillars of Self, Society, and Citizen; the university's Campus Read book; and other topics. This course, furthermore, introduces students to the structure, governance, and supplemental opportunities available to Honors Program students.

HONR202

Honors Contemporary Issues

(3,0) 3

An interdisciplinary sophomore-level seminar for University Honors Programs

students. The course is designed to accommodate a range of specific topics; the particular topics, however, will investigate some aspect of the history of intellectual ideas, the nature of intellectual inquiry, and/or the construction of knowledge. The instructor serves as a facilitator in the seminar format which is intended to encourage student-directed learning. Prerequisites: formal admission to the University Honors Program and/or permission of the Honors Program coordinator. May be repeated for a maximum of 9 credits.

HONR302

Honors Ideas Seminar

(3,0) 3

A junior-level seminar for University Honors Program students. The course is designed to accommodate a range of special topics to be submitted by LSSU faculty under the general provision for Special Topics; the topics may evolve out of an interdisciplinary focus on some aspect of traditional disciplinary subject matter, or may be a reconfiguration of a regular course, redesigned to meet the particular needs of Honors Program students. The role of the instructor, however, would be as a facilitator, working within the seminar format to encourage student-directed learning around a topic requiring intellectual rigor. As this is a core requirement for all junior Honors students, it is expected that a given course proposal would not require prerequisites beyond those for general education. Prerequisites: formal admission to the University Honors Program, junior status, and/or permission of the Honors Program coordinator. HONR201 recommended. May be repeated for a maximum of nine credits.

HONR401

Honors Thesis

(1-4,0) 1-4

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, HONR202 and HONR302. Students must present a fully developed proposal to the Honors Council for approval before enrolling in HONR401 or its equivalent in their major.

HONR499

Honors Senior Seminar

(1,0) 1

This is the culminating experience of the Honors Program course experience centered around questions of living a meaningful life, leading others in responsible ways, and mentoring the next cohort of LSSU Honors students.

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HUMN203

Survey of Chinese Culture

(3,0) 3

Designed for students interested in Chinese culture and study abroad. Taught in English and offered at a partner university in China during the first summer session. This four-week course introduces the major cultural and artistic aspects of Chinese society. Lecture topics include Chinese history, geography, language, ethos, philosophy, literature, religion, historical relics, education, medicine, architecture, etiquette, and social and economic aspects of Chinese culture. Field trips to museums, art galleries, historic sites, and places of interest are scheduled throughout the trip.

HUMN240

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 NATV240.

HUMN251

Humanities I

(4,0) 4

This course uses an interdisciplinary approach that includes art, philosophy, literature, and music to understand the evolution of culture. It begins with prehistory and the first agricultural settlements in Egypt and the Fertile Crescent. Some cross-cultural comparisons are made through the study of ancient Indian and Chinese culture. Emphasis is placed on the intellectual development of the ancient Hebrews. Ancient Greece and Rome follow, as the progenitors of western culture. We examine the religious practices of emerging Islam, set in contrast and comparison with the Christian intellectual tradition through the Byzantine, Romanesque and Gothic periods. Hindu and Buddhist ideas and artifacts provide further context and perspective. The course concludes with the study of renaissance culture into the early 16th century. Prerequisite: ENGL110.

HUMN252

Humanities II

(4,0) 4

Humanistic study moves across the disciplines of art, philosophy, literature, and music. This course begins with a review of renaissance humanism and explores the Reformation and the Catholic Church's response to it. The age of despots is examined in the Baroque and Neoclassical styles leading to the Enlightenment and the Age of Reason. Mention is made of the democratic revolutions that occurred in the United States, France, and England. Impressionism, Expressionism, Surrealism and other modern styles are presented as they appear in the art and literature of the 20th and 21st centuries. Prerequisite: ENGL110.

HUMN255

World Mythology

(4,0) 4

A survey of world mythology from Gilgamesh to Finnegans Wake. Prerequisite: ENGL110.

HUMN256

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.

Prerequisite: ENGL110.

HUMN261

World Literature I

(3,0) 3 On Demand

The Ancient World to the Renaissance. Readings in translation of significant, primarily Western texts. Selection can include the Bible and works by such authors as Homer, Virgil, Thucydides, Tacitus, Boccaccio, Montaigne, Rabelais, and others. Prerequisite: ENGL110.

HUMN262

World Literature II

(3,0) 3 On Demand

The Renaissance to modern times. Readings in translation of significant, primarily Western, texts. Selections can include works by Galileo, Voltaire, Racine, Goethe, Ibsen, Dostoevsky, Brecht, Kafka, Sartre and others. Prerequisite: ENGL110.

HUMN490

Directed Studies in Humanities

(1,0) 1 On Demand

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.

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INTB289

Competing in the Global Market Place

(3,0) 3

This course presents a systematic overview of international business and provides an introduction to important issues, including international trade policy, the global monetary system, and strategies of international business. Additionally, the course will look at management practices of international business, including: organizational structure of multinational organizations, production and logistics, human resource management, and financial management.

INTB375

International Business Law

(3,0) 3

The course provides an introduction to the environment of international business and law. It will focus on the foundations and principles of the international legal environment and international legal systems. The course covers the law on international trade. It allows the student to understand government foreign trade policies, the law concerning international business transactions, importing, exporting, transportation and logistics. This course covers a range of legal issues involved in conducting international business, surveying some of the many issues encountered in intellectual property and licensing, and the taxation of international business transactions.

INTB420

International Comparative Management

(3,0) 3

This course in international comparative management will examine important trends impacting international business as well as the major and developing players in the international economy. The course will examine the stage on which international management is conducted, which includes political, legal and socio-cultural systems as a backdrop. The course will cover how firms develop and execute their international strategies and how they stay ahead of their competitors, once they do. An important aspect for the success of international companies is HR (Human Resources). The course will explore how firms can build an outstanding international workforce through selecting and motivating employees as well as dealing with a host of related human resource management issues, such as compensation, performance appraisal, training and development and labor relations from an international perspective. Prerequisites: MGMT360 or special permission of instructor.

INTB486

International Marketing

(3,0) 3

The International Marketing course examines the scope, challenge and dynamic environment of international marketing. This course will provide an understanding of the cultural environment of global markets, global opportunities and the development and implementation of global marketing strategies. Challenging decisions must be made in international marketing objectives-strategies-policies, regional & country market selection, products that fit regions-countries, multiple distribution channels, communications to fit each global region, management models & organizations per region-country, knowledge-information-data management, exploration of cultural issues, competition, economies, and customers. Prerequisites: MRKT281 or permission of instructor.

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INTD310

Foreign Study

1-16 graded

Individual extension added based on student's program.

INTD320

Foreign Study

3-16 credit/no credit

Individual extension added based on student's program.

INTD333

The Origins of Human Nature

(4,0) 4

An integrated, interdisciplinary examination of the origins of human nature from the perspective of contemporary evolutionary theory, ethology and biological anthropology. The course examines the origins of - among other phenomena - sexual behavior, marriage and family life, crime, social stratification, leadership, government, politics, patriotism, nationalism, racism, ethnocentrism, aggression, genocide, war, ideology and morality. Prerequisites: a college biology course or PSYC101, one college course from each of two social science disciplines (anthropology, economics, political science, psychology, sociology), and junior standing.

INTD410

Foreign Study

(3-16) 3-16

Individual extension added based on student's program. (Graded)

INTD420

Foreign Study

(3-16) 3-16

Individual extension added based on student's program. 3-16 credit/no credit

INTD490

Senior Directed Study

(3-4,0) 3-4

This course is designed to allow liberal studies majors the opportunity to develop and implement a project/paper using the skills and knowledge from their previous course work. Projects/papers should relate to the student's individual areas of study, and represent a synthesis of their previous learning under the supervision of an appropriate faculty member. Prerequisites: senior status and approval of the appropriate chair(s).

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JAPN105

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.

JAPN106

Intensive Introductory Japanese Language II

(10,2) 10

This course is designed as a continuation of JAPN105. 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.

JAPN201

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.

JAPN202

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.

JAPN301

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.

JAPN302

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.

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JOUR211

Newswriting

(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. Prerequisite: COMM280.

JOUR220

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.

JOUR310

Editing and Production

(3,0) 3

Focuses on news editing, headline writing, newspaper design and layout as well as newsroom management. Prerequisite: JOUR211.

JOUR413

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; COMM280 and JOUR211. File application with the chair of the Department of English and Communication by fifth week of previous semester.

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KINS101

Foundations in Kinesiology

(3,0) 3

Students will explore strategies aimed at creating success as they pursue their university and professional goals. Using a holistic and integrated approach, students will actively examine the multi-faceted field of Kinesiology. The breadth and impact of human movement will be revealed through field and reflection based experiences. Career opportunities, history, philosophy, current trends, curriculum development and how to navigate the university will be the emphasis.

KINS105

Program Dev & Leadership

(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.

KINS140

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.

KINS230

Ath Injury Illness Prevention

(3,0) 3

This is an introductory class to the field of athletic training. It will provide an overview for the student as to what an athletic trainer does. Topics 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.

KINS232

Ath Injury Illness Rec & Eval

(3,0) 3

This class will be a continuation of KINS230. After a general knowledge base is established in KINS230, KINS232 will elaborate on those concepts and extend them to the various extremities of the body as well as the spine and head. Prerequisites: KINS230 and BIOL122.

KINS234

Preventative Taping Techniques

(0,2) 1

To present current and comprehensive taping and wrapping techniques used in athletic training. Prerequisite: KINS232.

KINS248

Psy Sport Performance/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.

KINS262

Exercise Physiology

(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: BIOL121 and CHEM104 or CHEM115.

KINS265

Personal Fitness Training

(3,0) 3

This course will enable the student to develop knowledge and expertise in the components of sport-related fitness. Specifically, strength training, cardiovascular endurance, flexibility, reaction time, speed and agility will be explored in both traditional and non-traditional sports. Emphasis will be placed on the implementation and measurement of the above sport-related fitness components and the design of a strength training and conditioning program for the purpose of enhancing athletic performance.

KINS268

Fitness Eval I: Func Assessmnt

(2,2) 3

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. Prerequisites: BIOL121 and KINS140.

KINS270

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.

KINS275

Nutrition Sprt Exer Performnce

(3,0) 3

Explicitly details the role of the major nutrients in their application to wellness and fitness settings, as well as athletic performance. Specifically addresses the interaction of diet and exercise in modifying the condition of the individuals with metabolic dysfunction (diabetes, obesity) or compromised cardiovascular health (hypertension, coronary heart disease). Also examines the special nutritional needs of athletes and the effectiveness of ergogenic aids in enhancing sport performance. Prerequisites: BIOL121.

KINS295

Facility & Program Operations

(1,4) 3

Practical experiences that explore various types of work settings in kinesiology, working under a specialist in the student's chosen area of interest utilizing facilities on campus and in the community. Prerequisite: Pre or Co-requisite of KINS265.

KINS301

Ath Training Clinical Exp I

(0,4) 2

This course requires athletic training students to acquire, practice and demonstrate competency in basic clinical skills necessary to provide healthcare to a physically active population in a variety of clinical settings. Prerequisites: junior status and admission to the Athletic Training Education Program.

KINS302

Ath Training Clinical Exp II

(0,4) 2

In this course, athletic training students are required to continue acquiring, practicing and demonstrating competency of the basic clinical skills necessary to provide healthcare to a physically active population in a variety of clinical settings. Prerequisites: KINS301 with a grade of C or better.

KINS332

Health Promotions

(3,0) 3

Health promotion raises a number of economic, public policy, and ethical issues that cut across society. This course will provide students with a strong theoretical foundation for wellness, health promotion and disease prevention for the purpose of maintaining function across the lifespan. Best evidence practice for the design and implementation of worksite health programs and the benefits of these programs for employers and employees will be examined. In addition, this course will examine different theories and models of health promotion from an organizational/community and population perspective.

KINS340

Therapeutic Modalities Ath Trn

(2,2) 3

This course will introduce the student to the theory and application of physical medicine devices commonly used in athletic training and sports medicine settings. Specific attention will be placed on the use of cryotherapy, thermotherapy, electrotherapy, ultrasound, traction, intermittent compression, and therapeutic massage in caring for physical injuries or illness. This course will focus on determining the most effective therapeutic modality for a given situation and the correct application of the selected therapeutic modality. This course is designed to present the knowledge, skills and values an entry-level certified athletic trainer must possess to plan, implement, document and assess the efficacy of therapeutic modalities in the care of physical injuries and illnesses. Prerequisites: KINS232 and BIOL122.

KINS344

Kinesiology

(3,0) 3

Science of movement applied to muscle, joint structure and function and application of physical laws of gravity, leverage, motion and balance to human performance. Video tape motion analysis is used to apply these theories into practical experience. Prerequisite: KINS141.

KINS345

Adapted Sports and Recreation

(3,0) 3

A study of specialized recreational and athletic opportunities available to individuals with illnesses and disabilities. Related associations, equipment, rules and classifications, resources and research will be encountered for a wide range of activities and conditions. When available, practical opportunities will be included as part of the learning process. Prerequisite: junior standing.

KINS346

Therapeutic Ex Rehabilitation

(2,2) 3

KINS346 will introduce the student to the theory and application of commonly used rehabilitative exercises in the field of athletic training. Students will be introduced to the 10 Goals of Rehabilitation, and will then study the relationship that therapeutic exercise plays in the attainment of each goal. Students will then develop a comprehensive rehabilitation plan that will enable a physically active person to return to activity as safely as possible. Students will be exposed to current surgical techniques and the rehabilitation that is involved. Prerequisite: KINS262.

KINS348

Fitness Eval II Lab 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: KINS268 and KINS262.

KINS349

Orthopedic Assessment

(3,0) 3

Provides a clear, concise process of physical examination of the spine and extremities which would direct the student in a logical, efficient and thorough search of anatomy relevant to the field of sports medicine. This course will allow the student to continue to build a solid foundation in anatomy specific to orthopedic education. Prerequisites: KINS230 and KINS232.

KINS358

Research Methods Kinesiology

(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: MATH207 and KINS262.

KINS362

Applied Exercise Physiology

(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: BIOL122, CHEM115 and KINS262.

KINS370

Recreation for the Elderly

(3,0) 3 Alternate Years

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: RECS101, KINS105 and 200-level recreation electives; or NURS290 and HLTH352.

KINS375

Commercial Recreation

(3,0) 3 Alternate Years

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: KINS105 or BUSN121, ACTG230, ECON202 and FINC245.

KINS401

Internship I

(0,4) 2

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, and therapeutic rehabilitation skills into the health care of a physically active population in a variety of clinical settings. Prerequisite: KINS302 with a grade of C or better.

KINS402

Internship II

(0,4) 2

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, therapeutic rehabilitation skills and administrative skills into the healthcare of a physically active population in a variety of clinical settings. Prerequisite: KINS401 with a grade of C or better.

KINS428

Psych Exercise/Rehabilitation

(3,0) 3

This course focuses upon the theoretical and applied concepts of psychology as it relates to exercise, rehabilitation and sport. 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 on the effects of exercise and rehabilitation on adherence, chronic pain, anxiety, depression, sport injury and sport performance. Prerequisites: KINS358.

KINS434

Neurological Basics Motor Lrn

(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: BIOL122, KINS344 and KINS362.

KINS440

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.

KINS442

Electrocardiography Kinesiology

(3,0) 3

Examines electrophysiological basis of ECG, cardiac anatomy and metabolism responses to rest and exercise. Prerequisite: KINS262 with a C grade or better.

KINS444

Exercise Prescription

(3,0) 3

Provides experience in writing and developing advanced training and conditioning programs for a variety of populations. Process oriented; considers needs analysis and cyclic training.

KINS450

Phil Human Perform/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: KINS262 or RECS101 and junior status.

KINS452

Allied Health Administration

(3,0) 3

This course is intended to enhance the administrative ability of allied health professionals. Students will learn to apply current management theories to administrative problems they may face. This will allow entry level allied health professionals the ability to craft creative solutions to administrative problems. Content in this course includes management strategies for the following: Program offerings, finances, human resources, facilities, information, insurance,

and legal considerations. Prerequisites: KINS230 and junior standing.

KINS481

Prof 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.

KINS482

Admin of Recreation Services

(3,0) 3

This is a capstone course designed for upper level School of Kinesiology students. Learning and applying administration aspects of the profession will include, but is not limited to, labor management, risk management, liability, facility management and planning, marketing, fundraising, budgeting, and current trends for various types of facilities - recreation centers, water parks and pools, fitness centers, parks, sports complexes and resorts. Prerequisite: KINS105 and Junior Standing.

KINS496

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.

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LAWS102

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.

LAWS202

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: LAWS102.

LAWS490

Independent Study in Legal 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.

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LIBR101

Introduction to Information Literacy

(1,0) 1

Introduces students to the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning, with special focus on critical self-reflection, as crucial to becoming more self-directed in that rapidly changing ecosystem (ACRL).

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LING403

Language Acquisition and Foreign Language Teaching

(3,0) 3

Introduction to theories of language and language acquisition as applied to current language teaching methods and classroom practices. This course is a requirement for both the Spanish teaching major and the Spanish teaching minor. The class will be taught in English, but students will use a foreign language of their choice in teaching presentations. Prerequisites: SPAN361 and SPAN362 or FREN351 and FREN352.

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MATH088

Beginning Algebra

(3,0) 3

A review of integer and rational number operations, introduction to algebra, algebraic expressions and solving of elementary equations and inequalities will be covered in this class. Manipulation and graphing of equations in two variables, as well as solving systems of equations in two variables. Multiplying, factoring and manipulating polynomial expressions. Credit in this course does not apply toward graduation. Students who are enrolled in MATH088 are encouraged to also enroll in MATH107 concurrently. Prerequisite: none.

MATH102

Intermediate Algebra

(3,0) 3

Algebra for students who have not had second-level high school algebra or who need a refresher course in that level of algebra. Quadratic equations, radical and rational expressions and equations, exponential and logarithmic functions will be studied. Students who are enrolled in MATH088 are encouraged to also enroll in MATH107 concurrently. Prerequisites: MATH088 or equivalent/satisfactory score on ACT/SAT or Placement Exam. This course will not count toward a major or minor in mathematics.

MATH103

Number Systems and Problem Solving for Elementary Teachers

(3,2) 4

General notions of problem solving and number theory for elementary teachers including sets, functions, numeration systems, and properties and operations of whole numbers, integers, fractions and decimals, and proportional reasoning. Prerequisite: Equivalent/satisfactory score on ACT or Placement Exam, or MATH102 with a grade of C (2.00) or better.

MATH104

Geometry and Measurement for Elementary Teachers

(3,2) 4

Basic notions of geometry for elementary teachers including constructions, congruence and similarity, motion geometry, symmetry and tessellations. Concepts of measurement, coordinate geometry, probability and data analysis. Prerequisite: Equivalent/satisfactory score on ACT, or Placement Exam, or MATH102 with a grade of C (2.00) or better.

MATH107

Building Mathematics Confidence

(1,0) 1

Students who are enrolled in MATH088 or MATH102 are strongly encouraged to enroll in this class. In this class we will discuss phobias about mathematics and build our confidence about our mathematical abilities through discussion and active problem solving without the constraints of a traditional mathematics course. This course will be a suggested co-requisite with MATH088 or MATH102. Course may not be repeated.

MATH110

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: MATH088 or equivalent score on ACT or Placement Exam.

MATH111

College Algebra

(3,0) 3

This course is a study of families of functions through formulas, tables, graphs and words, emphasizing applications in business, life and social science. The

function families include linear, polynomial, rational, exponential, logarithmic and power functions. Within these families, topics include problem solving, model creation, solving equations, systems of equations and inequalities, rates of change, graphing, analysis, and interpretation. Prerequisites: Two years of high school algebra and satisfactory achievement on the mathematics placement exam or MATH102 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.

MATH112

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: MATH111 with a grade of C or better. This course will not count toward a major or minor in mathematics.

MATH131

College Trigonometry

(3,0) 3

Basic theory of trigonometric functions and inverse trigonometric functions. Applications include trigonometric equations, plane trigonometry, vectors and complex numbers. Introduction to conic sections. Study of exponential functions and their connection to trigonometry functions, logarithmic functions and applications. Prerequisites: (1) Two years of high school algebra and equivalent/satisfactory score on ACT, COMPASS test or Placement Exam, or MATH102 with a grade of C or better. (2) One half-year of high school trigonometry with a grade of C or better is strongly recommended.

MATH151

Calculus I

(4,0) 4

Limits, continuity and inverse functions. Logarithmic and exponential functions. Differentiation and applications of the derivative. L'Hopital's rule. Inverse trigonometric functions. Integration and the definite integral. Prerequisites: high school mathematics that includes two years of algebra, one year of plane geometry and one-half year of trigonometry and equivalent/satisfactory score on SAT, ACT or Placement Exam or both MATH111 and MATH131 with a grade of C or better.

MATH152

Calculus II

(4,0) 4

Applications of the definite integral. Techniques of integration and improper integrals. Infinite series. Conic sections, polar coordinates and parametric equations. Prerequisite: MATH151 with a grade of C or better.

MATH207

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. This course will not count toward a major in mathematics.

MATH215

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: MATH151 or 112 with a grade of C or better.

MATH216

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: MATH215 with a grade of C or better.

MATH251

Calculus III

(4,0) 4

Three-dimensional space, vectors, vector-valued functions, partial differentiation, multiple integration, topics in vector calculus. Prerequisite: MATH152 with a grade of C or better.

MATH261

Introduction to Numerical Methods

(3,0) 3 On Demand

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: CSCI105 or CSCI121 with a grade of C or better and MATH152 with a grade of C or better.

MATH290

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.

MATH305

Linear Algebra

(3,0) 3 Alternate Years

An introduction to matrix algebra, vector spaces and linear transformation, including applications to the natural and social sciences. Prerequisites: MATH112 or MATH151 with a grade of C or better.

MATH308

Probability and Mathematical Statistics

(3,0) 3

An introductory course in probability and mathematical statistics. Probability, probability distributions, mathematical expectation, moment generating functions and the Central Limit Theorem. Prerequisite: MATH152 with a grade of C or better.

MATH309

Applied Statistics

(4,0) 4

A continuation of MATH308 including estimation of parameters, testing hypotheses, nonparametric methods, analysis of variance, multiple regression and an introduction to statistical software packages. Prerequisite: MATH308 with a grade of C or better.

MATH310

Differential Equations

(3,0) 3

Differential equations of first order, linear differential equations of second and higher orders, including Laplace transformation. Introduction to power series methods, applications. Prerequisite: MATH152 with a grade of C or better.

MATH321

History of Mathematics

(3,0) 3

Selected topics in the development of mathematics from the time of the ancient Babylonians and Egyptians to the 20th century. Prerequisites: MATH112 or 151 with a grade of C or better, and MATH215 with a grade of C or better.

MATH325

College Geometry

(2,2) 3 Alternate Years

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: MATH215 with a grade of C or better.

MATH341

Abstract Algebra I

(3,0) 3

An introduction to congruencies, groups, subgroups, quotient groups, fundamental homomorphism theorems, Sylow theorems. Prerequisite: MATH215 with a grade of C or better.

MATH342

Abstract Algebra II

(3,0) 3 On Demand

A continuation of MATH341 including rings, integral domains, ideals, quotient rings, the natural homomorphism, fields and polynomial rings. Prerequisite: MATH341.

MATH351

Graph Theory

(3,0) 3 Alternate Years

Selected topics in graph theory, including connectivity, matchings, edge and vertex colorings, networks and tournaments. Prerequisite: MATH216 with a grade of C or better.

MATH390

Directed Study in [Discipline]

(3,0) 3

Directed study of a junior or senior level topic in mathematics. Prerequisite: Permission of instructor. This course may be repeated up to 12 credits.

MATH401

Mathematical Modeling

(3,0) 3 Alternate Years

Selected applications of mathematics in such areas as biology, economics, social science and engineering are discussed. The construction of a mathematical model used to study a real situation will be stressed, as well as interpretation of mathematical results in that context. Prerequisites: junior/senior standing, a course in computer programming, and mathematical maturity at the level of MATH305, 308 or 310 with a minimum grade of C.

MATH411

Advanced Topics in Calculus

(3,0) 3 Alternate Years

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: MATH251 and 310 with a grade of C or better.

MATH413

Introduction to Complex Analysis

(3,0) 3 On Demand

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: MATH251.

MATH421

Real Analysis

(3,0) 3 On Demand

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: MATH215 and 251 with a minimum grade of C.

MATH490

Individualized 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 nine credits. Prerequisite: Junior standing or higher and Permission of Instructor.

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MGMT280

Introduction to Management Information Systems

(3,0) 3

This course will introduce students to MIS theories including (1) Information Systems in Business and Society (information management in global society; security, privacy and ethical issues); (2) Information Technology Concepts (hardware technology, software technology, database management systems, network and internet technology); (3) Business Information Systems (automation and support systems, transaction processing systems, management information systems, decision support and expert systems, enterprise systems such as ERP); (4) Systems Development (systems investigation and analysis, systems planning development and implementation). Students will gain hands-on computer skills in advanced spreadsheet, database, and web technologies. Prerequisites: BUSN121 and ACTG132 with a grade of C or higher.

MGMT360

Management Concepts and Applications

(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.

MGMT365

Human Resource Management

(3,0) 3

An examination of current practices and recommended techniques by which management procures, develops, utilizes and maintains an effective work force. The major areas studied are: recruitment and selection, equal employment opportunity and affirmative action programs, training and development, career planning and performance appraisal, compensation and benefits, safety and

health issues, employee and labor relations, including grievance handling, contract negotiation and remaining union-free as an organization. Prerequisite: Junior standing.

MGMT371

Operations and Business Analytics

(3,0) 3

This course introduces students to (1) Operations Management (operations strategy, operations design, operations planning & control, operations execution), (2) Supply Chain Management, and (3) Quantitative Business Analysis (linear programming, project scheduling including PERT and CPM, inventory modeling, statistical process control, queuing theory, simulation, decision analysis, time-series forecasting, advanced statistical analysis). Prerequisite: BUSN211 or equivalent.

MGMT380

Principles of Leadership

(3,0) 3

This course provides the student with an understanding of the principles and behaviors situationally appropriate to inspire and influence others. Whether people work individually, in small teams, task forces, or other units at all organizational levels; effective leadership sustains profitability, productivity, and excellent service. Studying research findings, leadership practices, and skills helps the student understand how this knowledge can be applied to effectively lead others. Prerequisite: MGMT360.

MGMT451

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.

MGMT464

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: MGMT360.

MGMT469

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.

MGMT471

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: BUSN211 and MGMT360 or equivalents.

MGMT476

Employee Training and Development

(4,0) 4

This course provides the student with an understanding of how to prepare and deliver effective employee training. The course is in five parts: training and development needs analysis, program design, development, delivery, and evaluation. The principles and concepts learned are applied by preparing, delivering, and evaluating a three-hour training program. Prerequisite: Senior standing.

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MRKT281

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: ENGL110.

MRKT283

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.

MRKT379

Sports and Events Marketing

(3,0) 3

A study of the theories, concepts, impacts, and contemporary issues unique to sports and events marketing, including the marketing athletes, teams, leagues, celebrities, entertainment, and special events. Prerequisite: MRKT281 or special permission of instructor.

MRKT381

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: MRKT281.

MRKT383

Digital Marketing

(3,0) 3

A study of the impact the Internet and other digital technologies have on the marketing of goods, services and ideas. The course will examine current e-marketing environment, strategy and management issues including consumer behavior, segmentation and targeting, differentiation and positioning, product, price, distribution, communication and customer relationship management. Ethical and legal issues will also be addressed. Prerequisite: MRKT281.

MRKT384

Social Media Marketing

(3,0) 3

The course content will provide insight to social interactions, examining the various social media channels available to marketers, social marketing strategies, and track their effectiveness. Social media is heavily technology-driven, the course will cover relevant related aspects in digital marketing its relation to buying and selling of goods and services, or the transmitting of funds or data, over an electronic network. Prerequisite: Sophomore standing.

MRKT385

Services Marketing

(3,0) 3

A study of the principles and practices unique to service providers. The focus of this course is to examine how the marketing of services differs from traditional marketing principles/concepts applied to goods and the alternative strategies for service providers to improve service marketing effectiveness and customer interactions. Prerequisite: MRKT281.

MRKT386

Mobile Marketing

(3,0) 3

The course defines mobile marketing, designs strategies, tracks ROI of mobile advertising, and instructs students in the application and design of mobile websites. The course teaches students how users engage with mobile, create a clear marketing strategy, target segment and measure mobile campaigns. Prerequisite: Sophomore standing.

MRKT387

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: MRKT281.

MRKT388

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. Prerequisite: MRKT281.

MRKT480

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: BUSN211, MRKT281 and 381.

MRKT481

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. Prerequisites: MRKT281, 381, 480, and senior status.

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MUSC112

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.

MUSC113

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.

MUSC120

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.

MUSC121

Introduction to Music II

(3,0) 3

The course expands upon the musical vocabulary and skills developed in MUSC120. Topics include C-clefs, seventh chord, non-harmonic tones, cadences, etc. Prerequisite: MUSC120.

MUSC140

Choir

(0,3) 1

Rehearsal and performance of representative literature for mixed choir in both classical and contemporary styles of choral music. May be repeated for a total of eight credits.

MUSC170

Class Piano I

(0,2) 1

Beginning piano techniques. Music reading ability helpful but not required.

MUSC171

Class Piano II

(0,2) 1

To improve proficiency and techniques gained in MUSC170. Prerequisite: MUSC170.

MUSC180

Class Guitar I

(0,2) 1

Introduction to guitar playing including knowledge of musical rudiments, left and right hand techniques and ensemble performance.

MUSC181

Class Guitar II

(0,2) 1

Course emphasizes increasing technical achievement, musicianship and the development of individual musicality.

MUSC210

Applied Music I

(0,3) 1

Individual applied music instruction. For skilled musicians with admission at the

discretion of the instructor. May be repeated to a maximum of eight credits per instrument or for voice.

MUSC220

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.

MUSC221

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.

MUSC235

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.

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NRES107

Field Biology: Fish and Wildlife Ecology and Identification

(2,3) 3

Introduction to organisms and their environmental interactions and conservation concerns with emphasis on regional game species, endangered species, and invasive species. Lab consists primarily of field experiences and specimen identification. Prerequisite: Pre or Corequisite ENGL110.

NRES199

Freshman Seminar

(1,0) 1

A partial focus for this course will be on academic skills and the transition from high school to college. Topics will include time management, use of campus resources, development of critical thinking, and strengthening study skills. At other times students will meet in discipline-based groups in conjunction with BIOL or NRES299, BIOL399 and BIOL499. These meetings will include discussion of literature relevant to the discipline and progress reports from upper-class students engaged in scholarly projects.

NRES203

Fundamentals of Natural Resources

(3,0) 3

This course will introduce students to the history of natural resource conservation and management, career opportunities within the field of natural resources, and interaction between humans and the environment. The course will focus extensively on basic concepts in human dimensions as they apply to natural resource conservation and management. Course topics include assessing social attitudes and values, social conflicts and conflict resolution, legal and regulatory framework of natural resource management, and the role of stakeholder groups in conservation and management. Prerequisite: Pre- or Co-requisite ENGL110.

NRES230

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: CHEM108 and CHEM109 or above; NSCI103 or BIOL132.

NRES240

Natural History of the Vertebrates

(3,0) 3

A survey course covering the taxonomy, phylogeny and ecology of vertebrates with an emphasis on North American taxa. Prerequisite: NRES107 or BIOL132.

NRES250

Quantitative Biology

(3,0) 3

This course will use quantitative methods to examine biological relationships and processes. Students will explore diverse biological topics including heat and energy balance, relative growth, photosynthesis, genetic drift, and diffusion using a variety of quantitative tools. Prerequisites: BIOL131, BIOL132 and MATH111.

NRES284

Principles of Forest Conservation

(2,4) 4

An introduction to forest structure, function, and ecology. Important fundamentals of conservation biology such as the effects of disturbance, fragmentation, and biodiversity on forest ecosystems will be emphasized. Students will master identification of tree and shrub species of the Eastern Upper Peninsula and perform commonly used techniques to evaluate the forest resource. The lab portion of the course is in the field and proper dress is required. Prerequisites: BIOL132 or NSCI103.

NRES286

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. Prerequisite: MATH111.

NRES287

Conservation Biology

(3,0) 3

This course will provide a strong background in the field of conservation biology. The course will discuss patterns in, valuation of, and threats to biodiversity. The course will also examine tools and strategies for conserving biodiversity at the population and species levels and discuss the application of conservation biology in today's society. Specific topics include: (1) Principles of and issues in conservation; (2) Threats to biodiversity; (3) Methods and approaches to evaluate and mitigate threats; (4) Application of principles in the design of conservation reserves, restorations, and sustainable development.

Prerequisites: BIOL131 and BIOL132.

NRES289

Aquatic Research Sampling Methods

(2,3) 3

A variety of sampling techniques are introduced as they relate to the various disciplines of aquatic science. These methods include sampling and preservation of biotic (plankton, fish, benthic invertebrates, DNA, pathogens) and abiotic (water quality, sediments, climate) data. Prerequisites: NRES107, CHEM108, CHEM109, MATH111 and Permission of Instructor.

NRES290

Independent Study in (Discipline)

(1-4,0) 1-4

Special studies and/or research in biology for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of department and college dean. Prerequisites: Students must have an overall gpa of at least 2.50, 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 Natural Science. Also listed as BIOL290.

NRES299

Sophomore Seminar

(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BIOL/NRES199, BIOL399 and BIOL499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Sophomores will assist with ongoing projects and will be guided by faculty and juniors enrolled in BIOL399 to conduct a comprehensive, annotated literature search in their area of interest.

Prerequisite: BIOL199 or NRES199 and ENGL111.

NRES304

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.

NRES310

Ichthyology

(2,3) 3

Study of the anatomy, physiology, behavior, taxonomy and natural history of fishes, with emphasis on freshwater species, particularly those in the Great Lakes region. Prerequisite: BIOL132.

NRES311

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. Prerequisite: BIOL243 or BIOL330.

NRES312

Ornithology

(2,4) 3

A study of the biology and taxonomy of birds. Labs will focus upon bird anatomy and bird recognition using video tapes and specimens, Prerequisite: BIOL132.

NRES333

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: NRES310.

NRES339

Wildlife Ecology

(3,0) 3

A quantitative analysis of the ecology and management of wildlife populations. Theories of population dynamics and distribution are presented. Community interactions including competition, predation, and herbivory, are explored in detail. Prerequisites: NRES250, BIOL280 and BIOL337.

NRES345

Limnology

(2,4) 4

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: NRES250 and CHEM115.

NRES372

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: BIOL280 and NRES310.

NRES389

Internship in (Discipline)

(3-4,0) 3-4

A variable credit practicum course in which the students will perform research and/or gain work experience under the direction of a faculty mentor and a qualified supervisor. Students are expected to spend a minimum of 45 hours in an approved work setting for each credit earned. The course may be repeated once for a maximum of eight credits. Student interns will be required to write weekly updates or journal entries to be submitted to their LSSU faculty mentor for evaluation of what the student has learned. Prerequisites: 2.50 gpa in major and permission of faculty mentor or department chair.

NRES398

Planning an Experiential Learning Project

(1,0) 1

A weekly seminar class for students planning a major experiential learning project, such as a capstone academic service learning project or internship. Students will work with the course instructor to define the project objectives, outline the tasks, plan the work with the host agency, plan the project assessment techniques and budget, and design the academic evaluation. The outcome of class will be a proposal for the project. Prerequisite: NRES/BIOL299.

NRES399

Research Project Design

(1,0) 1

This seminar style course is designed to help students develop their senior thesis project. Topics include literature analysis, scientific writing, and oral presentation of scientific information. In addition, all students will work with their senior thesis mentor, finalize a topic for their senior thesis project and present their proposed study in a seminar format. Students in NRES399 are required to attend the poster session and senior thesis oral presentations. Prerequisites: NRES199 or USEM101 and NRES299.

NRES432

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: BIOL280, NRES333 and NRES345.

NRES439

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: NRES311 or NRES312 and NRES339.

NRES450

Apprenticeship in (Discipline)

(0,3) 1

Students will assist in classroom laboratories or operation of university facilities (e.g., CFRE Fish Hatchery and Mesocosm Room), under daily direction of faculty or staff and supervision of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the supervising faculty member.

NRES470

Restoration Ecology

(3,0) 3

This course will provide a broad overview of restoration of both terrestrial and aquatic ecosystems, including praries, wetlands, lakes, and streams. Through lectures, field trips, and case study discussions, students will be introduced to ecological principles and techniques used to restore and rehabilitate ecosystems. Students also will be involved in identifying, designing, and evaluating local restoration projects in conjunction with local resource agencies. Prerequisite: BIOL337.

NRES475

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: BIOL337 and Junior Standing.

NRES495

Senior Project

(0,6) 2

A practicum under the guidance of a faculty member. The student will conduct a scholarly project based on the proposal submitted by the student in BIOL399 (or an appropriate substitute). Prerequisite: BIOL399.

NRES497

Experiential Learning Project

3

A full semester/summer practicum experience. Students will develop work goals, responsibilities, and outcomes with their agency supervisor and faculty mentor. Students will prepare formal communication components (workshop or oral presentation and a poster). The experience should be 12 weeks at 40 hours per week. Prerequisite: NRES398.

NRES499

Senior Capstone

(1,0) 1

Senior Capstone is required of all seniors majoring in conservation biology, environmental science, and fisheries and wildlife. Students will write a scholarly paper detailing their individual research or experiential learning project. An oral seminar and a poster presentation are also required components of this course. Students must attend the presentations of the other students enrolled in this course. Prerequisites: NRES495 or NRES497 or EVRN495.

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NSCI101

Great Lakes Region: Chemistry, Physics and other Laws of Nature

(3,2) 4

A survey of basic physical science principles emphasizing their applications in daily life. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

NSCI102

Great Lakes Region: Geology and Resources

(3,2) 4

A survey course to acquaint students with the major concepts and phenomena inherent in a study of geology with a focus and application to the Great Lakes region. It will also provide sufficient background for a better understanding of human relationships to the physical environment and resources with an emphasis on implications for the Great Lakes region. Prerequisite: None.

NSCI103

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.

NSCI104

Environmental Science Laboratory

(0,2) 1

Laboratory component of environmental science. Corequisite: NSCI103.

NSCI105

Physical Geography: Earth, Sun and Weather

(3,1) 3

Study of the physical properties of the earth's surface as they relate to weather and climate. Credit for both GEOG108 and NSCI105 not permitted.

NSCI107

Physical Geography: Landforms and Soils

(3,1) 3

Study of the physical properties of the earth's surface as they relate to landforms and soils. Credit for both GEOG106 and NSCI107 not permitted.

NSCI108

Science for Citizens

(3,2) 4

This course picks up where the Next Generation Science Standards (NGSS) for High School end. After a review of materials from NGSS, students will then delve deeper into major scientific topics to examine phenomena through traditional course work and laboratory exercises. This course is designed to provide a background in science that will allow individuals to continue to learn throughout life, evaluate general scientific information to make more informed decisions as a citizen, and promote participation in citizen science. Topics are introduced and then supported through review of current issues as popular news articles and books, social media trends, and proposed legislation. Students will read provided information and then evaluate the merits of scientific aspects based upon their knowledge of the subject matter gained from discussion and laboratory exercises. Prerequisite: MATH088 and ENGL110.

NSCI110

Introduction to Forensics

(3,2) 4

An applied introductory chemistry course introduces the world of forensics focusing on the aspects of chemistry used during an investigation. This unique general education class will incorporate a criminal justice and fire science perspective while providing an introduction to chemical principles. Attention will be given to developing critical thinking skills, understanding the scientific process and to making scientifically informed decisions about every day events. Pre- or co-requisite of MATH102 (or higher) or equivalent/satisfactory score on ACT, SAT or Placement Exam.

NSCI116

Introduction to Oceanography

(3,2) 4

A survey of the features, processes and evolution of Earth's ocean basins. The course will examine geological, physical, chemical and ecological aspects of oceanography with an emphasis on their interrelationships and their impact on humanity.

NSCI119

Descriptive Astronomy

(3,2) 4

Introductory course with a balanced, comprehensive account of contemporary astronomy with emphasis placed on the broad principles of astronomy rather than on a chronological or historical framework. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

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NURS211

Introduction to Professional Nursing

(3,0) 3

This course introduces the student to a theoretical foundation for professional nursing practice. It focuses on nursing's historical origin, and its development throughout the years to present. Concepts discussed include nursing and related theories, the nursing process, legal/ethical issues and other topics relevant to the practice of professional nursing. Prerequisite: permission of dean or instructor only.

NURS212

Health Appraisal

(2,6) 4

This course serves as an introduction to the nursing assessment and analysis component of the nursing process as a method of determining a well individual's health potential and status across the lifespan. Emphasis is on obtaining and documenting a health history, performing a nursing assessment and beginning to formulate a nursing diagnosis. Prerequisite: permission of dean or instructor only.

NURS213

Fundamentals of Nursing

(3,9) 6

This course provides a theoretical and clinical foundation upon which science is applied to clients experiencing common health stressors. Emphasis is placed upon collecting relevant data, formulating nursing diagnosis based on the data, implementation of both appropriate nursing interventions and related psychomotor nursing skills. Responsibilities as a health team member who displays caring behaviors and as a self-directed learner are also considered. Prerequisites: NURS211, NURS212. Pre- or corequisite: HLTH208, HLTH209, HLTH232, and BIOL223 or BIOL204.

NURS290

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.

NURS325

Nursing of Childbearing Families

(3,6) 5

Theoretical and clinical foundation for application of the nursing process in caring for childbearing families. Focus on: norms and complications of the childbirth experience with application of strategies to promote health and prevent complications related to pregnancy and childbirth. Prerequisite: NURS327. Corequisite: NURS326. Pre-or Corequisite: NURS/HLTH328.

NURS326

Nursing of Children and Families

(3,6) 5

Theoretical and clinical foundation for application of nursing process in caring for children and their families. Emphasis: health promotion, maintenance and restoration with application of principles and concepts related to growth and development, family theory, environmental influences on health and the nursing process. Prerequisite: NURS327; Corequisite: NURS325. Pre- or Corequisite: NURS/HLTH328.

NURS327

Adult Nursing I

(4,12) 8

Combined class and clinical experiences that apply the concepts of nursing and related theories to the care of the adult client with common health alterations in each of the basic human need areas. Nursing clinical experiences are in primary, secondary, and tertiary care settings for adult clients. Prerequisites: NURS213, HLTH209 and BIOL223 or BIOL204.

NURS328

Multicultural Approaches to Health Care

(3,0) 3

This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations, assessment techniques and alternative/complementary health practices. Prerequisite: SOCY101. Also listed as HLTH328.

NURS352

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. Prerequisites: PSYC155 and junior level status. Also listed as HLTH352.

NURS360

Professional Nursing Concepts

(4,0) 4

This four-credit course is the transitional course into professional nursing for the practicing registered nurse. Course emphasis: concepts of professional nursing, nursing and other related theories, health promotion, using research in nursing practice, impact of technology on profession, and economics related to nursing

care. Includes: the history of nursing, ethics, culture, and critical thinking are interwoven in the exploration of concepts. Prerequisite: Permission of dean or instructor only. For Post Licensure majors (RN-BSN) only.

NURS363

Individual/Family Assessment

(3,6) 5 5

This course is directed toward the application of theoretical Nursing concepts related to assessment of the individual and family health, development, structure and dynamics through the lifespan. Emphasis is on the principles of factors influencing family health care, comprehensive health history taking, physical assessment skills, and analysis of data to determine an individual's or family's health status. For Post Licensure majors (RN-BSN) only. Pre- or corequisite: NURS360.

NURS365

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. For Post Licensure majors (RN-BSN) only. Pre- or corequisites: SOCY101 and NURS360.

NURS431

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: HLTH328, NURS325, NURS327, NURS326. Corequisite: NURS435.

NURS432

Nursing of Populations

(3,6) 5

This is a theory and clinical course applying the nursing process to populations. Content includes application of public health nursing principles, levels of prevention, epidemiology and health education. Expands the role of the nurse as a teacher, collaborator and advocate. Examines the effect of health care delivery trends and issues on the health of populations. Prerequisites: For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326. Post-licensure Majors (RN-BSN): NURS363 and NURS365.

NURS433

Community Mental Health Nursing

(3,6) 5

Theoretical and clinical foundation in mental health nursing. Emphasis is on the use of the therapeutic relationship and communication skills to help clients cope

with stressors of life experiences. Nursing, human needs theory, stress adaptation theory are used to help the client achieve optimum level of mental health. Clinical experiences are provided in both the community and in the acute care settings. Prerequisites: HLTH328, NURS325, NURS326, NURS327.

NURS434

Nursing Research

(3,0) 3

This course develops appraisal skills of nursing and related research. It will enable students to think critically and ethically about providing the best possible care to clients based on evidence. Assignments and class discussion emphasize application of current research to a variety of dimensions including human beings, health, nursing and environment. Co-requisite: NURS327, MATH207 or PSYC210.

NURS435

Management in Nursing

(4,0) 4

Analysis of the leadership and management roles in professional nursing; focus is leadership/management theories basic to the planning, organizing, directing and controlling of nursing services in health care settings. Includes concepts of nursing model integration in management, communications, decision making and conflict resolution, resource management, legal and ethical responsibilities, employee relations, health care system design, systems appraisal, and case management. Students will formulate a personal nursing management/leadership philosophy. For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326, Corequisite NURS431.

NURS436

Contemporary Issues in Nursing

(2,0) 2

Course analyzes contemporary and future issues involving the professional nurse. The course further explores role socialization from nursing student to BSN-prepared nurse. Course reviews the legal responsibilities and professional regulation of nursing practice. Selected social, ethical, political, economic and legal issues will be examined. Prerequisite: For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326. For Post-licensure Majors (RN-BSN): NURS360.

NURS437

Nursing Leadership and Issues

(2,3)3 3

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 student planning his/her experiences with the faculty member and preceptor. Integration of ethics, research, change, caring, advocacy, and approaches to ensure quality care in nursing practice are expected.

NURS490

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.

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OFFC112

Keyboard Skillbuilding

(0,2) 1

Improvement of keyboarding speed and accuracy (both alphabetic and numeric), using developmental programs and keyboarding drills. May be repeated once.

OFFC119

Computerized Accounting Procedures

(4,0) 4

Accounting experiences common to small business or professional offices; development of basic principles underlying accounting procedures; techniques and records used in analyzing, classifying, recording and summarizing transactions; accounting procedures applied to a computer simulation for small businesses. May not be taken for credit following successful completion of ACTG132.

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PHIL204

Introduction to Philosophy

(3,0) 3

A study of philosophy with the aims to become wiser and live better. Through a host of immersive assignments, such as "live like a philosopher", students will experience first-hand the philosophies that just might rescue them from the traps of distraction, indecision, and disconnect. A large part of this course will be devoted to helping students articulate and defend their own visions for what makes a meaningful life. The course will impart wise and practical guidance from some of the greatest representatives of the philosophical tradition.

PHIL205

Logic

(3,0) 3

An introductory course in logic; study of the role of logical methods of the rational approach to knowledge; consideration of such concepts as definition, implication, inference, syllogism, deduction. Prerequisite: ENGL111.

PHIL210

Existentialism

(3,0) 3

Survey of existentialist literature from a variety of authors, periods and genres: Dostoevsky, Kierkegaard, Nietzsche, Heidegger, Jaspers, Sartre, Camus, de Beauvoir, Rilke, and others. Texts include philosophical prose, biblical exegesis,

fiction, drama and poetry, containing many of the definitive expressions of such current literary, philosophical and artistic themes as the varieties and sources of alienation, the creation and definition of the self, the nature and rationality of religious faith, moral responses to insoluble dilemmas, and potential individual responses to an absurd and inhuman world. Prerequisite: ENGL111.

PHIL215

Ethical Theory and Practice

(3,0) 3

Certain actions seem to be demanded by morality and certain actions seem to be prohibited by morality. In addition, there are many actions in which we have difficulty extending praise or blame. The study of Ethical Theory constitutes the study of philosophers' evaluations of behavior, character, and even the term of such evaluation (e.g., 'goodness,' 'value,' 'right,' and 'obligation'). This course will examine the ethical theories of philosophers such as Plato, Aristotle, Kant, Bentham, and Mill as well as contemporary applications of ethical theories. Topics such as terrorism, ethics in the professions, the environment, and religiously motivated behavior are timely and appropriate topics for evaluating the connections between moral reasoning and our modes of living. Prerequisite: ENGL111.

PHIL220

Biomedical Ethics

(3,0) 3

Survey of contemporary issues in medical and research ethics. Topics could include abortion, euthanasia, genetic testing, reproductive technologies, doctor-patient relationships, conflicting imperatives on confidentiality and disclosure, social consequences of drug development and widespread use, concepts of health and disease, gender and medical practice, the distribution of medical resources, and the medicalization of various forms of social deviance. Prerequisite: ENGL111.

PHIL250

Philosophy of Religion

(3,0) 3

This course examines the rational foundations for believing in and worshipping a Deity. In particular we will focus our inquiry on the God of Judaism, Christianity, and Islam who is thought to possess the qualities of omniscience, omnipotence, and beneficence. (We will, however, exposit the deities Hinduism and Buddhism to put our study in context.) Can we prove that God exists? What might we owe God? How can we explain the existence of evil even though God is thought to be wholly good? What place does religion have in a pluralistic society? The history of Western Philosophy is in large part unified by the common pursuit of such questions. Not only are the questions themselves fascinating and perplexing, but also, they have been answered in inventive ways by many extraordinary thinkers. The Philosophy of Religion is, therefore, a continuing search that has as much to do with human ingenuity as it does about God. Prerequisite: ENGL111.

PHIL302

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: ENGL111.

PHIL305
Modern and Contemporary Philosophy
(3,0) 3

Students will become familiar with the arguments and ideas that have sought to describe and, in many cases, to shape the consciousness of the modern and postmodern epochs. From Descartes to Kant, modern philosophy experimented with new ways to understand existence, identity, causality, and God. From Russell to Williams, contemporary philosophers grappled with new ways to understand logic, ethics, gender, and subjective experience. Students will learn to make connections between their own ways of experiencing the world and the sometimes subtle ways that philosophers since Descartes have influenced their understanding of their experiences. Prerequisite: ENGL111.

PHIL490
Directed Study in Philosophy
(1-4) 1-4

A study of philosophically engaging topic, chosen by instructor and student. Essays and tutorial session required. Prerequisites: At least six credits of philosophy courses, evidence that the student is capable of carrying out independent study, and approval of instructor. This course may be repeated for up to six credits, or three times, whichever occurs first.

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PHYS221
Principles of Physics I
(3,2) 4

General principles of rigid body mechanics (kinematics, forces, laws of motion, energy, momentum, rotation) and fluid mechanics. Prerequisites: Two years of high school algebra and one-half year of high school trigonometry with a math ACT of 28 or higher, New SAT Section is 660 or higher, New SAT Test is 33 or higher, or Old SAT Section is 640 or higher; or MATH111.

PHYS222
Principles of Physics II
(3,2) 4

Thermodynamics, vibrations and waves, electricity and magnetism, light, optics, relativity and modern physics. Prerequisite: PHYS221 with a grade of C or better.

PHYS224
Topics in Physics for Electrical Technology
(3,2) 4

Vibrations and waves, optics, relativity and modern physics (identical to PHYS222). Electricity and magnetism topics of particular relevance to electronic engineering technology. Prerequisites: PHYS221 with a grade of C or better, sophomore standing in EET course work, and MATH140 (which may be taken concurrently).

PHYS231

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: MATH151.

PHYS232

Applied Physics for Engineers and Scientists II

(3,2) 4

Continuation of PHYS231. Introduction to thermal physics, electricity, magnetism, electromagnetic waves, and optics. Prerequisite: PHYS231 with a grade of C or better.

PHYS290

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 chair. This course may be repeated for a maximum of eight credits. Prerequisites: Sophomore standing or higher and permission of instructor.

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PNUR102

Drugs and Dosages

(2,3) 3

This course introduces the practical nursing student to dosage calculations and medication administration. Calculations for conversion between systems of measurement are covered. The seven rights of medication administration are emphasized. Categories of drugs, their actions, side effects and nursing implications are covered. Prerequisite: MATH087 or equivalent placement score.

PNUR104

Introduction to Practical Nursing

(2,0) 2

Introduction to Practical Nursing provides a theoretical foundation for practicing nursing care of adults within a variety of health care settings. Concepts such as practical nursing philosophy and conceptual framework, history of nursing, nursing's Code of Ethics, the role of nursing in the health care system with emphasis on the practical nurse, the nursing process, therapeutic communication, culture, and critical thinking are explored. Prerequisites: Permission of Chair of Nursing or Instructor only.

PNUR107

Understanding Clinical Nutrition Lab for Practical Nurses

(0,3) 1

This lab course is focused on the knowledge and skill practical nurses need to support the nutritional needs of people across the lifespan with a special emphasis on individuals with limited ability to meet their own nutritional needs. Strategies of providing nutrition associated with self care deficits are covered, including effective oral feeding techniques, use of thickeners or texture to enhance swallowing, tube feeding, and the principles of enteric feeding, elemental diets, IV therapy and hyperalimentation are presented. Prerequisites: BIOL105 or BIOL122 passed with a C or better; HLTH208 passed with a C or better or corequisite of HLTH208.

PNUR113

Fundamentals of Practical Nursing

(4,9) 7

Students will learn the basic skills necessary to provide safe, competent care of the acute and chronically ill residents in Long Term Care/Nursing Home settings. Focus will be on the care of the elderly. Through lecture, lab simulations, and actual clinical experiences the student will learn basic nursing skills; infection control; safety/emergency procedures; nursing interventions and apply communication/interpersonal skills to promote resident's independence; to respect residents' rights; and to recognize abnormal changes in the resident. Prerequisites: Co-requisite BIOL105 or Prerequisite BIOL122 with a grade of C or better.

PNUR201

Medical Surgical Practical Nursing

(6,12) 10

This course focuses on nursing care of the adult client experiencing common stressors affecting health. Emphasis is placed on the administration of medications, collection and communication of relevant data, and implementation of basic nursing interventions. Prerequisites: PNUR102, PNUR104, PNUR113, all with a grade of C or better. Co-requisites: HLTH208, PNUR107.

PNUR202

Legal/Ethical Issues in Practical Nursing

(2,0) 2

This course focuses on the ethical and legal responsibilities and issues related to the safe practice of practical nursing. The role of the practical nurse and within the health care community is emphasized. Licensure responsibilities, career advancement and lifelong learning needs are incorporated. Prerequisite: PNUR201 with a grade of C or better.

PNUR205

Maternal/Child Practical Nursing

(3,6) 5

This course explores the family as the client beginning with the reproductive cycle, conception, fetal development, labor, birth and the care of the postpartum woman and newborn. At risk pregnancies and complications are identified. The course continues to address normal growth and development, immunizations, health risk factors, well-defined health problems common to children and their response to illness. Prerequisite: PNUR107, PNUR201, HLTH208, all with a grade of C or better.

PNUR206

Ambulatory Care Practical Nursing

(3,6) 5

The efficiency of a health care agency, and the quality of health care provided, depends in large part on the staff members who supplement and support the role of the provider for provision of quality patient care services. This course stresses strong interprofessional communication skills, organizational abilities, computer knowledge, and excellent human relationship skills in the ambulatory setting across the lifespan. Prerequisite: PNUR107, PNUR201, HLTH208, all with a C or better.

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POLI101

Freshman Seminar

(2,0) 2

The focus of this course will be on academic skills, orientation to Lake Superior State University and Sault Ste. Marie, and introduction to the field of Political Science.

POLI110

Introduction to American Government and Politics

(4,0) 4

An introductory survey of American national government and politics.

POLI120

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.

POLI130

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.

POLI160

Introduction to Canadian Government and Politics

(3,0) 3

An introductory survey of Canadian government and politics.

POLI201

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.

POLI202

Sophomore Seminar on Political Research and Statistics

(3,0) 3

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. Prerequisite: MATH088 or equivalent/satisfactory score on ACT, SAT, or Placement Exam.

POLI222

Introduction to the Legal Profession

(3,0) 3

Students will become familiar with how the law functions, how the legal profession has evolved, how to prepare for and apply to law school, how law schools differ from college (including development of various methods and techniques to study the law). In addition, students will become aware of the legal profession and its demands, opportunities, options and trends. Prerequisites: POLI110, sophomore standing and/or permission of instructor. Also listed as LAWS222.

POLI234

Women and Politics Around the World

(4,0) 4

This course will examine a broad range of issues involving gender and politics: the political participation of women, the history of women's movements, voting differences, political divisions among women, and the present political status of women in the United States and globally.

POLI241

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.

POLI245

United Nations and World Politics

(3,0) 3

This course provides a general overview of the United Nations and how world politics both influences, and is influenced by, the actions of the United Nations. Prerequisite: POLI241 or permission of instructor.

POLI246

Model United Nations

(0,2) 1

This course is the experiential learning component of POLI245 United Nations and World Politics and requires participation in the Model United Nations program, in which students represent specific countries and become familiar with their background and politics. Prerequisite: Permission of instructor. Corequisite: POLI245, the first time. This course may be repeated for credit for a maximum of 3 credits without retaking POLI245.

POLI290

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.

POLI301

Policy Analysis and Evaluation

(3,0) 3

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.

POLI303

Junior Seminar

(4,0) 4

A junior seminar required of all political science majors. The course examines the history of political science, careers in political science, and reviews contemporary approaches and recent research. Students prepare a research proposal to be carried out in POLI404 and POLI405. Prerequisites: Political science major and junior standing.

POLI325

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: POLI110 and junior standing.

POLI331

Comparative Politics of Europe

(3,0) 3

An examination of institutions and politics in major European states, such as Great Britain, France, Germany and Russia, and the European Union. Prerequisite: POLI110 or POLI160.

POLI334**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.

POLI342**International Environmental Policy****(3,0) 3**

This course is intended to familiarize students with the efforts of the international community to establish policy guidelines designed to begin the regulation of the global environment. The course covers basic concepts to international relations necessary to understand the general workings of the nation-state system. It then begins an exploration of significant historical international environmental issues and the ways in which these have been dealt with by the international community. The course further challenges students by investigating various alternative solutions for solving the myriad of global environmental problems faced by all of humankind in the new century.

POLI351**Political Philosophy****(4,0) 4**

An examination of the seminal authors and theories of political philosophy. Major philosophers include Plato, Aristotle, Cicero, Augustine, Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Burke, Mill, Hegel, Marx, Wollstonecraft, Arendt and Rawls. Major ideologies include conservatism, liberalism, socialism, communism, anarchism, fascism, and feminism. Prerequisites: POLI110 and junior or senior standing; or permission of instructor.

POLI367**Congress and the Presidency****(4,0) 4**

Examines the legislative and executive branches of government as parts of the policy-making process. Prerequisite: POLI110.

POLI401**Principles of Public Administration****(3,0) 3**

Examines major issues and methods in public administration. Analysis of specific public policy issues. Prerequisite: Advanced standing.

POLI404**Senior Seminar I****(2,0) 2**

Implementation of project proposal begun in POLI303. Student will make weekly reports on progress of methodology and data collection to faculty and class. Prerequisite: POLI303.

POLI405

Senior Seminar II

(2,0) 2

Completion of the project begun in POLI404. Students will make oral presentations of their project results at the end of the course to other students, faculty and invited guests. Prerequisite: POLI404.

POLI411

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: POLI110.

POLI413

The International Legal Order

(4,0) 4

The primary objective of this course is to explore the reasons for the emergence of the international legal order as a crucial constraint on the freedom of action of national governments; that is, to understand the impact of the international legal order on contemporary international relations. It also seeks to introduce the substance of international law in selected issue-areas, and to provide an overview of the nature of international legal reasoning. Throughout the course, we shall emphasize the interaction of law and politics, and of national and transnational legal processes. Prerequisite: POLI110.

POLI420

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: POLI110 or 160, and junior standing, as well as either ECON201 or 202. POLI241 recommended but not required.

POLI463

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.

POLI467

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:

POLI120 or its equivalent.

POLI490

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.

POLI499

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.

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PSYC101

Introduction to Psychological Science

(3,0) 3

A general introduction to the systematic study of behavior and mental processes in humans and animals.

PSYC107

Positive Psychology

(3,0) 3

An overview of Positive Psychology - a field of psychology that applies behavioral science methods to improving mental health, life satisfaction and biosychosocial well being. Prerequisites: Admission to the Honors Program and Permission of the Director of the Honors Program.

PSYC155

Lifespan Development

(3,0) 3

Human psychological development from birth to death. This course covers social, emotional and intellectual development across the lifespan.

PSYC199

Freshman Seminar in Behavioral Science

(2,0) 2

An introduction to the university including academic policies and procedures, campus resources, and requirements for the major. Instruction in time

management, study skills, and test-taking skills will be provided. Careers and speciality areas within behavioral science will be explored. An introduction to behavioral science epistemology including the process of knowledge generation and comparison of behavioral science with other core disciplines such as the physical sciences and humanities with respect to foundations, scope and validity of knowledge. An examination of ethical theories and professional codes relevant to the behavioral sciences.

PSYC201

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.

PSYC210

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. MATH207 may be used in place of PSYC210 to meet the psychology major and minor requirements. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

PSYC212

Experimental Psychology

(3,2) 4

An examination of the basic research methods employed in the social sciences with emphasis on the experiment. Topics: Epistemology, laboratory experiments, field experiments, survey construction, correlational research. Students will each participate as a subject and an experimenter, collect data, analyze data, and write a laboratory report according to the editorial style of the American Psychological Association. Laboratory assignments require use of computer applications for experimental purposes, including running experiments and collecting data, analyzing results, creation of appropriate figures, and communication of results in text and oral presentations with slides. Prerequisites: PSYC101 and either PSYC210 or MATH207.

PSYC217

Social Psychology

(3,0) 3

Topics include attitude formation and change, interpersonal attraction, aggression, altruism, conformity and environmental psychology.

PSYC240

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.

PSYC259

Abnormal Psychology

(3,0) 3

This course is a systematic investigation of the identification, dynamics and treatment of deviant and maladaptive behavior.

PSYC265

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: PSYC101, 155 or EDUC150.

PSYC291

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: PSYC201.

PSYC301

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: PSYC155 or 265.

PSYC305

Psychology Research Practicum

(0,3) 3

Research in psychology under the direct supervision of individual faculty members. Recommended for students considering graduate school. Prerequisite: Minimum grade of C in PSYC210 and PSYC212, AND permission of instructor. May be repeated once for a max of 6 credits.

PSYC306

Applied Psychology Practicum

(0,3) 3

Students are provided practical experience in the use of psychological theory and research in an applied setting. Prerequisite: SOWK250 (minimum 3 credits), a minimum grade of B in PSYC201 AND permission of instructor. May be repeated for a max of 6 credits.

PSYC311

Learning and Motivation

(3,3) 4

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. The laboratory will provide undergraduate research experiences that are closely related to the lecture content using live animal behavior experiments and/or computer simulations, data collections, analysis, and reporting of results in APA style. Prerequisite: PSYC212.

PSYC357

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.

PSYC385

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.

PSYC391

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: PSYC101 and junior standing.

PSYC396

Tests and Measurements

(3,0) 3

This course has two parts. Part one covers measurement theory, the properties of the normal curve, reliability, validity and measurement statistics. Part two reviews major tests used by researchers, educators, clinicians, counselors, addictions counselors and industrial psychologists. Prerequisite: SOCY302 or PSYC210 or MATH207 or equivalent.

PSYC399

Junior Seminar in Psychological Science

(3,0) 3

Students develop a senior research topic through the review of scholarly literature and weekly meetings with psychology faculty and students engaged in senior research under the supervision of that faculty member. Key elements of the research process will be strengthened including experimental design, statistical analysis, and scientific communications. Different career paths in psychology will be explored along with guidance in pursuing graduate school. At the conclusion of this course, students will obtain approval with the faculty member who will serve as their senior research project advisor and declare which

psychology track they will complete for their degree. Prerequisites: Minimum grade of C in PSYC210 and PSYC212.

PSYC456

History and Systems of Psychology

(3,0) 3

An examination of persons, events, theories, schools and systems that influenced and define contemporary psychology. Prerequisite: PSYC311.

PSYC457

Cognition

(3,3) 4

A survey of recent findings on cognition in humans. Topics include learning, memory, problem solving, language and complex perceptual processes. The laboratory will provide undergraduate research experiences that are closely related to the lecture content consisting of experiments and/or computer simulations, data collection, analysis, and reporting of results in APA style. Prerequisite: PSYC212 and Junior Standing.

PSYC459

Behavioral Neuroscience

(3,3) 4

This course is an introduction to the neurophysiological structures of the brain and their functions as regulators of animal and human behavior. Experiential learning activities related to the lecture content consisting of experimental techniques, computer simulations, data collection, analysis, and reporting of results in APA style are included. Prerequisite: PSYC212 and Junior Standing.

PSYC490

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.

PSYC494

Senior Research Practicum I

(0,2) 2

A practicum under the guidance of a faculty mentor. The student will complete the senior research project proposal and secure approval from the appropriate ethics board/committee. Prerequisite: PSYC399 with a B- or better grade. Co-requisite PSYC499 AND permission of instructor.

PSYC495

Senior Research Practicum II

(0,3) 3

A practicum under the guidance of a faculty mentor. The student will conduct an empirical research project based on the proposal submitted by the student in

PSYC494. Prerequisite: PSYC494, PSYC499 and permission of instructor.

PSYC498

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: PSYC212, PSYC311 and either PSYC210 or MATH207.

PSYC499

Senior Seminar in Psychological Science

(1,0) 1

Issues in the development and implementation of an empirical research project, including design, statistical analyses, ethical review, and modes of presentation. Prerequisite: PSYC399 with a B- or better grade. Co-requisite: PSYC494 AND permission of instructor.

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READ091

Preparation for College Reading

(3,0) 3

Introduces reading strategies and study skills necessary for college success. Through integration of acquired knowledge and reading practice, students will develop strategies for vocabulary expansion, comprehension, critical thinking, and increase reading rate. Students must earn a minimum grade of C to pass the course. Credit received in this course does not count toward graduation. Prerequisites: none.

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RECA103

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.

RECA105

Bowling

(0,2) 1

This course will emphasize delivery, scoring etiquette, strategies for converting spares, spot vs. pin bowling, and learning about handicapping. The course will involve theory as well as practical experience.

RECA106

Backpacking

(0,2) 1

Introduction to equipment, safety precautions, environmental concerns and skills needed to successfully backpack. Class will experience a weekend backpacking trip.

RECA107

Canoe Techniques

(0,2) 1

This course will introduce the student to the basic strokes and canoe safety associated with flat water canoeing.

RECA109

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.

RECA110

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.

RECA114

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.

RECA115

Tai Chi

(0,2) 1

Tai Chi is a soft martial art that promotes a long life and good health while improving range of motion, balance, centeredness, and a quiet mind. The Tai Chi 24 Forms Set is the most practiced style throughout the world and will be taught in this class along with utilizing Chi Kung for warm up and cool down exercises.

RECA116

Kickboxing

(0,2) 1

Kickboxing combines martial arts techniques with cardio conditioning as a high energy, total body workout. Course may be repeated twice for credit.

RECA119

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.

RECA120

Downhill Skiing and Snowboarding

(0,2) 1

The students will be provided with an opportunity to learn the basic fundamentals of downhill skiing and snowboarding and to gain sufficient knowledge of the sport so they may continue to enjoy and improve for the rest of their lives.

RECA125

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.

RECA127

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.

RECA129

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.

RECA130

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.

RECA150

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.

RECA151

Jogging and Walking for Fitness

(0,2) 1

Introduction to jogging and walking as means of developing physical and mental fitness. Development of an activity ideal for lifetime leisure involvement.

RECA153

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.

RECA154

Yoga

(0,2) 1

This course will cover the history, theory principles and benefits contraindications and methods of yoga as well as the application of yoga asanas, breathing techniques and relaxation method.

RECA173

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.

RECA174

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.

RECA175

Step Aerobics

(0,2) 1

A step workout is a high-intensity, low-impact aerobic workout for all fitness

levels. The principle is to step up and down on a platform while simultaneously performing upper-body exercises. The program will work every major muscle group in the lower body, while training the upper body.

RECA180

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.

RECA190

Aquatic Fitness

(0,2) 1

This course will introduce students to developing cardiovascular fitness, muscular strength and muscular endurance through aquatic activities as an alternative to weight bearing forms of exercise. Water related exercises and activities will be utilized to improve physical fitness. Individuals of all fitness levels will enjoy getting fit in the water.

RECA194

Scuba

(0,2) 1

This course is designed to introduce the student to the appropriate and safe use of self-contained underwater breathing apparatus.

RECA195

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.

RECA210

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, RECA211. Prerequisite: Red Cross intermediate swimming certificate or equivalent skills.

RECA211

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.

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RECS101

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.

RECS212

Instructional Methods in Adapted Aquatics

(1,2) 2 Alternate Years

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.

RECS220

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: RECS101 and 105.

RECS262

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: RECS105.

RECS280

Readiness in Games, Activities and Sports

(3,0) 3 Alternate Years

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.

RECS295

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

RECS360

Facilitation and Interpretation Techniques

(2,2) 3

This course is designed to serve recreation students who are interested in facilitating outdoor or adventure based programs, and/or become interpreters in an outdoor or parks environment. The course will expose the student to a wide variety of facilitation/interpretation methodologies. The student will be involved in both learning and practicing these techniques. Examples of these techniques would include such things as utilization of the metaphor, and Haiku. This class will also travel to different outdoor facilities, such as outdoor education centers and state historical sites. This will enable the students to facilitate experiences in an environment unavailable at LSSU (example, a high ropes course) and to interface with individuals who provide facilitation and interpretation as a part of their professional responsibilities. Prerequisites: RECS105, RECS262.

RECS362

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: RECS101 and RECS262 or NSCI103 and EVRN131.

RECS365

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: RECS262.

RECS367

National Parks, National Monuments and National Culture

(3,0) 3 Alternate years

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.

RECS390

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.

RECS397

Recreation Studies Junior Research Seminar

(1,0) 1

Introduces the concepts, purpose, methods and function of scholarly research and scientific inquiry. Prerequisites: junior standing, and majoring in recreation management or parks and recreation.

RECS435

Research in Recreation and Leisure Sciences

(3,0) 3

This course will serve as a culminating educational component for the student majoring in therapeutic recreation and recreation management. The course will focus in part on current problems and issues in therapeutic recreation and will also have a major emphasis on developing an original research project. Prerequisites: RECS397 and MATH207, or PSYC210 or comparable statistics course.

RECS437

Recreation Studies Senior Research Seminar

(1,0) 1

The focus of this course is to provide instruction and experience relative to data analysis and presentation methodologies affiliated with conducting research. The students will apply the procedures and methodologies discussed in class directly to their research projects. Prerequisite: RECS435.

RECS450

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: EXER262 or RECS101 and junior status. Also listed as EXER450.

RECS481

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.

RECS492

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.

RECS496

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.

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SERV100

University Success Strategies

(1,0) 1

Based on assessment of student inventories, students are provided the opportunity to improve their study skills, methods of time management, modes of memorization, note-taking techniques, and university examination preparation. Emphasis is placed on making the transition to university life by focusing on various academic strategies and exposing students to basic information on LSSU programs, policies and procedures.

SERV125

Career Planning and Decision Making

(1,1) 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.

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SOCY101

Introduction to Sociology

(4,0) 4

This course introduces students to core sociological theorists and perspectives, including functionalism, conflict and symbolic interactionism, and familiarizes them with basic research designs, terminology and findings within the context of collective behavior and social movements.

SOCY102

Social Problems

(4,0) 4

An introductory to descriptions, theories, proposed solutions, and research methods for a variety of social problems including inequality, poverty, unemployment, environmental issues, family problems, and violence.

SOCY103

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.

SOCY113

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.

SOCY214

Criminology

(3,0) 3

A study of the nature and causes of crime and the results of various attempts to reduce crime.

SOCY227

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.

SOCY238

Social Psychology

(3,2) 4

This course examines the social nature of humans, exploring both the influence of social structures upon behavior and the process by which people create social structures; explains symbolic interactionist theory; and introduces qualitative research methods which are applied in a field study conducted by the student. Prerequisite: SOCY101 with a grade of C or better, ENGL110, with a grade of C or better.

SOCY266

Medical Sociology

(4, 0) 4

The study of social distributions and social determinants of health, as well as the societal conditions that affect health. Recommended course: SOCY101 or SOCY102.

SOCY301

Social Research Methods

(3,0) 3

Identification of research problems, concepts and theoretically derived hypothesis; Review of principle methods of experimental design, survey and field research and unobtrusive analysis. Prerequisite: Junior Status or Permission of Instructor.

SOCY302

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

SOCY310

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. Prerequisite: SOCY238.

SOCY311

Contemporary Sociological Theory

(3,0) 3

Critical analysis of major sociological theories of the 20th and 21st centuries. Prerequisite: SOCY238.

SOCY314

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.

SOCY321

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.

SOCY326

The Sociology of Aging and the Aged

(3,0) 3

Examines aging and the aged in American society from the sociological perspective.

SOCY327

The Sociology of Dying and Death

(3,0) 3

Sociological examination of dying and death.

SOCY338

Deviance

(3,0) 3

Analysis of causes and consequences of deviant behavior and the development of deviant subcultures; examination of various societal responses to control deviance and their effectiveness. Prerequisite: Junior standing or three hours of sociology and/or human services.

SOCY339

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.

SOCY399

Sociology Junior Seminar

(1,0) 1

Students will develop a proposal for their senior project through lecture and discussion, mentoring by seniors, and collaboration with colleagues. Prerequisites: SOCY238, 304, 302, and SOCY/SOWK202.

SOCY401

Sociology Seminar I

(1,0) 1

Meetings provide instruction for the senior project covering locating sources, moving from theory to research, constructing a review of literature and designing methods. Prerequisite: SOCY399.

SOCY402

Sociology Seminar II

(1,0) 1

Class meetings provide instruction for the senior project, focusing upon designing

and conducting research, analyzing data, completing final report, preparing poster and formal presentation. Prerequisites: SOCY401 and 495.

SOCY420

Sociology of Cannabis

(3,0) 3

This course focuses on the cultural importance, changes in use, and reactions to various forms of marijuana, as well as the differential effects of prohibition and legalization on both the individual and various social institutions. Prerequisite: Junior Status or permission of instructor. This course focuses on the cultural importance, changes in use, and reactions to various forms of marijuana, as well as the differential effects of prohibition and legalization on both the individual and various social institutions.

SOCY490

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.

SOCY495

Senior Project I

(0,6) 2

In this practicum, under the guidance of a Sociology faculty member, the student prepares a review of literature and research plan for an independent research project in Sociology. Prerequisite: SOCY399.

SOCY496

Senior Project II

(0,6) 2

In this practicum, under the guidance of a Sociology faculty member, the student refines the research plan prepared in SOCY495, gathers data, completes an analysis, writes up the findings, presents the study in a public forum and prepares a poster. Prerequisites: SOCY401 and 495.

SOCY497

Community Action Project

(1,6) 3

This is an applied course in which, under the guidance of a sociology faculty member, the student carries out a practical project designed to address a community need identified in and elaborated upon in SOCY495. Prerequisites: SOCY401 and SOCY495.

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SOWK110

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.).

SOWK204

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. Prerequisite or Corequisite: BIOL105 or equivalent.

SOWK250

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. Credit/No credit grade.

SOWK292

Substance Abuse: Prevention and Treatment

(3,0) 3

This course examines current prevention, detection and treatment approaches for substance abuse and addiction.

SOWK301

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: LAWS202 or junior standing. Also listed as LAWS301.

SOWK305

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: HIST230 and NATV230. Also listed as LAWS305/NATV305.

SOWK310**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: PSYC201.

SOWK341**Addiction****(3,0) 3**

Study of the nature of drug dependency with emphasis on social and cultural variations in patterns and consequences of use. Prerequisites: either junior standing or sophomore standing together with HMSV204.

SOWK344**Social Welfare Systems****(3,0) 3**

Analysis of social welfare systems in the U.S. including history, philosophy, cross-cultural comparisons, and current issues. Prerequisites: Junior standing or completion of SOWK110 or completion of HMSV204

SOWK480**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.

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SPAN161**First-Year Spanish I****(4,1) 4 Fall**

Introduction to basic Spanish grammar and vocabulary, designed to acquaint the student with the essentials of oral and written Spanish.

SPAN162**First-Year Spanish II****(4,1) 4 Spring**

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: SPAN161 or equivalent.

SPAN165**Spanish for Public Safety****(4,1) 4 On Demand**

A continuation of SPAN161, with emphasis on vocabulary relevant to work in criminal justice. Prerequisite: SPAN161 or equivalent.

SPAN261

Second-Year Spanish I

(3,1) 3 Fall

Intensive review of grammar and further vocabulary development. Emphasis on composition and conversation based on the reading of Spanish texts and newspapers. Prerequisite: SPAN162 or equivalent.

SPAN262

Second-Year Spanish II

(3,1) 3 Spring

Acquisition of advanced skills in composition, grammar, reading and conversation, using media and readings related to the Hispanic world. Corequisite: SPAN262 or equivalent.

SPAN301

Study Abroad

(8,0) 8 Summer

Students admitted by the faculty of the Spanish Department will take a variety of classes at an accredited institution in a Spanish-speaking country. Students will spend a minimum of 30 hours per week in class. They will also be required to visit sites for archaeological, historical and cultural importance. The students' work and progress will be monitored and evaluated by the LSSU Spanish Department in cooperation with the foreign institution. Prerequisite: Students must have completed a minimum of two courses of Spanish at LSSU and obtain the professor's permission. *Credit for this course may be applied to fulfill the requirements for a Spanish major or a Spanish minor. This course cannot be repeated.

SPAN361

Advanced Spanish Grammar

(3,0) 3

Acquisition of advanced skills in composition, grammar, reading and conversation, using media and readings related to the Hispanic world. Corequisite: SPAN262 or equivalent.

SPAN362

Advanced Spanish Composition

(3,0) 3

This course is designed to improve writing skills in Spanish through extensive and intensive reading of Spanish and Spanish-American fiction. Prerequisite: SPAN262. Corequisite: SPAN361.

SPAN368

Selected Topics in Conversation

(2,0) 2

Class assignments and readings provide the basis for in-class discussion at post-

intermediate level. Students will be given the opportunity to practice vocabulary and grammar structures in life-like situations and contexts. Prerequisites: SPAN361 and 362.

SPAN380

Survey of Spanish-American Literature I

(3,0) 3

Class is a survey course of Spanish-American literature from the Spanish Conquest to 1880. It will cover readings from diverse genres and periods, beginning with an examination of precolumbian indigenous texts and ending with an overview of the development of modernismo. Prerequisites: SPAN361 and 362.

SPAN381

Survey of Spanish-American Literature II

(3,0) 3

Elective survey course of Spanish-American literature from 1880 to present day. It will cover readings from diverse genres and periods, beginning with an examination of modernismo, and culminating with selections from prominent recent literary works. Prerequisites: SPAN361 and 362.

SPAN401

The Spanish Novel

(3,0) 3

The class will focus on the study of selected 19th and 20th Century Spanish peninsular novels. Theme and content of course may vary from semester to semester. With the instructor's permission, this course may be repeated, and students may acquire up to six hours of credit for SPAN401. Prerequisites: SPAN361 and 362.

SPAN402

The Spanish-American Novel

(3,0) 3

This class will focus on the study of selected Spanish-American novels. Theme and content of course may vary from semester to semester. With the instructor's permission, this course may be repeated, and students may acquire up to six hours of credit for SPAN402. Prerequisites: SPAN361 and 362.

SPAN410

Spanish-American Civilization

(3,0) 3

This course will focus on the study of the history and culture of Spanish-America. The textbook will be supplemented with additional collateral readings; students will prepare both oral and written reports in Spanish on various assigned topics throughout the semester. Prerequisites: SPAN361 and 362.

SPAN411

Spanish Civilization

(3,0) 3

This course will focus on the study of the history and culture of Spain. The textbook will be supplemented with additional collateral readings; students will prepare both oral and written reports in Spanish on various assigned topics throughout the semester. Prerequisites: SPAN361 and 362.

SPAN412

Hispanic Literature of the Southwest

(3,0) 3

This course will examine the post-WWII development of Chicano culture in the southwestern United States as reflected through literature and the fine arts. Students will read a broad spectrum of popular Mexican-American literary works from 1945 to present day. Prerequisites: SPAN361 and 362.

SPAN490

Topics in Hispanic Literature

(1-4,0) 1-4

The content of this elective course will vary from semester to semester. Students may repeat SPAN490 once, and in so doing, acquire up to six hours credit for their degree plan with this class. Areas of study will include, but not be limited to, specific genres, periods, authors and literary movements. Prerequisites: SPAN361 and 362.

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THEA112

Acting for Beginners

(2,2) 3

This course provides an exciting, fun, and safe environment to begin a college-level study of acting. These simple, doable acting techniques will help students express their ideas and thoughts more fully. Working to get students present in the moment, this course will introduce physically active games and exercises that activate all the actor's tools including breath, body, face, voice, and knees through releasing tension and embracing the imagination. Open to all majors.

THEA162

Practicum-Acting in Practice

(1,0) 1

Practicum provides practical experience in the work of the theatre artist by acting in a production of LSSU theatre or its equivalent in the community. Students will spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

THEA163

Practicum-Production Team

(1,0) 1

Practicum provides practical experience in assisting with the various non-performance production aspects associated with LSSU productions. Students are

expected to spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

THEA164

Practicum-Healthcare Simulation

(1,0) 1

Practicum provides practical experience in the work of the theatre artist in assisting LSSU's diverse healthcare programming. Students will receive acting training and 'act' in various real world scenarios for healthcare simulations associated with programs like, but not limited to, nursing and EMS training. Students will be expected to spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. This course is open to all students. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

THEA212

Improvisational Acting

(2,2) 3

No script. No lines. No set. Step outside the box and make the best of it! Improvisational acting gives students a creative opportunity to free the imagination, build self-confidence and let go. The course introduces the structure and training vital to successful improvisational theatre. Build ensemble, poise, and learn to trust yourself. Prerequisite: THEA112 or Permission of Instructor.

THEA251

Theatre History

(3,0) 3

This course delves into various historic and groundbreaking movements in theatre throughout time.

THEA309

Survey of Great Playwrights

(3,0) 3

This course is designed to study the best of the best playwrights in theatre history and the various theatrical genres and creative challenges involved in the production of their work. Prerequisite: THEA251 or Permission of Instructor.

THEA312

Acting Shakespeare

(3,0) 3

Shakespeare wrote his plays to be spoken - to be acted. This course will immerse the student in an exciting study of Shakespeare's language and its heightened structure so as to bring it to life. Prerequisite: THEA212 or Permission of Instructor.

THEA333

Play Analysis

(3,0) 3

This course will reveal techniques used by theatre artists to dissect plays so as to offer intelligent, creative, and dynamic productions by studying an exciting, diverse collection of plays. Prerequisite: THEA251 or Permission of Instructor.

THEA412

Acting Studio

(3,0) 3

Acting Studio deepens the study of the craft - providing technique to the more disciplined actor. The course explores the tools used to deliver actors to a technique that frees the self, imagination and sense of play, in other words, to what acting really feels like. Stella Adler, Stanislavski, Morris Carnovsky, and Meisner will lead our study. Our exploration will make use of monologues and scene work from various classical and contemporary playwrights. Prerequisite: THEA312 or Permission of Instructor.

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USEM101

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.

USEM102

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.

USEM103

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.

USEM104

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.

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Terms & Phrases

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.

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

Admission: Acceptance for enrollment.

Advisor: Faculty member who offers academic advice, explains requirements and assists in scheduling.

Anchor Access: Accessed from the My.LSSU Portal. Anchor Access is an important online tool students will use at LSSU. Access to registration, financial aid, tuition & billing information, all academic information, parking, employee information, addresses, etc.

Associate Degree: Awarded for a "two-year" program.

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

Calendar: Important dates of the academic year.

Certificate: Normally requires one year of study.

College: Academic unit administered by a dean, comprising two or more departments or schools.

Corequisite: A Course taken during the same semester as another course.

Cognate: A specified course, generally in field other than the major, which students must take for their program.

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.

*ENGL110 First-Year
Composition I.....3*

Credit: See *academic credit*.

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

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

Discipline: Group of related courses, such as mathematics.

Elective: Course distinguished from required course, selected from a number of specified courses.

Field Placement: See *practicum*.

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

Full-Time Student: Enrollment of 12 or more credits in a semester (nine credits for graduate students).

General Education Requirements: Courses students must take in addition to their major to earn a bachelors, or an associates degree. Provides a broadly based education.

GED Examinations: (General Education Development examination): A test for students who did not finish high school. Can be used in place of high school graduation.

Grade Point Average (GPA): Number of points divided by the hours of credit attempted. It calculates the average grade point for all classes. Cumulative grade point average is the average for all 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 a specific area of study.

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

My.LSSU: Web portal to Anchor Access, email service, school announcements, etc.

Part-Time Student: Enrollment of fewer than 12 credits in a semester (fewer than nine for graduate students).

Practicum: Another word for internship.

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

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

Registration: Each semester students register for specific courses for the next semester, pay tuition, etc.

Required Courses: Courses students must take to earn a degree. Failed courses must be repeated.

School: *See Departments.*

Semester: Sometimes called "term": *See academic year.*

Term: Sometimes called "semester": *See academic year.*

Transcript: Official record of coursework maintained by the LSSU Registrar's Office.

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

Withdrawal: Procedure used when students withdraw from LSSU.

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NOTE: This printable version contains only pages located within this website. External website links are not presented in this printable version. Some of these external links include Mission/Vision Statements, Colleges/Schools, University Calendar, etc. To print these external websites, you will to browse the link and print.

Reminder! This catalog, if printed, contains over 290 pages. Please remember the environment when printing. It is recommended you print only the pages that are needed.

A Look at LSSU

Lake Superior State University in Sault Ste. Marie Michigan, is a publicly funded state university operated under the control of a Governor-appointed Board of Trustees.

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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.

Expectations for Student Learning

Lake Superior State University is committed to following a clear process of assessment to enhance continuous quality improvement and to document student learning in both the major program of study and across the general education requirements. This continuous evaluation process works to assure high quality teaching and effective student learning, while meeting federal requirements and the accreditation criteria of the Higher Learning Commission. Faculty at Lake Superior State University deem certain characteristics as essential to a liberal education, increasing value for the students in their lives as responsible citizens; faculty have therefore collectively agreed upon the characteristics of the educated person the institution hopes to graduate. Students who complete the general education courses at Lake Superior State University will be able to demonstrate attributes of the general education outcomes for communication skills, mathematics, cultural diversity, humanities, and social and natural science.

Accreditation

[Accreditation Information](#)

Institutional Learning Outcomes

Formal Communication

Students will develop and clearly express complex ideas in written and oral presentations.

Use of Evidence

Students will identify the need for, gather, and accurately process the appropriate type, quality, and quantity of evidence to answer a complex question or solve a complex problem.

Analysis and Synthesis

Students will organize and synthesize evidence, ideas, or works of imagination to answer an open-ended question, draw a conclusion, achieve a goal, or create a substantial work of art.

Professional Responsibility

Students will demonstrate the ability to apply professional ethics and intercultural competence when answering a question, solving a problem, or achieving a goal.

Consumer Information

Student 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 and on the Web at www.lssu.edu/finaid.
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.
4. How your financial need was determined. This includes how costs for tuition and fees, room and board, travel, books and supplies, personal and miscellaneous expenses, etc., are considered in your budget. (See Official Offer of Award letter.)
5. What resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need. (Contact the Financial Aid Office.)
6. How much of your financial need has been met, as determined by the institution. (See Official Offer of Award letter.)
7. Request an explanation of the various programs in your student aid package. If you believe you have been treated unfairly, you may request reconsideration of your award. (Contact the Financial Aid Office.)
8. The school's [refund policy](#).
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.(Contact the Financial Aid Office or see Promissory Note.)
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](#).
11. That LSSU programs are accessible to the handicapped. Further information is available from [Accessibility Services](#), Lake Superior State University, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783. Assessibility Services is located in the Kenneth Shouldice 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](#).
15. And finally, you have the right to request: 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 Information](#).)

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 workstudy 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:
 1. change in address (completed in Anchor Access) or type of residency (e.g., dorm to commuter)
 2. changes in enrollment status (e.g., dropping classes or withdrawing)
 3. changes in marital status
 4. 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.

Campus History

Lake Superior State University is a vibrant independent regional state university serving the Eastern Upper Peninsula, and Northern Lower Peninsula with a wide range of programs at the associate and baccalaureate level. The University was established in 1946 as a branch campus of the Michigan College of Mining and Technology (now Michigan Technological University) and in 1966 became a four-year degree-granting institution known as Lake Superior State College of Michigan Technological University. In 1967 Lake Superior State College gained autonomy as a four-year baccalaureate degree-granting institution of higher learning with programs in the liberal arts and sciences, technology, business, and health fields. The name of the University was changed to Lake Superior State University in 1987 by act of the Michigan Legislature.

The University is located in Sault Sainte Marie, Michigan, in the Eastern Upper Peninsula of the State. The campus of 120 acres overlooks the St. Mary's River and Sault Sainte Marie, Ontario. Also within view are the Soo Locks which make it possible for ships to pass between Lake Huron and Lake Superior. The University is situated on the historic site of Fort Brady, a United States Army post dating back to 1822, which was decommissioned in 1944. The campus is a blend of historic and modern architecture.

Sault Sainte Marie (pop. 14,000) 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 350th birthday in 2018.

Our sister city, Sault Sainte Marie, Ontario (pop 75,000), is a cultural, recreational, social and entertainment center. The combined population of the Twin Saults allows for an international flavor abounding with the opportunities of a city, and the safety and comfort of a small town.

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:

1. 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;
2. 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
3. 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 the Director of Human Resources/EEO Officer, Lake Superior State University Administration Building, Sault Ste. Marie, Michigan 49783 (906-635-2213) 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.

Regional Centers

Lake Superior State University offers bachelor degree-completion programs at our regional centers that build on your education from your community college. This approach allows you to complete your degree at a reasonable cost and close to home.

All degrees require completion of the [general education requirements](#). For students transferring from a Michigan community college who have earned MACRAO or MTA (Michigan Transfer Agreement), the general education requirements are considered satisfied by LSSU.

We are proud of the high-quality instruction and the personal attention LSSU offers. Our small class sizes, experienced faculty and the ability to pursue your educational dreams close to home are what the LSSU regional centers are all about.

Stop by one of our regional centers for assistance in planning your educational goals. We can help answer your questions in areas of admissions requirements, scholarship/financial aid, academics, course rotations, registration and more.

[Escanaba/Iron Mountain Regional Center](#)

Heidi Rife, Coordinator
Escanaba Regional Center
Bay College
2001 N Lincoln Road - Heirman Center
Escanaba, MI 49829
Phone: 906-217-4123
E-mail: hberg@lssu.edu

Completion Programs are available for the following degrees:

- Accounting
- Business Administration with a declared minor (Accounting/Finance, Marketing, International Business-also available in Iron Mountain)
- Business Administration - Entrepreneurship
- Business Administration - International Business
- Business Administration - Management
- Criminal Justice - Generalist Concentration
- Criminal Justice - Law Enforcement Concentration with MCOLES
- Early Childhood Education
- Early Childhood Education - Teaching Minor (ZS Endorsement)
- Elementary Education
- Elementary Education with an Early Childhood Education Concentration
- Elementary Education with a Language Arts and Mathematics Concentration
- Language Arts - Elementary Teaching
- Mathematics - Elementary Teaching
- Special Education (Learning Disabilities) - Elementary Teaching
- General Studies
- Individualized Studies
- Nursing - Completion Program
- Secondary Education
- English Language & Literature - Secondary Teaching
- Integrated Science - Secondary Teaching
- Mathematics - Secondary Teaching

- Social Science - Secondary Teaching Concentration

Petoskey Regional Center

Carolyn Ramsdell, Coordinator
North Central Michigan College
1515 Howard Street
Petoskey, MI 49770
Phone: 231-348-6623
E-mail: cramsdell@lssu.edu

Completion Programs are available for the following degrees:

- Accounting
- Business Administration with a declared minor (Marketing, International Business)
- Business Administration - Management
- Criminal Justice – Generalist Concentration
- Criminal Justice – Law Enforcement Concentration with MCOLES
- Early Childhood Education
- General Studies

Admissions

Links

- [Website](#)
- [Visit](#)

Freshmen

A freshman student is defined as a student who has not enrolled in a postsecondary institution anytime after the summer following high school graduation.

A student may apply to Lake Superior State University anytime throughout his or her final year of high school. The best time to apply is at the beginning of a student's senior year. Applications are processed continuously. When all necessary materials have arrived, the student will be notified of a decision as soon as possible.

The Admissions Office must receive an official high school transcript, (or GED score report), to make an application decision.

The primary factors used to determine admission are cumulative grade point average (GPA) and high school course curriculum. LSSU recommends students follow a college preparatory curriculum mirroring the Michigan Merit Curriculum. The middle 50 percent of the entering freshmen class have high school GPAs ranging from 2.80 to 3.70. Students with a high school GPA of 2.4 or less will be reviewed through our holistic review process. Letters of recommendation or personal statements are considered. Students are encouraged to submit any additional materials that may aid the Admissions Office in the decision-making process where unusual circumstances may have impacted high school performance.

A student's admission will be contingent upon satisfactory completion of current coursework and receipt of a final high school transcript with verification of graduation from an accredited school or passing of the GED. All transcripts and/or test score reports must be mailed from the high school guidance office or testing agency directly to Lake Superior State University to be considered official. Transcripts delivered via approved platforms will also be considered official. Please contact the Admissions Office for more information regarding approved current electronic delivery methods.

LSSU assigns each student an individual student identification number. A student number will be provided upon admittance. While LSSU does not use social security numbers for student identification purposes, the university does use it to match an application record with other permanent records. Financial aid applications will not be processed without a student's social security number. Social security numbers should be included on the application for admission. Canadian and international student applicants should not report his or her social insurance number. LSSU will use the assigned student identification number.

Conditional Admission Policy

New freshmen applicants with a high school GPA of 2.4 or less and new transfer applicants with a combined previous institution(s) GPA of less than 2.0 will be reviewed through a holistic review process. The Admissions Committee may require additional documentation in the form of essays or recommendations. Applicants are encouraged to submit additional materials that may aid the Admissions Committee in the decision making process. The committee may recommend students for admission with conditional status.

Students admitted through the conditional admissions policy are:

- Limited to enroll in no more than 13 credit hours for two consecutive semesters
- Assigned an academic advisor through their major department
- Assigned an academic support specialist through the Library and Academic Services Department

Students admitted through the conditional admissions policy **must**:

- Earn a minimum 2.0 cumulative GPA while in conditional status
- Meet with their departmentally assigned academic advisor each semester
- Meet with their academic support specialist and follow the academic support plan outlined by their specialist

After the completion of two consecutive semesters and earning a cumulative 2.0 GPA or higher the student will be removed from conditional status and the semester credit hour limitation.

Early and Middle College or Dual Enrollment

Students participating in Early/Middle College or Dual Enrollment programs are considered first time in college (FTIC) students for admissions and scholarship purposes. Lake Superior State University uses holistic review and will consider all course work, both high school and college, in the evaluative process for admission. Early college students are considered FTIC with advanced standing for credits earned.

Students participating in early or middle college or dual enrollment in high school must have official transcripts from the college or university awarding course credit sent directly to Lake Superior State University. Credit will not be granted without an official transcript. Contact the college or university's Registrar's Office to have an official transcript sent. Transcripts sent by facsimile or hand delivered are not considered official. All transcripts become the property of Lake Superior State University and are not returnable.

Home Schooled Students

Lake Superior State University does not have separate requirements for home schooled applicants. Like all applicants, home schooled students will need to provide a transcript of his or her high school coursework. Admission will be based of high school grade point average and coursework completed.

Transfer Students

A transfer student is defined as a student who enrolls in a postsecondary institution anytime after the summer following high school graduation.

Transfer students must possess a 2.00 cumulative college GPA and be eligible to return to their former college(s). Students seeking federal financial aid need to supply a final high school transcript (or GED score report) if transferring fewer than 60 credits without an earned associate degree.

Contact the college's Registrar's Office or high school guidance office to have an official transcript mailed to Lake Superior State University. 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.

Transfer Credit Evaluations

Official evaluation of transfer credit is made upon acceptance to LSSU. The Admissions Office will help with an unofficial transcript review upon request.

If a course taken at another institution is not offered at LSSU, elective credit may be granted for that course.

To receive transfer credit, students will need to earn a grade of C- (2.7) or higher.

The Admissions Office completes transfer credit evaluations based on equivalencies determined by the faculty. The decision on courses and transfer credit granted may be appealed first to the academic dean and then to the provost.

Michigan Transfer Agreement (MTA)

In order to satisfy the MTA, students must successfully complete at least 30 credits from an approved list of courses at a sending institution with at least a grade of 2.00 in each course. These credits, which will be certified by a sending institution, should be completed according to the following distributions:

- One course in English composition
- A second course in English composition or one course in communication
- One course in mathematics
- Two courses in social sciences (from two disciplines)
- Two courses in humanities and fine arts (from two disciplines excluding studio and performance classes)
- Two courses in natural sciences including at least one with laboratory experience (from two disciplines)

Students admitted to Lake Superior State University who have the MTA stamp on his or her transcript are recognized as having completed the general education requirements at Lake Superior State University.

Students who do not complete the entire block of courses required by the MTA will receive credit for the courses they do complete on the basis of individual course evaluation and established transfer equivalencies.

It is important to note that the MTA is not the best fit for all programs. There are many programs in Michigan for which the MTA is not a good fit. Students are encouraged to work with their advisors at their destination institution (LSSU) in order to select a path that is best for them.

MACRAO Transfer Agreement

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

Residency Requirement

There is no limit to the number of transfer credits allowed from other institutions but students are required to complete LSSU's [Residency Requirements](#).

Former Students

Former Lake Superior State University students who miss one or more semesters (not including summer) must submit an application for readmission prior to the semester of re-entry. If a student attended another college during the period of absence, the student must submit official transcripts and meet LSSU's transfer student admissions requirements. Students who were academically dismissed must meet the requirements for re-enrollment or appeal to the Scholastic Standards Committee.

Guest Students

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

Ontario Students

Ontario student applicants must satisfy entrance requirements comparable to those of United States students. Please refer to the "Freshmen" and "Transfer" sections of the catalog for details. Ontario students are not required to take the SAT/ACT for admission consideration. SAT/ACT scores are required for merit scholarship consideration.

If a student has completed grade 13 or OAC courses before September 1990, he or she will receive transfer credit at the university for each course in which the 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".

Admitted Ontario students must provide verification of ability to pay in order to receive a Certificate of Eligibility for Non-Immigrant (F-1) Student Status (Form I-20) required to attend a university in the United States. This is not an admissions requirement for Ontario students; however, an I-20 form is required for a student to cross into the U.S. to attend classes. Please refer to "Verification of Ability to Pay" section in the catalog for details. If a student is a permanent resident or able to be in the U.S. with another form of documentation, the student is required to submit a copy of this documentation.

If a student is a Canadian Aboriginal or Native American (excluding METIS) with at least 50% blood quantum and has J-treaty privileges (carries a tribal ID), the student is exempt from needing an I-20 form. The student must provide a copy of his or her tribal ID and an official tribal-issued letter showing proof of blood quantum.

Ontario students planning to attend part-time (fewer than 12 credits) and commute to the university will be issued a new I-20 form each semester upon the verification of the payment of tuition and fees, or after submission of financial information as outlined above.

Ontario students are required to provide a copy of a valid Provincial Health Card (both sides) verifying coverage under a provincial health care program. LSSU highly recommends that students purchase adequate health insurance coverage while in the U.S. Students, however, may request to [waive](#) the purchase of additional health and accident insurance.

International Students (Excluding Ontario Students)

LSSU recommends international applicants submit all application material by July 15 for the fall semester and by November 15 for the spring semester. Students will be required to provide official transcripts evaluated by World Evaluation Service (WES) or Education Credential Evaluators (ECE) on a comprehensive course-by-course basis. Websites for WES and ECE are www.wes.org and www.ece.org. This applies to first time in college students and transfer students.

International applicants must also provide verification of ability to pay, prove English language proficiency, and purchase health and accident insurance through the university sponsored program. Please refer to those sections for specific information.

Applicants should not be considered admitted to LSSU until all required documents

have been provided to the university and he or she has received an official letter of acceptance. Following the letter of acceptance, the I-20 form is sent, as required by the U.S. Immigration and Naturalization Services.

If a student is a permanent resident or able to be in the U.S. with another form of documentation, a copy of this documentation is required.

International students are required to purchase health and accident insurance through the university sponsored program.

Verification of Ability to Pay – Ontario and International Students

The U.S. Immigration and Naturalization Services (INS) require that LSSU have verification of a student's ability to pay for tuition/books and expenses before a Certificate of Eligibility for Non-Immigrant (F-1) Student Status (I-20) can be issued. This form is required for international students to cross the border into the United States.

An acceptable financial document must have been submitted not more than nine (9) months before the term the student intends to enroll at LSSU. The document needs to be current within the last 90 days. Inclusion of false information in the financial statements is grounds for dismissal. Verification may be documented by the following: personal savings or verification of loans or scholarships received, a parent or sponsor, government or sponsoring agency, or by LSSU anticipated support.

As of September 1, 2004, the U.S. Department of Homeland Security (DHS) has implemented a rule requiring F-1 visa applicants to pay a one-time fee to supplement the administration and maintenance costs of the Student and Exchange Information System (SEVIS). Because LSSU will be issuing the student an initial I-20 form, the student will be required to pay this SEVIS fee. Information about payment of the fee and the processing of an I-20 form upon entry to the U.S. will be provided to the student upon receipt of the initial I-20 form. Students may also check our website for additional information: <https://www.lssu.edu/admissions/how-to-apply/international-student-admissions-application/>.

Proof of English Proficiency

Proof of English proficiency is required for admission to LSSU as an international student. English proficiency can be proven in several ways:

1. Score 500 or above on the paper-based [Test of English as a Foreign Language \(TOEFL\)](#) or a score of 61 on the internet-based TOEFL. Please use institutional code 1421 to report scores directly to LSSU.
2. Score of 72 on the Michigan English Language Assessment Battery (MELAB). Write: English Language Institute, MELAB Testing, 3020 North University Building, University of Michigan, Ann Arbor, Michigan 48109-1057, U.S.A.
3. Completion of Level 112 at any ELS Language Center located in the U.S. More information can be found at: www.studyusa.com or at www.els.com, 1-609-750-3500 or info@els.com.
4. APIEL - Advanced Placement English Language Test with a score of 3 or higher.
5. SAT critical reading score of 480 or higher for tests taken before March 1, 2016, minimum overall score of 965 or higher, ACT equivalent is 20. For SAT tests taken after May 2016 an evidence based reading and writing score of 510.
6. Completion of two (2) years of study at a school, college or university located in an English-speaking country.
7. IELTS - International English Language Testing System with a score of 6.0 or higher.
8. [PTE](#) Academic test score of 44 or higher.

Undocumented Students

Students who are undocumented are considered domestic students, not international students for admissions consideration. They must meet regular admission requirements. Undocumented students are not eligible for financial aid or scholarships.

Orientation

All new students (including transfer students) attending main campus are required to attend and participate in [orientation](#). Orientation is when students learn important information on academic policies and procedures that students are expected to follow while attending LSSU. Students will also learn about the wide range of services available to assist them in having a successful university experience.

Part-time Enrollment

Students may enroll as a part-time student and take up to 11 credits per semester in courses for which they have sufficient academic background. United States citizens or permanent residents attending part-time who are not seeking financial aid, a degree, or certificate, do not have to formally apply for admission.

Canadian (commuter) students wishing to attend part-time must apply for admission and be accepted into a degree program. All other international students must maintain full-time enrollment (12+ credits) to maintain F-1 status.

Part-time students (non degree) are not assigned a faculty advisor. Students are encouraged to seek assistance in selecting courses from the appropriate academic departments.

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

Career and Technical Education

Lake Superior State University recognizes the excellent academic achievement of students completed through the Career and Technical Education programs throughout the state by awarding university credit for work completed while in high school. Through this partnership students are able to begin their university studies by completing their CTE curriculum. Lake Superior State University is a proud partner with the Michigan Department of Education, Michigan High Schools, and Michigan Career and Technical Education Centers in providing direct pathways for students to continue with post-secondary education. Through [coordinated Articulation Agreements](#), LSSU assists students to realize a seamless and systematic transition, maximizing the use of resources and minimizing duplication of content as students move from a secondary to postsecondary educational experience.

Credit by Examination

A student may earn university credit by examination. The university grants credit from Advanced Placement, International Baccalaureate (IB), College Level Examination Program (CLEP) and departmental exams. If a student is already attending Lake State, he or she may earn credit through both CLEP and departmental exams.

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

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

Advanced Placement Program (AP)

Advanced Placement Exams are administered through high schools each May. LSSU grants credit in select AP exams passed with a score of three or higher. If an essay is part of an individual exam, it must be submitted to university testing services for evaluation. To receive credit, the essay must be satisfactory and the student must have a minimum score of three on the test. [Credit for AP is granted as shown on the table.](#)

International Baccalaureate (IB)

Lake Superior State University offers college credit for students who complete IB coursework with strong results. LSSU will grant credit only for Higher Level exams and scores of 5 or above. [Credit for IB is granted as shown on the table.](#)

College Level Examination Program (CLEP)

Students may take CLEP exams at a computer testing center, including Lake Superior State University's Testing Services. LSSU offers CLEP exams by appointment. Credit for CLEP is granted as shown on the [table.](#)

Students 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.

Dantes ACE Credit

LSSU is proud to accept credit for prior military experiences. Once LSSU receives an official transcript, the transcripts (including military training) will be evaluated and credit will be granted based on American Council on Education (ACE) recommendations. If a student's Dantes equivalence is not listed, contact the Registrar's Office for further review. [Credit is granted as shown on the table.](#)

Departmental Exams

Departments may provide their own examinations for certain courses. Students must have the written approval of the appropriate dean to take the examination. The [Credit by Departmental Exam Application Form](#) can be found online and in Anchor Access. There is a fee charged per credit hour. An examination grade of 2.00 or better is required for credit to be earned. Credit earned by exam is recorded as transfer credit on the student's transcript. Some universities may not accept transfer credit earned by departmental exam.

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

Financial Aid

Links

- [Website](#)

Overview

Financial Aid Mission Statement

The mission of the Financial Aid Office is to provide accurate and timely financial aid information to students to meet their educational expenses.

Our goal is to offer all students a balanced financial aid package that is competitive and attractive, and best utilizes the resources available.

We strive to assist and educate our students by providing the best service possible so that they can focus on their educational experience.

Financial Aid Office

The LSSU Financial Aid Office staff is available to assist students with the financial aid process. Our experienced staff is available during office hours to respond to financial aid questions and requests. We can meet virtually, via phone or in the office. Financial Aid staff can be contacted via email - finaid@lssu.edu, phone - (906)635-2678, or text - (906)379-9557. The Financial Aid Office is located in the Fletcher Center for Student Services.

Financial Aid Offer

Financial aid is any money used for students' educational expenses and includes grants, scholarships, loans and student employment. An offer of financial aid in the form of a university scholarship is made when a qualified student is initially admitted to LSSU. Other offers of aid follow the admission and receipt of federal applications or athletic tenders. LSSU participates in federal, state and province aid programs and provides a generous institutional scholarship and grant program. An "Official Offer of Award" letter from the Financial Aid Office is sent after all documents needed to complete a student award are received and reviewed.

Applying for Federal Financial Aid

To apply for most all forms of aid, students must complete the FAFSA. This application must be renewed each year for a student to continue receiving financial aid. For State of Michigan programs, the priority deadline is March 1st. Lake Superior State University's federal school code for the FAFSA is 002293.

Scholarship Selection

Students are automatically considered for Board of Trustees Scholarships upon admitting into the institution. For these admission based scholarships, amount is determined by high school or transfer GPA. See below for the scholarship renewable requirements.

Satisfactory Academic Progress (SAP) Requirements for the Retention of Financial Aid at Lake Superior State University

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 include Federal Pell Grant, Federal Work-Study, Federal Supplemental Educational Opportunity Grant, Federal Direct Loans, Federal PLUS Loans, State of Michigan and Institutional Scholarships, Grants, Loan and Work Programs, and some Rebates and Tuition Waivers.

The **minimum requirements** for all types of financial aid include three standard measures:

Minimum GPA Standard:

- Maintain a 2.0 cumulative LSSU grade point average
- Students who fail to meet this requirement will be placed on financial aid warning for one semester. Failure to meet this requirement after the warning semester will result in suspended status, which the student will lose all federal, state, and institutional eligibility.

Credits Earned Standard:

- Earn 67% of credits attempted at LSSU throughout your academic career
- Attempted credits are courses you are enrolled in after the end of the add/drop period, which is after the first 6 days of the start of the semester.
- Example: 48 earned credits / 56 attempted credits = 85% of credits earned
- Students who fail to meet this requirement will be placed on financial aid warning for one semester. Failure to meet this requirement after the warning semester will result in suspended status, which the student will lose all federal, state, and institutional eligibility.

Maximum Time Frame:

- Complete the highest degree being sought within 150% of the published length of the program. For example, students working on a baccalaureate program of 124 credits may receive aid for 186 attempted credits, including transfer credits.

Degree	Average Credits Needed	Maximum Time Frame
Paramedic Certificate	40	Within 60 attempted credits
LPN Certificate	47	Within 70 attempted credits
Pre-Nursing BSN	56	Within 84 attempted credits
Associate	62	Within 93 attempted credits
Bachelor	124	Within 186 attempted credits
Teaching Certificate	136	Within 204 attempted credits
Master's	36	Within 54 attempted credits

One WARNING SEMESTER

If a student does not meet the Financial Aid Satisfactory Academic Progress (SAP) at the end of each semester, the student will be given one warning semester. Students may receive aid during the warning semester. If a student fails to meet the standard for the second consecutive semester enrolled, the financial aid **will be suspended**. During the *WARNING SEMESTER*, it is **highly recommended that students plan ahead and work with an advisor to correct deficiencies**.

Financial Aid Suspension

No aid will be granted once a student's eligibility is suspended, including but not limited to federal, state and institutional aid.

Right to Appeal

A student whose aid is suspended may request reinstatement through the Financial Aid Appeals Committee. The student must effectively demonstrate that the failure to meet satisfactory Academic Progress (SAP) was due to an unusual or extenuating circumstance, and explain what has changed. [The directions and required forms for the appeal process are available online.](#)

Financial Aid Self-Reinstatement

Once financial aid is suspended, both the cumulative GPA and credit hour completion standards must be met in subsequent semesters of at least six credits before reinstatement of aid is possible. Students who successfully complete a minimum of six credits at LSSU while not receiving financial aid must contact the Financial Aid Office to request a review for reinstatement.

If completion of "I" grades or other record changes warrant a reinstatement, a copy of the transcript must be submitted to the Financial Aid Office with a written request for a review.

Repeat Policy for Financial Aid Recipients

Students may use financial aid to repeat coursework that has been previously failed. Students may also use financial aid one time when repeating coursework to improve an earned letter grade of D- or higher.

For example, a student taking a course for the first time who received an F grade could have financial aid to repeat the course. If the student received a D grade for the repeated course, the student **could** have financial aid one more time to repeat the course to raise the grade. Students advised to retake passed courses more than once to improve their GPA may do so at their own expense, provided the repeats are allowed by the department.

NOTE: Satisfactory Academic Progress Policy is in compliance with the Department of Education Final Regulations published Oct. 29, 2010 - 34CFR 668.16(e), 668.32(f) & 668.34.

LSSU Scholarship Renewal Requirements

If your scholarship was offered to you as a "renewable" award, it is important that you have met the criteria listed below each spring when your eligibility is reviewed for the next year.

- Board of Trustees Freshman merit scholarship: **2.75 LSSU cumulative GPA**
- Full-Tuition Scholarships: **3.00 LSSU cumulative GPA**
- Full-time enrollment each semester; must earn 24 LSSU credits each academic year.
- Awarded up to 8 consecutive semesters or until 1st Bachelors Degree is earned, whichever is first.
Students in their teaching internship semester may be eligible to receive a 9th semester renewal.
- Awarded for Fall and Spring semesters only, not available for use in summer semesters.
- To receive the on-campus component of any scholarship, you must be in the on-campus housing program for the semester. If you leave on-campus

housing, the room and board award will be terminated.

NOTE: Scholarships and other institutional funds provided as grants or scholarships or stipends for campus R&B students, will not exceed the basic rate cost of housing and board. This includes RA Grant, LSSU Supplemental Grant, the LSSU Housing Grant and all room and board components of Board of Trustees scholarships.

- Students at LSSU Regional Centers and meet consortium agreement requirements, if enrolled at least half-time (6+ credits) at LSSU, may use a semester of eligibility at a prorated amount.
- Must meet [Satisfactory Academic Progress](#) policy requirements.

Transfer Scholarships

Formula to determine the maximum number of semesters of eligibility:

- Senior (88+ credits) = Two semesters of eligibility
- Junior (56-87 credits) = Four semesters of eligibility
- Freshman/Sophomore (12-55 credits) = Six semesters of eligibility

Length is based on number of ATTEMPTED credits prior to LSSU

NOTE: Some types of financial aid awards, such as an employee rebate, the Native American Tuition Waiver, or the Tuition Incentive Program, could affect your eligibility for an LSSU scholarship. Please contact the Financial Aid Office for further details.

Frequently Asked Questions

- Full tuition scholarships are limited to 12-16 credits per semester for the academic year and do not include any type of fee.
- Full tuition scholarships can not be combined with tuition waivers, such as Michigan Indian Tuition Waiver or Employee Rebates.
- Recipients of foundation scholarships are encouraged to write a thank you letter to the donor.

New Scholarships for Current Students

Renewable scholarships are based on your grade level and number of credits transferred or earned at the time of your award. For example, if you are offered a renewable scholarship as a sophomore, you will generally be eligible for two additional years of scholarship. If an ending date is not stated in your offer of scholarship, please contact the Financial Aid Office if you have questions about the renewal features of your award. Except for students in their fifth year of the teaching program, scholarships are generally not available to students with more than four years of higher education or eight semesters of study or more than 124 attempted credits.

Scholarships, Grants, Loans

- [Scholarships](#)
- [Grant Programs](#)
- [Loans](#)
- [Campus Employment](#)
- [Programs for Native Americans](#)
- [Veterans Educational Benefits](#)

Scholarships

Scholarship criteria is reviewed each year and subject to change. Scholarships are described here as awarded for 2012-13.

Incoming Freshmen (In-State)

Eligibility is automatically evaluated by the Financial Aid Office for all students admitted by March 1st for the following academic year.

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

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

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

Laker Gold Scholarship

Value: Full tuition up to 17 credits per semester, inclusive of other LSSU awards, renewable. Up to three scholarships will be awarded each year through the Laker Gold Competition.

Criteria: must meet Board of Trustees Distinguished Scholarship criteria, must have applied for admission no later than December 1st of senior year of high school, must be invited to attend annual competition and respond by invitation due date.

Board of Trustees Distinguished Scholarship

Value: up to \$8000 per year (\$5000 + \$3000 if Room & Board) — renewable

Criteria: merit based; Michigan resident; minimum points 186 (example: 3.80 GPA and 28 ACT)

Board of Trustees Academic Excellence Scholarship

Value: up to \$5000 per year (\$3000 + \$2000 if Room & Board) — renewable

Criteria: merit based; Michigan resident; 161.5-185.99 points (example: 3.50 GPA and 24 ACT)

Board of Trustees Academic Recognition Scholarship

Value: up to \$3000 per year (\$2000 + \$1000 if Room & Board) — renewable

Criteria: merit based; Michigan resident; 137.5-161.49 points (example: 3.30 GPA and 21 ACT)

Incoming Freshmen (Out-of-State and Foreign)

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

All recipients in this section are selected by the Financial Aid Committee and may choose any degree curriculum offered by the University. Students must be current graduates of high schools outside of Michigan and Ontario.

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

Board of Trustees' Laker USA Scholarship

Value: the difference between out-of-state and in-state tuition — renewable
Criteria: merit based; U.S. students scoring 24 or higher ACT or 3.0 GPA, or who graduate in the top 20% of their graduating class
Note: this scholarship may be combined with other LSSU scholarships.

Board of Trustees United States and Foreign Distinguished Scholarship

Value: up to \$4,000 per year (\$2000 + \$2000 if Room & Board) — renewable
Criteria: merit based; minimum 3.7 GPA and 28 ACT

Board of Trustees United States and Foreign Academic Scholarship

Value: up to \$3000 per year (\$2000 + \$1000 if Room & Board) — renewable
Criteria: merit based; minimum 3.5 GPA and 25 ACT

Incoming Freshmen (Ontario)

Board of Trustees Ontario Distinguished Scholarship

Value: up to \$4000 per year (\$2000 + \$2000 if Room & Board) — renewable
Criteria: merit based; Ontario resident; graduate of an Ontario high school; minimum 3.8 GPA (equated)

Board of Trustees Ontario Honors Scholarship

Value: up to \$2000 per year (\$1000 + \$1000 if Room & Board) — renewable
Criteria: merit based; Ontario resident; graduate of an Ontario high school; minimum 3.5 GPA (equated)

Board of Trustees Ontario Achievement Scholarship

Value: \$1,000 per year – renewable
Criteria: merit based; Ontario resident; graduate of an Ontario high school; minimum 3.3 GPA (equated)

Board of Trustees Ontario Award

Value: \$1000 for first year only
Criteria: merit based; Ontario resident; graduate of an Ontario high school; minimum 3.0 GPA (equated)

Transfer Students

Eligibility is determined by the Financial Aid Office for all students admitted by April 15th for the following fall semester or December 1st for spring semester. All recipients in this section are selected by the Financial Aid Committee and may choose any degree curriculum offered by the University.

Transfer scholarships are normally renewable for a second year, provided the recipient meets the University's scholarship renewal criteria.

The eligible student must be entering LSSU for the first time directly from another college (students sitting out more than one semester are not eligible for scholarship consideration) as a full-time student. Awards are based on the cumulative GPA earned at all schools prior to start of the first LSSU semester, with a minimum of 24 **earned** college credits and a maximum of 90 attempted college credits at any combination of other accredited schools. Students with more than 90 attempted credits but less than 124, may receive a non-renewable award.

If the transfer student has less than 24 earned credits at time of admission (prior to April 15th), official transcripts are required by July 1st for scholarship consideration for the following academic year.

*Students who have taken LSSU classes prior to admission as a full-time student (such as transfer students from Sault College), must have earned a minimum LSSU cumulative GPA comparable to the minimum needed for the

transfer scholarship.

For example, a student with a cumulative GPA of 3.5 from another college, must have earned a minimum cumulative GPA of 3.5 from LSSU for any credits taken as a dual-enrolled student to qualify for the Academic Excellence Transfer Scholarship.

Board of Trustees Distinguished Transfer Scholarship

Value: up to \$5,000 per year (\$3,000 + \$2,000 if Room & Board) — renewable for second year

Criteria: merit based; earned cumulative GPA of 3.8 or higher

Board of Trustees Academic Excellence Transfer Scholarship

Value: up to \$3,500 per year (\$2,000 + \$1,500 if Room & Board) — renewable for second year

Criteria: merit based; earned cumulative GPA of 3.5-3.79

Board of Trustees Academic Honors Transfer Scholarship

Value: up to \$2,000 per year (\$1,000 + \$1,000 if Room & Board) — renewable for second year

Criteria: merit based; earned cumulative GPA of 3.3-3.49

ΦΘΚ (Phi Theta Kappa) Scholarship

Value: \$1,000 per year — renewable for second year

Criteria: must be a certified member of Phi Theta Kappa; earned cumulative GPA of 3.5 or higher

*Student must submit proof of membership before beginning attendance at LSSU.

Laker USA Transfer Scholarship

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

Criteria: merit based; U.S. students transferring from another U.S. college with a minimum 3.3 GPA and 24 earned credits.

Additional Scholarships for Incoming Students

The Financial Aid Office may consider incoming students for these scholarships if they are admitted by March 1st for the following academic year. Some endowed and academic department awards may be made earlier and it is to the student's advantage to apply for admission earlier than March 1st. These scholarships may replace and/or upgrade other LSSU scholarships. Students may choose any degree program to be considered for these scholarships unless specifically listed in the scholarship description.

Students must meet the University's scholarship renewal criteria to maintain these scholarships.

449th Bombardment Wing Scholarship

Value: variable — renewable

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

Guy Adda Memorial Endowed Scholarship

Value: variable — renewable

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

William Ayers Memorial Scholarship

Value: variable — renewable

Criteria: must be a Sault Area High School graduate

Selected by: Financial Aid Committee upon recommendation of the Sault Area

High School Faculty Honor Committee

Richard Blankenbaker Memorial Award

Value: variable up to full tuition — renewable

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

Leah Marie Bollin Memorial Award

Value: variable — non-renewable

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

Selected by: recommendation of a committee of representatives from the LSSU faculty, Disability Services, Counseling Center and the Bollin family.

James and Jean Boulton Scholarship

Value: variable – renewable

Criteria: merit based; graduate from Sault Area High School; major in Recreation Studies

Kurt and Mary Brammer Scholarship

Value: full tuition — renewable

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

C. Eugene Chang International Studies Scholarship

Value: variable — non-renewable

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

Sam Cohodas Endowed Scholarship

Value: variable — renewable

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

Robert Considine Community Scholarship

Value: Full tuition up to 17 credits – renewable

Two scholarships will be awarded each year.

Criteria: merit based; must be graduate of Rudyard High School; major in any program in Colleges of Business & Professional Studies, Health Professions and Science, Technology, Engineering & Mathematics; must be admitted by March 1 for the next academic year; 3.3 GPA or higher; 21 ACT or higher; preference given to those with demonstrated financial need (FAFSA on file); if there are no eligible Rudyard High School graduates, then a graduate of a Chippewa County high school may be considered.

Angela Coullard Memorial Scholarship

Value: variable — non-renewable

Criteria: merit and need based; graduating Sault Area High School senior who has participated in at least 2 seasons of an SAHS athletic program; minimum 3.0 GPA

Selected by: recommendation of the Sault Area High School Athletic Department

Michael Della-Moretta Memorial Scholarship

Value: variable — renewable

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

Elizabeth (Betsy) Demaray Business Scholarship

Value: variable — renewable

Criteria: merit and need based; first preference given to students who are residents of Michigan's Eastern Upper Peninsula, non-traditional students who have history of participation in community services

Curriculum: business

Selected by: recommendation of the School of Business

Sam Dubow Memorial Scholarship

Value: \$300 — renewable

Criteria: merit and need based; graduating Sault Area High School senior; leadership demonstration; community/school involvement

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

Frank Fazi Endowed Scholarship

Value: variable — non-renewable

Criteria: merit based; awarded to incoming freshman with a minimum 3.0 GPA and a graduate of an Eastern Upper Peninsula high school

Curriculum: business and/or economics

Fine and Performing Arts Scholarship

Value: variable — renewable

Criteria: merit based; incoming freshmen or current students; major in Fine Arts

First National Bank of St. Ignace Endowed Scholarship

Value: variable — renewable

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

H. Thayer Fletcher Distinguished Scholarship

Value: full tuition — renewable

Criteria: merit and need based; Michigan or Canadian residents; meet distinguished scholarship criteria

Rosa Grout Scholarship

Value: variable — renewable

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

Curriculum: engineering, engineering technology, mathematics, computer and mathematical science or lab science major

Dennis Hardt Memorial Scholarship

Value: variable — renewable

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

Curriculum: electrical engineering

Galen H. Harrison Scholarship

Value: Variable — Non-renewable

Criteria: Merit and need-based; Must be a new student that has been accepted by April 1st and graduating from Pickford High School. Must be majoring in biology, chemistry, geology, nursing, mathematics, computer engineering, computer science, electrical engineering, mechanical engineering, environmental chemistry, or environmental science.

Curriculum: Biology, Chemistry, Geology, Nursing, Mathematics, Computer Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Environmental Chemistry, or Environmental Science.

Selected by: Financial Aid Committee

Philip A. Hart Memorial Scholarship

Value: full tuition — renewable

Criteria: seniors of Michigan high schools or graduates of Michigan community colleges planning to attend LSSU for the first time; minimum 3.0 cumulative GPA. Candidates will be required to submit their applications with formal essays detailing their values, goals and public service experience. Essays should attempt to answer this question: "How have my activities thus far related to the goals and the ideals of Senator Hart?" Candidates will also be required to submit two letters of recommendation from individuals acquainted with their leadership and/or public service activities. Deadline for receipt of all application materials is published annually.

Sven V. Heikkinen Engineering Scholarship

Value: \$500 – non-renewable

Criteria: merit based; must be majoring in the engineering field

Selected by: recommendation from the Engineering Faculty

Frank and Gladys Hoholik Scholarship

Value: variable up to full tuition — renewable

Criteria: need based; may be entering freshmen, transfer students or currently enrolled students who have completed 26 credits at LSSU

David R. and Patricia L. Hubbard Award

Value: variable — non-renewable

Criteria: merit and need based; may be awarded to entering freshmen, transfer students or currently enrolled students who have completed 26 credits at LSSU

Roberts P. and Ella B. Hudson Foundation Scholarship

Value: variable — renewable

Criteria: merit based; new freshman or transfer student admitted by April 1 for the following academic year; minimum 3.0 GPA, must be a graduate from a Chippewa County high school

Robert M. Hunt Memorial Scholarship

Value: up to one-half tuition and fees — renewable

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

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

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

Bruce & Marian Huston Family Scholarship

Value: Variable – Non-Renewable

Criteria: Merit and need-based; Must be a graduate of a Johannesburg-Lewiston High School

Curriculum: Any

Selected by: Incoming freshman selected by the Johannesburg-Lewiston High School Selection Committee. Returning students selected by the Financial Aid Committee.

Huizenga Engineering Scholarship

Value: variable – non-renewable

Criteria: merit based; 3.30 GPA and 24 ACT minimum; demonstrated interest in career in engineering and technology; major in engineering or engineering

technology.

Selected by: recommendation of the School of Engineering and Technology

Neil and Dolly Isham Scholarship

Value: variable — renewable

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

Curriculum: any major in the College of Arts, Letters and Social Sciences

Lawrence Roy Jacobson and Dorothy M. Bell Engineering Scholarship

Value: variable — non-renewable

Criteria: need based; must be a Sault Area High School graduate

Curriculum: engineering

Selected by: recommendation of the School of Engineering and Technology

John Kalesky Memorial Endowed Scholarship

Value: variable — renewable

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

Curriculum: geology

C. Ernest Kemp Endowed Scholarship

Value: variable — minimum \$600 — renewable

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

Curriculum: geology

George and Virginia Lahodny Endowment Scholarship

Value: minimum \$500 — renewable

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

Larson-Prohazka Scholarship

Value: variable — renewable

Criteria: merit and need based; based on GPA and ACT scores; preference will be given to students from the Upper Peninsula with a cumulative GPA of 2.8 or higher; graduate of an Upper Peninsula high school that the student attended for at least three years; may be awarded to current LSSU students with at least 26 earned LSSU credits if an eligible high school student is not available

LSSU Foundation Endowed Scholarship

Value: variable — renewable

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

LSSU Robotics Scholarship

Value: variable- renewable for sophomore year

Criteria: merit based; 3.30 GPA and 24 ACT minimum, demonstrated interest in robotics specialty curriculum and experience as a participant in robotics competitions or summer camps; major in engineering or engineering technology.

Selected by: School of Engineering and Technology

LSSU Support Staff Award (ESP)

Value: variable — non-renewable

Criteria: full-time student in good standing; minimum cumulative 2.00 GPA is required. Must be either the child or grandchild of a participating union employee or retiree or be sponsored by a participating employee. Preference

will be given to a student with demonstrated financial need. Interested students must submit a biographical essay
Selected by: recommendation by the LSSU Support Staff Award Committee

John Lehman Chemistry Scholarship

Value: variable — non-renewable

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

Curriculum: chemistry or environmental chemistry

Selected by: recommendation of the Department of Chemistry and Environmental Sciences

Dr. Louis Lukenda Family Endowment

Value: variable – non-renewable

Criteria: merit based; freshmen or new transfer student; graduate of an Ontario, Canada high school; preference to students with demonstrated financial need, such as OSAP; preference to applicants majoring in health care or education; preference to students participating in an LSSU athletic program.

Selected by: LSSU faculty selection committee

Dr. Louis and Mae Lukenda Scholarship

Value: \$4,000 each – non-renewable

Criteria: merit based; freshmen or new transfer or current LSSU student; graduate of an Ontario, Canada high school; preference to students with demonstrated financial need, such as OSAP; preference to applicants majoring in health care or education; preference to students participating in an LSSU athletic program.

Masons of Michigan Bethel Lodge #358 Scholarship

Value: \$500 or more – non-renewable

Criteria: merit based; resident of Michigan; must be a child, step-child or grandchild of a member of a Lodge under the jurisdiction of the Grand Lodge of Free and Accepted Masons of Michigan; preference to students with financial need.

School of Mathematics and Computer Science Scholarship

Value: variable — renewable

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

Curriculum: computer and math science, or math secondary education

Tony McLain Student Leadership Scholarship

Value: \$1200 – non-renewable

Criteria: merit based; must have a minimum GPA of 3.25; must have graduated from one of the following high schools: Mason County Central High School, Thornapple Kellogg, Carsonville-Port Sanilac, Superior Central or Sault Area High School; must demonstrate leadership by participation in athletics, student council, community service; preference will be given to those with financial need.

Bill Munsell Endowed Scholarship

Value: variable — renewable

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

James C. and Melissa H. Myers Scholarship

Value: variable — renewable

Criteria: merit and need based; selection based on high school GPA and ACT scores; minimum 3.0 GPA

Leslie O’Polka Memorial Scholarship

Value: variable — renewable

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

Chase and Stella Osborn Endowed Scholarship

Value: variable — renewable

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

John D. Peacock Award

Value: variable — renewable

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

Frank and Marion Pingatore Memorial Scholarship

Value: variable — renewable

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

Precision Edge Surgical Products Company Community Scholarship

Value: \$2500 – renewable for sophomore year

Criteria: merit based; must be a graduate of a Chippewa County high school; preference given to graduates of Sault Area High School; must have financial need.

Kelsey Raffaele Memorial Scholarship

Value: \$500 or higher – non-renewable

Criteria: merit based; new freshmen graduate from Sault Area High School; Preference to students who are members of the Business Professionals of America Organization (BPA); if no eligible candidate then a SAHS graduate majoring in computer science or any business program may be considered.

Selected by: Sault Area High School Academic Awards Committee

Ross N. Roe Scholarship

Value: variable — renewable

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

Selected by: recommendation of the I-500 Snowmobile Committee

Dr. Madan Saluja Endowed Scholarship

Value: Variable – Non-renewable

Criteria: Merit and need- based; Must be a member of the LSSU Track or Cross Country team with preference given to students pursuing a degree in a School of Business program

Curriculum: School of Business program

Selected by: A committee consisting of the LSSU Athletic Director, LSSU Track & Cross-Country Coaches and a member of the School of Business faculty

C.G. “Sandy” Sanderson Endowed Scholarship

Value: variable — renewable

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

Sault/Loretto High School Scholarship

Value: \$500 — renewable

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

Dr. Kenneth J. Shouldice Memorial Scholarship

Value: variable — renewable

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

Charles Snyder Engineering & Technology Memorial Scholarship

Value: variable — non-renewable

Criteria: merit based; minimum 3.0 GPA and 22 ACT for freshmen or transfer.

Curriculum: engineering or engineering technology

Selected by: recommendation of the School of Engineering and Technology

Judson "Bucky" Swart Soo Lions Club Memorial Scholarship

Value: variable — renewable

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

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

Curriculum: business and/or economics

Earl and Minnie Walker Endowment Scholarship

Value: variable — up to full tuition — renewable

Criteria: merit and need based

Izaak Walton League of America Lock City Chapter Endowed Scholarship

Value: variable — non-renewable

Criteria: merit and need based; graduate of Sault Area High School; minimum 3.0 GPA

Curriculum: fisheries and wildlife management

William "Bud" and Gretchen Weber Scholarship

Value: \$500 — non-renewable

Criteria: merit based; preference given to those with demonstrated volunteerism who graduated from Sault Area High School

Lottie, Florence and Dorothy Weinreich Memorial Scholarship

Value: \$1000 — renewable

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

Harold Weiss Memorial Scholarship

Value: variable — renewable

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

Curriculum: criminal justice

Eugene Welch Endowment Scholarship

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

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

W. Gordon and Adela J. Wilman Scholarship

Value: \$1,000 — non-renewable

Criteria: merit based; must be a graduate of Sault Area High School; if there are no eligible SAHS candidates, a student who is a graduate from a Chippewa

County high school may be considered
Curriculum: education

Current Students

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

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

All current student scholarships require a minimum cumulative 3.0 GPA and 26 earned LSSU credits (unless otherwise stated). Students who are selected must be making normal satisfactory progress toward a degree and should not exceed 124 earned credits, except for fifth-year teaching internships.

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

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

Any Curriculum

LSSU Achievement Scholarship

Value: variable — non-renewable

Criteria: merit based; must have earned at least 26 LSSU credits; preference will be given to students who are not current recipients of any LSSU scholarship and who have demonstrated scholastic achievement and/or GPA improvement during their LSSU experience.

Selected by: recommendation of the Retention Committee

Mary R. Gray Memorial Scholarship

Value: variable — non-renewable

Criteria: merit based; must have earned at least 26 LSSU credits, preference will be given to non-traditional students (out of high school at least one year before college)

Crystal L. Housding Memorial Scholarship

Value: variable – non-renewable

Criteria: merit based; must have graduated from an Emmet County high school; preference given to students with financial need; preference given to students who demonstrate volunteer involvement and leadership skills.

Amy Ignatowski Memorial Award

Value: Up to \$250 – Non-renewable

Criteria: Must be an active U.S. Coast Guard member, Coast Guard Reservist or their dependents from USCG Sector Sault Ste. Marie, MI. Active duty Coast Guard members must have completed a minimum of six months of military service and reservists must be in drilling status.

Curriculum: Any

Selected by: an inter-disciplinary committee – a member of the Ignatowski family, USCG Education Service Officer, a representative of the LSSU Foundation and a representative of the ISCG – Sector Sault Ste. Marie, MI
Special application required

Laker Student Leader Scholarship

Value: \$1,000 — non-renewable

Criteria: merit based; must have earned at least 56 credits at LSSU

Selected by: nominations from LSSU faculty and staff with recommendation by the selection committee

Dr. Kenneth F. Light Memorial Award

Value: Variable – Non-renewable

Criteria: Merit and need- based; Preference will be given to students who are not current recipients of any LSSU scholarship and who have demonstrated scholastic achievement

Curriculum: Any

Selected by: Financial Aid Committee

Thomas J. O’Neil Memorial Scholarship

Value: \$1000 — renewable

Criteria: merit and need based; resident of Eastern Upper Peninsula of Michigan; earned at least 26 LSSU credits, minimum 3.0 GPA

Note: If there is not an eligible candidate from the EUP, Michigan residents may be considered

Curriculum: human services preferred, teaching may be considered

Selected by: Financial Aid Committee through scholarship sign-up

Sault Ste. Marie Business and Professional Scholarship

Value: variable — renewable

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

Father Donald (Don) Shiroda Scholarship

Value: Variable – Non-renewal

Criteria: Merit and need-based; Must be a volunteer to a Chippewa County Charity that benefits and promotes women’s causes and be registered with the LSSU Volunteer Center

Curriculum: Any Curriculum

Selected by: Financial Aid Committee

Edward C. and Hazel L. Stephenson Foundation Scholarship

Value: up to \$3000 per year, non-renewable;

Criteria: merit based; minimum 3.0 GPA; must be a full-time student; earned at least 26 LSSU credits; graduated from Michigan high school or the Great Lakes region; preference given to those who have overcome disabilities or other hardships in attaining his/her level of academic achievement

Randy G. Sanders Memorial Veterans Scholarship

Value: Up to \$1,000 – Non-renewable

Criteria: Merit and need-based; Must be Michigan resident who has been honorably discharged from the military

Curriculum: Any

Selected by: Financial Aid Committee

William “Bud” and Gretchen Weber Scholarship

Value: \$500 — non-renewable

Criteria: merit based; preference given to those with demonstrated volunteerism who graduated from Sault Area High School

Arts and Letters**Marion Strahl Boyer Scholarship**

Value: variable — renewable up to two years

Criteria: merit and need based; first preference will be given to a student from the Upper Peninsula of Michigan; non-traditional student preferred or must be at least a junior (56 credits earned); minimum 3.0 GPA
Curriculum: English or pursuing a teaching degree with an English minor
Selected by: Financial Aid Committee through scholarship sign-up

Carl and Bernitta Burt Scholarship

Value: variable — renewable

Criteria: merit and need based; resident of Michigan; preference to residents of Eastern Upper Peninsula

Curriculum: arts and letters or social sciences

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

Fine and Performing Arts Scholarship

Value: variable

Criteria: merit based; incoming freshmen students or current students must have a minimum 3.0 GPA
Curriculum: any degree curriculum offered by the University with preference given to students majoring in one or more of the Fine and Performing Arts programs

Selected by: recommendation of the School of Communication Studies and the Fine and Performing Arts

Peter C. Gianakura Journalism Scholarship

Value: Variable – Renewable

Criteria: Merit and need-based; Must be majoring in a English and Communication program and preference given to a student pursuing a journalism career.

Curriculum: English & Communication

Selected by: Financial Aid Committee

Milton Scherer Memorial Endowed Scholarship

Value: variable — awarded annually

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

Curriculum: major in history with minor in geography

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

Edeltraute Vialpando Memorial Scholarship

Value: variable – non-renewable

Criteria: merit based; preference to students with financial need.

Curriculum: French Studies

Selected by: recommendation from the Dean of Arts & Letters with French Studies faculty

Athletics

Marian and Raymond Chelberg Outstanding Science Athlete Scholarship

Value: variable — renewable

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

Curriculum: natural science or math

Selected by: recommendation of the Athletic Department

Ronald "Bud" Cooper Endowed Award

Value: variable — non-renewable

Criteria: One award will be given to student athletes participating in each of four Division II women's sports including softball, tennis, track and cross country. Students must have earned a minimum 2.0 GPA. Awards will be given to juniors in the spring for their senior year. If there are no eligible

juniors, the award may be given to a sophomore.

Selected by: recommendation of the Athletic Department

Jim Fallis Endowed Athletic Fund

Value: variable — non-renewable

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

Selected by: recommendation of the Athletic Department

Dillon F. Menard Memorial Scholarship

Value: up to \$1000 — non-renewable

Criteria: merit based; must be a member of the LSSU track and cross country teams; minimum 3.0 GPA, must be at least sophomore status.

Selected by: recommendation of the LSSU Track and Cross Country Coach and the LSSU Athletic Director

James R. Mason Memorial Scholarship

Value: \$1000 — non-renewable

Criteria: merit based; must be a member of the LSSU hockey team, preference given to residents of Chippewa, Luce or Mackinac County of Michigan, consideration will be given to candidates who have played hockey for at least one season in the Sault Amateur Hockey Association or for secondary institution in the listed counties of preference, freshmen or transfer students or current students with a minimum 3.0 GPA, financial need may be considered.

Selected by: recommendation of the LSSU Hockey Coach and LSSU Athletic Director

Ruth Norvell Endowment Fund

Value: variable — non-renewable

Criteria: merit and need based; must be a walk-on or partially-funded student athlete and have been accepted as a member of the LSSU NCAA Division I Laker ice hockey team; must maintain an academic standing equal to the NCAA requirements for participation; award may be renewed if all conditions are met following year

Selected by: recommendation of the LSSU Hockey Coach and LSSU Athletic Director

Dr. Harry Pike Award

Value: variable — non-renewable

Criteria: merit based; Michigan residents; preference given to students with financial need

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

Selected by: recommendation of the Athletic Department

Gil Somes Endowed Award

Value: variable — non-renewable

Criteria: full-time student working as a student equipment manager or student athletic trainer for the LSSU Athletic Department; minimum cumulative 2.50 GPA; preference given to student with demonstrated

financial need; if there is no eligible candidate, a student-athlete working with the Athletic Department may be considered

Selected by: recommendation of the Athletic Department

Chris Yanni Memorial Award

Value: variable — non-renewable

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

Selected by: recommendation of the Athletic Department

Biology, Chemistry, Fisheries and Wildlife

Anglers of Au Sable Fisheries Scholarship

Value: Up to \$1,200 – Non-renewable

Criteria: Must be a Michigan resident and full time student of senior status majoring in the Fisheries and Wildlife Management program, with a focus on fisheries

Curriculum: Fisheries and Wildlife Management

Selected by: recommendation from the Biological Sciences faculty

Dr. Kevin and Pamela Cooper Professional Scholarship

Value: Up to \$2,000 - Non-renewable

Criteria: Must be enrolled in the LSSU pre-dentistry program. Preference will be given to students who are graduates of a Michigan Upper Peninsula high school

Curriculum: Pre-dentistry. If there is no eligible pre-dentistry student, then pre-medicine. If no pre-dentistry and pre-medicine student, then a student who is majoring in a biological sciences program will be considered

Selected by: recommendation from the Biological Sciences faculty

Dr. Arthur Duwe Memorial Scholarship

Value: variable — non-renewable

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

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

Selected by: recommendation of the School of Biological Sciences

Norma & Weldon Fritch Scholarship

Value: variable – non-renewable

Criteria: merit based; must have earned at least 56 LSSU credits; U.S. citizen with preference to Michigan residents; preference to students with financial need.

Curriculum: Geology; if none then any natural science program

Selected by: recommendation of the Geology faculty

Gilbert Gleason Fisheries and Wildlife Scholarship

Value: variable — renewable for senior year

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

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

Selected by: recommendation of the School of Biological Sciences

William R. Gregory Scholarship

Value: variable — renewable

Criteria: merit based; junior status, minimum 3.0 GPA

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

Selected by: Financial Aid Committee through scholarship sign-up

Headwaters Chapter of Trout Unlimited Fisheries Scholarship

Value: \$500 — non-renewable

Criteria: merit based; senior status, resident of Michigan, preference given to students from the Headwaters Chapter of Trout Unlimited service area (Otsego, Cheboygan, Presque Isle, Alpena and Montmorency counties)

Curriculum: fisheries and wildlife with focus on fisheries

Selected by: recommendation of the School of Biological Sciences

Hiawatha Sportsman's Club Fisheries and Wildlife Scholarship

Value: \$1,000 — non-renewable

Criteria: merit based; at least sophomore status; preference given to graduates of Engadine or Newberry High School and those who have participated in the HSC fish and wildlife study trip

Curriculum: fisheries and wildlife management program

Selected by: recommendation of the School of Biological Sciences

John Lehman Chemistry Scholarship

Value: variable — non-renewable

Criteria: merit and need based; special application and letter required

Curriculum: chemistry or environmental chemistry

Selected by: recommendation of the Department of Chemistry and Environmental Sciences

Mary Lubs and Viggo Thomsen Endowed Scholarship

Value: \$1,000 per year — renewable

Criteria: merit and need based; must be at least sophomore status

Curriculum: biological sciences, pre-pharmacy, pre-medical or pre-dental

Selected by: Financial Aid Committee through scholarship sign-up

Edward & Jill Smith Scholarship

Value: variable — renewable

Criteria: merit based; earned 56 LSSU credits with minimum 3.0 GPA; preference to graduate of Michigan high school.

Curriculum: pre-med concentration

Selected by: recommendation by the School of Biological Sciences

SMO Foundation Endowed Scholarship

Value: variable — renewable

Criteria: merit and need based; sophomore status; must be a resident of Chippewa,

Mackinac or Luce County; minimum 3.5 GPA

Curriculum: pre-medicine or pre-pharmacy

Selected by: Financial Aid Committee through scholarship sign-up

Izaak Walton League of America Lock City Chapter Endowed Scholarship

Value: variable — non-renewable

Criteria: merit and need based; graduate of Sault Area High School with 26 earned LSSU credits, minimum 3.0 GPA

Curriculum: fisheries and wildlife management

Selected by: Financial Aid Committee through scholarship sign-up

Business and Economics

Bollin Family Marketing Award

Value: up to \$1000 — non-renewable

Criteria: merit based, minimum 2.0 GPA, must complete application and submit appropriate marketing course of SIFE project with application

Curriculum: marketing

Selected by: recommendation of the School of Business

Lisa Davidson and Sherry Brooks Nursing & Accounting Scholarship

Value: \$1000 – non-renewable

Criteria: merit based; must have earned at least 56 LSSU credits; preference to students with financial need

Curriculum: Accounting or Nursing

Selected by: Financial Aid Committee through scholarship sign-up

Central Savings Bank Scholarship

Value: variable up to tuition and books — renewable

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

Curriculum: finance and economics

School of Business/Lambda Scholarship

Value: \$500 per semester — non-renewable

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

Curriculum: business

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

William R. Gregory Scholarship

Value: variable — renewable

Criteria: merit based; junior status, minimum 3.0 GPA

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

Selected by: Financial Aid Committee through scholarship sign-up

Warren Parker Family Scholarship

Value: variable — renewable

Criteria: need based; full-time student, earned at least 25 LSSU credits in business administration major, must have graduated from a high school in Chippewa, Mackinac or Luce county. Curriculum: business administration

Selected by: Financial Aid Committee through scholarship sign-up

Dr. Madan Saluja Endowed Scholarship

Value: Variable – Non-renewable

Criteria: Merit and need- based; Must be a member of the LSSU Track or Cross Country team with preference given to students pursuing a degree in a School of Business program

Curriculum: School of Business program

Selected by: A committee consisting of the LSSU Athletic Director, LSSU Track & Cross-Country Coaches and a member of the School of Business faculty

Judson "Bucky" Swart Soo Lions Club Memorial Scholarship

Value: variable — renewable
Criteria: merit based; graduate of a Chippewa, Luce or Mackinac county high school with 26 earned LSSU credits
Curriculum: business and/or economics
Selected by: Financial Aid Committee through scholarship sign-up

Daune Weiss Memorial Scholarship

Value: variable — non-renewable
Criteria: merit based; preference given to students from Otsego and Mackinac counties
Curriculum: elementary/secondary education or business
Selected by: Financial Aid Committee through scholarship sign-up

Counseling Center

Margaret Haag Memorial Endowed Scholarship

Value: \$250 – non-renewable
Criteria: must be an LSSU chemistry tutor; must have successfully completed each course they tutor with a "B" grade or higher, must possess excellent interpersonal skills and a desire to help students succeed academically.
Selected by: Dean of Academic Services and Learning Center Director

Edwin Peterson Endowment Scholarship

Value: \$350 - non-renewable
Criteria: must be an LSSU chemistry tutor; must have successfully completed each course they tutor with a "B" grade or higher, must possess excellent interpersonal skills and a desire to help students succeed academically.
Selected by: Dean of Academic Services and Learning Center Director

Criminal Justice

Stephen Bell Memorial Scholarship

Value: variable — renewable
Criteria: merit based; Michigan resident; must have earned 26 LSSU credits, minimum 3.0 GPA; preference given to students with financial need and residents from the Eastern Upper Peninsula
Curriculum: fire science; if not available, a student majoring in criminal justice may be considered
Selected by: recommendation of the School of Criminal Justice, Fire Science, and EMS

John Weir (Sault Police Department) Memorial Scholarship

Value: \$250 or higher – non-renewable
Criteria: must be a graduate of the LSSU Criminal Justice Program and current MCOLES academy cadet; must be active in extracurricular activities and exhibit outstanding citizenship; preference to students who were first generation college students in their family.
Selected by: recommendation from the LSSU Criminal Justice faculty to the Financial Aid Committee

Harold Weiss Memorial Scholarship

Value: variable — renewable
Criteria: merit and need based; minimum 3.0 GPA, Michigan resident
Curriculum: criminal justice
Selected by: Financial Aid Committee through scholarship sign-up

Education

Rebecca "Becca" Arms Scholarship

Value: \$500 – non-renewable
Criteria: merit based; preference to students with financial need; preference to Michigan residents; preference to students who are

members of the Sigma Lambda Sigma sorority.
Curriculum: early childhood education or elementary education
Selected by: Financial Aid Committee through scholarship sign-up

Marion Strahl Boyer Scholarship

Value: variable — renewable up to two years
Criteria: merit and need based; first preference will be given to a student from the Upper Peninsula of Michigan; non-traditional student preferred or must be at least a junior (56 credits earned); minimum 3.0 GPA
Curriculum: English or pursuing a teaching degree with an English minor
Selected by: Financial Aid Committee through scholarship sign-up

Georgia G. Gianakura Education Scholarship

Value: Variable – Renewable
Criteria: Merit and need-based; Must be majoring in the Teacher Education program with preference given to a student pursuing a mathematics teaching career.
Curriculum: teaching
Selected by: Financial Aid Committee

Robert O. Wallis C-MARSP Memorial Scholarship

Value: variable – non-renewable
Criteria: merit and need based; resident from Chippewa or Mackinac County; minimum 3.0 GPA; recipient asked to attend C-MARSP general membership meeting for presentation of the scholarship award
Curriculum: teaching
Selected by: recommendation from the School of Education

Daune Weiss Memorial Scholarship

Value: variable — non-renewable
Criteria: merit based; preference given to students from Otsego and Mackinac counties
Curriculum: elementary/secondary education or business
Selected by: Financial Aid Committee through scholarship sign-up

Engineering

ADD Software LLC Scholarship

Value: Up to \$500 – Non-renewable
Criteria: Merit and need-based; Must be a full-time student of junior status majoring in electrical engineering or computer engineering; with preference given to those in robotics program
Curriculum: Electrical or Computer Engineering
Selected by: recommendation from the Engineering faculty

Andersen Family Engineering Scholarship

Value: \$1200 — non-renewable
Curriculum: engineering
Selected by: recommendation of the School of Engineering and Technology

William R. Gregory Scholarship

Value: variable — renewable
Criteria: merit based; junior status, minimum 3.0 GPA
Curriculum: engineering, mathematics, business, biology or fisheries and wildlife management
Selected by: Financial Aid Committee through scholarship sign-up

Dennis Hardt Memorial Scholarship

Value: variable — renewable
Criteria: merit based; must have earned 26 LSSU credits, minimum 3.0 GPA
Curriculum: electrical engineering
Selected by: Financial Aid Committee through scholarship sign-up

Sven V. Heikkinen Engineering Scholarship

Value: \$500 — non-renewable

Criteria: merit based; minimum 3.0 GPA

Curriculum: engineering

Selected by: recommendation of the School of Engineering and Technology

John and Jan Madl Manufacturing Engineering Technology Award

Value: \$500 — non-renewable

Criteria: minimum 2.0 GPA; need based

Curriculum: manufacturing engineering technology

Selected by: recommendation of the School of Engineering and Technology

Precision Edge Surgical Products Company Engineering Scholarship

Value: variable – non-renewable

Criteria: merit based; must have earned 26 credits; preference to students with financial need.

Curriculum: engineering or engineering technology

Selected by: recommendation of the School of Engineering and Technology

Floyd and Joyce Starks Memorial Scholarship

Value: \$1,200 — non-renewable

Criteria: merit based; U.S. citizen, resident of Michigan, Indiana, Ohio or Wisconsin; minimum GPA of 3.25; sophomore status

Curriculum: electrical or computer engineering

Selected by: recommendation of the School of Engineering and Technology

Fire Science**Stephen Bell Memorial Scholarship**

Value: variable — renewable

Criteria: merit based; Michigan resident; must have earned 26 LSSU credits, minimum 3.0 GPA; preference given to students with financial need and residents from the Eastern Upper Peninsula

Curriculum: fire science; if not available, a student majoring in criminal justice may be considered

Selected by: recommendation of the School of Criminal Justice, Fire Science, and EMS

Geology**Norma & Weldon Fritch Scholarship**

Value: variable – non-renewable

Criteria: merit based; must have earned at least 56 LSSU credits; U.S. citizen with preference to Michigan residents; preference to students with financial need.

Curriculum: Geology; if none then any natural science program

Selected by: recommendation of the Geology faculty

Geology Club Scholarship

Value: variable — non-renewable

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

Curriculum: geology

Selected by: recommendation of the Department of Geology and Physics

John Kalesky Memorial Endowed Scholarship

Value: variable — renewable

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

Curriculum: geology

Selected by: Financial Aid Committee through scholarship sign-up

C. Ernest Kemp Endowed Scholarship

Value: variable — renewable

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

Curriculum: geology

Selected by: Financial Aid Committee through scholarship sign-up

Math and Computer Science

Marian and Raymond Chelberg Outstanding Science Athlete Scholarship

Value: variable — renewable

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

Curriculum: natural science or math

Selected by: recommendation of the Athletic Department

Faculty of Mathematics and Computer Science Scholarship

Value: up to \$1200 – non-renewable

Criteria: merit based; minimum 3.0 GPA

Curriculum: mathematics or computer science or math education

Selected by: recommendation from the School of Mathematics and Computer Science

William R. Gregory Scholarship

Value: variable — renewable

Criteria: merit based; junior status, minimum 3.0 GPA

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

Selected by: Financial Aid Committee through scholarship sign-up

Galen H. Harrison Scholarship

Value: Variable – Non-renewable

Criteria: Merit and need-based; Must be a new student that has been accepted by April 1st and graduating from Pickford High School. Must be majoring in biology, chemistry, geology, nursing, mathematics, computer engineering, computer science, electrical engineering, mechanical engineering, environmental chemistry, or environmental science.

Curriculum: Biology, Chemistry, Geology, Nursing, Mathematics, Computer Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Environmental Chemistry, or Environmental Science.

Selected by: Financial Aid Committee

Franklin F. and Wanda L. Otis Award

Value: variable — non-renewable

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

Curriculum: computer science or math

Selected by: recommendation of the School of Mathematics and Computer Science

Gerald Samson Mathematics Scholarship

Value: Variable – non-renewable

Criteria: merit based

Curriculum: computer and mathematical sciences

Selected by: recommendation of the School of Mathematics and Computer Science

School of Mathematics and Computer Science Scholarship

Value: variable — non-renewable

Criteria: merit based; minimum GPA 3.0

Curriculum: mathematics or computer science or math education

Selected by: recommendation of the School of Mathematics and Computer Science

Natural Resource Technology

Christopher W. Reinke Endowment Award

Value: variable – non-renewable

Criteria: merit and preference to needy students; sophomore status only; GPA between 2.0 and 3.0; sincere interest and dedication in the natural resources technology field

Curriculum: natural resources technology

Selected by: recommendation of the School of Biological Sciences

Nursing

Cunningham Nursing Scholarship

Value: \$1,000 per year – non-renewable

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

Selected by: recommendation of the School of Nursing

Vivian M. Day Endowed Nursing Scholarship

Value: variable – non-renewable

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

Selected by: recommendation of the School of Nursing

Lisa Davidson and Sherry Brooks Nursing & Accounting Scholarship

Value: \$1000 – non-renewable

Criteria: merit based; must have earned at least 56 LSSU credits; preference to students with financial need

Curriculum: accounting or nursing

Selected by: Financial Aid Committee through scholarship sign-up

Tempie Dubow Memorial Scholarship

Value: variable – non-renewable

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

Curriculum: nursing

Selected by: recommendation of the School of Nursing

Alana Eitrem Memorial Endowment Award

Value: variable – renewable

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

Curriculum: nursing

Selected by: recommendation of the School of Nursing

Donald and Catherine Finlayson Nursing Scholarship

Value: variable – non-renewable

Criteria: merit based; preference given to student with Upper Peninsula of Michigan ties, demonstrated empathy with patients and financial need

Curriculum: nursing

Selected by: recommendation of the School of Nursing

Hospice of the Eastern Upper Peninsula Scholarship

Value: up to \$1,000 – non-renewable

Criteria: merit based; minimum GPA of 3.0; junior or senior status in the nursing program; at least six credits per semester, must submit an essay indicating interest in Hospice

Curriculum: nursing

Selected by: recommendation of the School of Nursing

I-500 Parking Committee LPN Award

Value: \$500 – non-renewable

Criteria: minimum 2.0 GPA; must be a graduate of a Chippewa, Mackinac, or Luce County high school or GED program; preference given to those with financial need

Curriculum: LPN program

Selected by: recommendation of the School of Nursing

Dixie Stanley Light and Morton Light Nursing Growth Scholarship

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

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

Curriculum: nursing post-licensure track

Selected by: recommendation of the School of Nursing

Mackinac Straits Oncology Nursing Scholarship

Value: Up to \$500 – Non-renewable

Criteria: Must be a senior in the nursing baccalaureate program. Preference given to a student with interest in oncology nursing

Curriculum: nursing

Selected by: Recommendation from the Nursing department

May Mitchell Royal Foundation Nursing Scholarship

Value: full tuition up to \$7,000 – non-renewable

Criteria: merit based; must have earned at least 26 credit hours at LSSU; preference given to those with financial need

Curriculum: nursing

Selected by: recommendation of the School of Nursing

Nancy Mongene and Russell J. Pattison Nursing Scholarship

Value: \$1,000 – non-renewable

Criteria: merit based; preference given to students pursuing a career in the public health care sector; must be a graduate of a Michigan Upper Peninsula high school

Curriculum: nursing

Selected by: recommendation of the School of Nursing

Patrick and MaryAnne Shannon Nursing Scholarship

Value: variable – non-renewable

Criteria: merit based; junior status, preference given for students interested in gerontological nursing, minimum 3.0 GPA

Curriculum: nursing

Selected by: recommendation of the School of Nursing

Lynn Stepping Memorial Award

Value: Variable – Non-renewable

Criteria: Must be a nursing student with junior status and non-traditional age

Curriculum: nursing

Selected by: Nursing Department

TenEyck-Guilliver Scholarship

Value: variable – renewable

Criteria: merit based; sophomore status or higher; Michigan resident preference given to those with financial need

Curriculum: nursing

Selected by: recommendation of the School of Nursing

War Memorial Hospital Auxiliary Nursing Scholarship

Value: \$500 – non-renewable

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

Note: If there is no qualifying candidate, a graduate from an EUP high school may be considered

Curriculum: nursing

Selected by: recommendation of the School of Nursing

War Memorial Hospital Medical Staff Nursing Scholarship

Value: variable – renewable

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

Curriculum: nursing

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

War Memorial Hospital Nursing Intern Scholarship

Value: up to \$4,000 – non-renewable

Criteria: merit based; must be a nursing student with junior or senior status; must have completed a nursing internship at War Memorial Hospital

Curriculum: nursing

Selected by: recommendation of the School of Nursing

Waybrant Family Licensed Practical Nurses (LPN) Scholarship

Value: variable – non-renewable

Criteria: merit based; must be a graduate of a Chippewa, Mackinac or Luce County high school or GED program; preference given to students with financial need

Curriculum: LPN program

Selected by: recommendation of the School of Nursing

Political Science

Patrick M. Gagliardi Scholarship

Value: variable – renewable

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

Curriculum: political science

Selected by: recommendation of the Political Science faculty

Osborn Scholarship in Political Science

Value: \$100 – non-renewable

Criteria: merit based

Curriculum: political science

Selected by: recommendation of the Political Science faculty

Psychology

Donald Hastings Memorial Scholarship

Value: variable – non-renewable

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

Curriculum: junior majoring in psychology
Selected by: recommendation of the Psychology faculty

Recreation

Russell D. Bruce Scholarship

Value: variable – non-renewable

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

Curriculum: recreation

Selected by: recommendation of the School of Recreation Studies and Exercise Science

Social Sciences and Human Services

Carl and Bernitta Burt Scholarship

Value: variable – renewable

Criteria: merit and need based; resident of Michigan; preference to residents of Eastern Upper Peninsula

Curriculum: arts and letters or social sciences

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

Osborn Scholarship in Political Science & History

Value: variable – non-renewable

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

Curriculum: political science or history

Selected by: recommendation of a committee of political science and historians appointed by the Dean of the College of Arts, Letters, and Social Sciences

Tendercare Endowment

Value: variable – renewable

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

Curriculum: health and human services

Selected by: Financial Aid Committee through scholarship sign-up

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

Kurt and Mary Brammer Scholarship

C. Eugene Chang International Studies Scholarship

Fine & Performing Arts Scholarship

H. Fletcher Distinguished Scholarship

Philip Hart Memorial Scholarship

Frank & Gladys Hoholik Scholarship

David R. & Patricia L. Hubbard Award

Hudson, Coates, Kline Scholarship

Robert M. Hunt Memorial Scholarship

George & Virginia Lahodny Endowment Scholarship

Larson/Prohazka Scholarship

LSSU Foundation Endowed Scholarship

LSSU Support Staff Award

Bill Munsell Scholarship

Leslie O'Polka Memorial Scholarship

Frank & Marion Pingatore Memorial Scholarship

Ross N. Roe Scholarship

Sault/Loretto High School Scholarship

Dr. Kenneth J. Shouldice Memorial Scholarship

LSSU scholarship information is available at www.lssu.edu. Visit the website for details on new scholarships.

Memorials

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

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

Grant Programs

The Lake Superior State Board of Trustees' Grant Program

This program provides assistance to incoming and currently enrolled students based on financial need. The grant is considered a form of "priority aid", requiring the on-time filing of the FAFSA each year by March 1st. Recipients must be Michigan residents and enrolled full time in Lake Superior State University classes.

Federal Pell Grant

All students filing the FAFSA are automatically reviewed for Pell Grant eligibility. Pell Grants provide assistance to which other forms of aid may be added.

Pell Grant amounts vary according to the year (\$595-\$5920 for 2017-18) and number of credits enrolled in each semester.

To be eligible for a Pell Grant, students must:

1. be determined to have financial need.
2. be undergraduates accepted for admission and enrolled in eligible programs and meet satisfactory academic progress standards.
3. be U.S. citizens or permanent residents or qualified Jay Treaty students.
4. not be in default on a Federal Direct Stafford or Perkins Loan, and not owe a refund for a Pell Grant or other federal aid.
5. not be disqualified due to prior drug offense convictions.

There is a limit to the total amount of Federal Pell Grant that a student may receive in their lifetime, which is the equivalent to 6 full time school years.

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 online at www.fafsa.gov.

Federal Supplemental Educational Opportunity Grant (FSEOG)

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 \$1000 in any one year).

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

FSEOG is a priority fund that is distributed first to students who file their FAFSA by March 1st.

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

Federal Occupational Education Program (OCED)

The Perkins Grant Program provides OCED funding for students with demonstrated financial need, as determined by filing the Free Application for Federal Student Aid

(FAFSA), and who are enrolled in certain associate's degree programs. Students who qualify for the Federal Pell Grant and have earned less than 72 credits will automatically be considered if enrolled in one of the following associate's degrees:

- Criminal Justice - Corrections
- Criminal Justice - Law Enforcement
- Early Childhood Education
- Fire Science
- Health Care Provider
- Manufacturing Engineering Technology
- Natural Resource Technology
- Small Business Administration
- Substance Abuse Prevention and Treatment
- Technical Accounting

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

Michigan Tuition Incentive Program (TIP)

The Tuition Incentive Program (TIP) is an incentive program that encourages eligible students to complete high school by providing tuition assistance for the first two years of college and beyond. To meet the financial eligibility requirement, a student must have (or have had) Medicaid coverage for 24 months within a 36-consecutive-month period as identified by the Michigan Department of Human Services (DHS). TIP provides assistance in two phases:

Phase I covers tuition and mandatory fee charges for eligible students enrolled/taking classes in a credit-based associate degree or certificate program at participating Michigan community college, public university, degree-granting independent college, federal tribally-controlled college, or Focus: HOPE.

Phase II provides a maximum of \$2,000 total tuition assistance for credits earned in a four-year program at an in-state, degree-granting college or university.

Awards are subject to legislative changes.

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.

Loans

Federal Perkins Loan

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

Students may borrow up to \$5,500 for each year of undergraduate study. The lifetime loan limit for undergraduates is \$27,500. The amount awarded by the University is generally less due to limited funds.

Repayment begins nine months after students graduate or drop below half-time enrollment. 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 you :
 1. are unable to find full-time employment.
 2. are experiencing economic hardship.
 3. are active in certain military service.

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, firefighters,
5. death or disability of the student,
6. full-time staff of Head Start Educational Program,
7. full-time provider of services to high-risk children at a child or family service agency,
8. certain military service,
9. public defenders,
10. certain speech pathologists,
11. certain librarians,
12. faculty member at a tribal college,
13. volunteer service.

Federal Direct Stafford Loan (Student)

Qualified applicants must be a United States citizen or eligible alien. Students may borrow up to \$5,500 the first year of undergraduate study, \$6,500 as a sophomore and \$7,500 as a junior or senior. The lifetime maximum amount is \$31,000 for dependent students and \$57,500 for independent undergraduate students.

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

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

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

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

Repayment begins six months after graduation or the date the student attends school less than half-time. Interest rates are set each June for the following academic year.

Federal Direct PLUS Loan (Parent)

Parents may borrow up to the difference between the cost of education and other financial aid for which the student is eligible. The interest rate is adjusted annually for new loans; the 2017/18 fixed interest rate is 7.0%.

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

An origination fee is deducted from each of two disbursements made in a school year. Repayment begins within 60 days of disbursements, or may be deferred until six months after student graduates or drops below half time. Interest rates are set each June for the following academic year.

Federal Nursing Student Loan

The Nursing Education Loan Program provides loans of up to \$5200 a year for bachelor's degree or completion nursing programs. Payment assistance is available by annual application to the Department of Health and Human Services at hrsa.gov/loanscholarships/repayment. Eligibility requirements include United States citizenship, enrollment of at least half-time and demonstrated financial need.

Federal TEACH Loan Forgiveness Program

The TEACH Grant is a Loan Forgiveness Program for students who plan to become teachers in certain fields and for teachers who are seeking a graduate degree.

Qualified students may borrow up to \$4,000 per year if full time, prorated for part time.

Maximum of \$16,000 for undergraduate student.

Maximum of \$8,000 for Masters with lifetime limit of \$24,000.

Award becomes an unsubsidized federal student loan with interest accruing from initial point of disbursement if student does not meet forgiveness criteria within eight years.

Qualifications:

1. Student must be admitted into an approved major- see list on website @ www.lssu.edu/financial-aid.
2. Student must have scored above 75th percentile on admissions test or Graduate Records Exam (GRE). Submit a copy of your original ACT results clearly showing your score above the 75th percentile.
3. Student who did not meet the test criteria must have a cumulative GPA of 3.25 or higher.
4. If qualified by GPA, must meet that minimum each semester.
5. Student must complete Entrance Counseling, Interim and Exit Counseling.
6. Student must complete Agreement to Serve each year.

Criteria for forgiveness of loan for students:

1. Must complete four years of teaching within eight years of finishing program.
2. Must perform teach service as a highly-qualified teacher.
3. Must teach in a high-need subject area for at least four years at a school serving low-income students.
4. Must be a full-time teacher with majority of time spent teaching one of the high need subjects:
 1. Bilingual Education and English Language Acquisition
 2. Foreign Language
 3. Mathematics
 4. Reading Specialist
 5. Science
 6. Special Education
 7. Other teacher shortage areas documented as high need by Federal, State or local education agency and listed in Department of Education Annual Teacher Shortage Area Nationwide at the time the student begins teaching.

Canada Student Loan

Canadian students who need financial help to earn a degree at Lake Superior State University may apply for aid through the Ontario Student Assistance Program (OSAP).

To qualify for a loan, the student must:

1. be a Canadian citizen or have landed immigrant status;
2. be a resident of a province that participates in the plan;
3. have attained a satisfactory scholastic standard;
4. be enrolled, or qualified to enroll in a post-secondary course of studies;
5. be taking at least 60 percent course load (eight credits);
6. complete an application for OSAP at osap.gov.on.ca;
7. bring Program Information Form to the LSSU Registrar's Office to be completed and mailed by LSSU.

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

Application forms are available on-line at www.osap.gov.on.ca.

Short-Term Educational Loan

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 \$300 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 service charge is assessed on all loans.

Student Emergency Fund

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

Campus Employment

Federal Work-Study

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

Students may work up to 19 hours weekly while attending classes at least 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.

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

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

Campus Job Opportunity

If you are interested in working on campus, but do not qualify for work study, you may be employed under the Campus Job Opportunity Program. Students must be enrolled full-time, and may work up to 19 hours per week. During the summer and other vacation periods, students may work up to 40 hours per week.

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 \$2,000 during the school year and up to \$4,600 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.

Programs for Native Americans

Bureau of Indian Affairs Scholarship Grant

Members or those eligible for membership in a federally recognized tribe showing need, may apply for Bureau of Indian Affairs Scholarship Grants by contacting their tribal education office for an application. It is possible to receive up to full university expenses per year in scholarship grants if financial need is demonstrated.

All applicants must complete a Free Application for Federal Student Aid (FAFSA).

Bureau of Indian Affairs Vocational Training Assistance

Native students enrolled in certificate or associate degree programs are eligible for assistance to pay for tuition, books and living expenses. You must be a member or eligible for membership in a federally recognized tribe.

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

Michigan Indian Tuition Waiver

As of July 1, 2010, Michigan Indian Tuition Waiver applications are processed by the Department of Civil Rights. To be eligible for the MITW, you must meet the following criteria:

- You must be admitted to LSSU AND
- You must be 1/4 or more Native American blood quantum as certified by your Tribal Enrollment Department AND
- You must be a legal resident of the state of Michigan for not less than 12 consecutive months and provide proof of Michigan residency upon request of the Financial aid Office.

Waiver requests must be received and complete prior to the census date each semester. Applications are submitted to your Tribal Education Department.

Veterans Educational Benefits

Lake Superior State University's VA Certifying Official acts as a liaison between the Department of Veteran Affairs and eligible students. Student eligibility for veterans educational benefits is determined by the United States Department of Veterans Affairs. Students who believe they are eligible for veterans educational benefits are encouraged to contact the U.S. Department of Veterans Affairs and the Michigan Department of Military and Veterans Affairs for educational assistance programs. Additional information is available at LSSU's [Veterans Benefits website](#).

A Veterans Educational Benefits recipient must be admitted into a degree program or as a guest student. The student is required to provide the University's VA Certifying Official with a degree audit form from their department. All transfer credit is evaluated and recorded as "credit for previous training". Classes may not be repeated if passing grades were received. Each semester the student must provide a completed certification form of scheduled classes within their declared major to the University's VA Certifying Official. The student must also notify the University's VA Certifying Official of any change to their scheduled classes, academic program, or withdrawal from the University. These activities along with attendance are monitored and reported to the U.S. Department of Veterans Affairs.

Students who are receiving VA Educational Benefits are expected to pay tuition and fees by the payment deadline date established by the University each semester, with exception to the following:

- Students receiving Post 9/11 Benefits and have a current semester course certification on file in the Registrar's Office will automatically receive a deferment on tuition and fee payment until payment arrives from the VA.
- Students participating in the Vocational Rehabilitation Program, Chapter 31 will not receive late fees for any charges eligible for payment in accordance with VR&E.

Standards of Progress requirements for recipients of Veterans educational benefits follow the University's "Academic Probation and Dismissal Policy" as stated. If a student fails to meet these standards, the University's VA Certifying Official must notify the U.S. Department of Veterans Affairs and the student's benefits will be terminated for unsatisfactory progress.

Costs

Links

- [Costs Website](#)
- [Financial Aid Website](#)
- [Business Operations Website](#)
- [Registrar's Office Website](#)

Overview

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

Residency Policy for Tuition Purposes

Effective the Fall Semester 2018, Lake Superior State University offers a one rate tuition for all students worldwide.

Policy: Tuition/Fees

All tuition and fees are payable according to established due dates. Students are required to agree to a financial responsibility statement before registering for any classes at LSSU. Students delinquent in payment of a financial obligation are subject to enrollment cancellation and/or late fees until all amounts due the University are paid or satisfactory arrangements are made with Business Operations.

Anyone who is delinquent in any obligation to the University will not be allowed to register for classes. Additionally, University services will not be provided until financial obligations are met. Registration is not complete until fees are paid. A check or draft returned to the University and not honored by the bank constitutes nonpayment and may result in cancellation of registration.

Students auditing a class are assessed the Audit Class Tuition Rate and applicable fees for the course. A grade of AU is recorded on the student's official transcript upon completion of the course. Michigan residents who are 60 years of age or older may audit undergraduate courses compliments of LSSU. The student will be responsible for any associated fees.

In addition to tuition, there are various fees assessed to students in specific situations.

Activity Course Fee: The activity course fee is an additional charge applied to one-credit courses in music and recreation. This activity fee is assessed on all students enrolling in one-credit music (one-credit activity and performance courses with an MUSC prefix, except MUSC210) or one-credit recreation (one-credit activity courses with an RECA prefix) classes.

Administrative Fee: Administrative fees will be charged for departmental exams.

Distance Education Fees: These fees are charged to offset the costs of non-traditional modes of instruction, including any course listed as online, interactive t.v., or courses recorded for future distribution and viewing. Distance Education Fees are not charged on any course in which Regional Center Fees are also assessed.

New Student Administrative Fee: The new student administrative fee is a one-time fee used to offset administrative and programmatic costs associated with transitioning new students into the University. The new student administrative fee is assessed on all new and transfer undergraduate students when they are admitted to a degree program.

Late Fee: Students who do not make payment or enroll in a payment plan by the due date will be charged a 1.5% late fee. For each month thereafter, the University will charge an additional 1.5% late fee for any outstanding balance on the 16th of each month and a hold will be placed on the student's account until full payment is made. The hold prevents registration into classes for subsequent semesters and inability to receive a copy of a University transcript. Balances still outstanding after 90 days will be turned over to collections.

Students who are receiving VA Education Benefits are expected to pay tuition and fees by the payment deadline date established by the University each semester, with exception to the following:

- Students receiving Post 9/11 Benefits and have a current semester course certification on file in the Registrar's Office will automatically receive a deferment on tuition and fee payment until payment arrives from the VA.
- Students participating in the Vocational Rehabilitation Program, Chapter 31 will not receive late fees for any charges eligible for payment in accordance with VR&E.

Late Registration Fee: The Late registration period is defined as the period after the first payment due date for each semester until the close of the six day add/drop period. For the fall semester, the first due date is August 15. For the spring semester the first due date is December 15. No late registration fees are charged for the summer semester. Students who register in person or online during the late registration period are assessed a \$100 late registration fee. Students who register for classes after the six day add/drop period will be assessed a late registration fee of \$200.

Liability Insurance Fee: The liability insurance fee is a one-time per semester charge for students enrolled in select biology, emergency medical services, kinesiology, and nursing courses that involve direct student/patient contact.

Non-Sufficient Funds (NSF) Fee: A NSF fee will be assessed for any check or bank draft returned due to insufficient funds.

Program Fees: The program fee is an additional charge per credit for courses in accounting, biology, Business, cannabis business, cannabis chemistry, chemistry, culinary, economics, emergency medical services, engineering, environmental science, finance, geology, international business, kinesiology, management, marketing, natural resources, natural science, physics, and nursing.

Regional Center Fee: The regional center fee is an additional charge per credit, charged for courses delivered by instructors at the regional centers. The regional center fee is assessed on all students registering for a course at an LSSU Regional Center.

Special Course Fee: Special course fees are charged to cover costs of supplies, equipment, maintenance, and student transportation over and above the normal costs for all courses. These fees become part of the department supply and equipment budget. Special course fees are assessed on students taking the course for which the fee is charged.

Student Activity and Media Fee: This fee was requested by the Student Government and approved by the Board of Trustees on June 30, 2003, to support

Student Government, student activities, the student radio station WLSO, and the student newspaper, The Compass.

The student activity and media fee is a flat fee assessed on all enrolled students except those registered for internship classes, for classes at a regional center, or dually-enrolled at LSSU and a high school.

Vehicle Registration Fee: This fee entitles a student to register one student vehicle to be parked in a campus parking lot.

The fee is refunded only under certain conditions. Vehicle registration information is available at <https://www.lssu.edu/public-safety/parking/>.

Withdrawal/Refunds

If you decide to drop your classes, you must complete the following:

1. Pick up a Withdrawal Form at the Registrar's Office, located in the Fletcher Center for Student Services.
2. Gather the required signatures (shown on the form). Note: if you have received federal loans as financial aid, you will be required to complete an exit interview at the Financial Aid Office. You may also be required to speak with a financial aid officer. You will need to provide the complete addresses and phone numbers of two people (living at different addresses) as references for the exit interview process.
3. Deliver the completed form to the Registrar's Office and clear any outstanding charges or holds that may prevent your return at a later date or prevent the release of your academic records. Your withdrawal date will be determined by the date the completed form is submitted to the Registrar's Office. Any refunds will be calculated as of that date. Federal Title IV financial aid refunds will be calculated based on the last day of attendance as reported by the instructors.

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

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

All withdrawals should be done in person. If you are unable to complete the process in person, the Registrar is the only University authority that can authorize the process of your withdrawal over the phone. Please contact the Registrar's Office at 906-635-2682 for assistance. If you are a federal financial aid recipient, you will need to complete your exit process with the Financial Aid Office.

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

Financial Aid Return Policy: Applies to students receiving federal and state financial

aid including loans and scholarships, and institutional and private aid.

- First, your account will be credited according to Lake Superior State University's Refund Policy (on or prior to the 38-day withdrawal period). The summer semester refund policy is shortened.
- Then, your federal financial aid will be reduced in direct proportion to the length of time you remained enrolled, up to 60 percent of the semester, following the Federal R2T4 policy. Federal student loans, parent loans and federal grants will be returned to the federal government on your behalf for the portion of time you are not attending classes in the semester.
- If you have any Michigan or institutional financial aid, your aid will be reduced according to the university refund policy. Private and other state scholarships and grants will follow the refund rules or restrictions on the funds.
- PLEASE NOTE: If you have received a payment for excess financial aid and you withdraw, you could owe the University and/or the federal government money.
- Any remaining refund, after all funding sources have received the appropriate credit, will be refunded directly to you.

For example: If there are 101 days in the semester and you withdraw on the 45th day, your federal aid would be reduced to 45% (45/101). If your total cost to attend was \$4,000 and it was paid with federal aid of \$2,400 and a personal payment of \$1,600, your federal aid would be reduced to \$1,080. You could owe the University \$1,320.

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

If you fail to demonstrate attendance by earning credits for a semester while receiving federal aid, your aid may be returned and you may owe unearned funds back to the University.

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

Students who fail to earn credits for the semester while receiving financial aid are subject to Title IV refund requirements and may lose all or part of their financial aid.

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

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

Room and Board Applications

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

The exceptions are:

1. if you live with parents within a 60-mile radius, or the three-county (Luce,

Chippewa, and Mackinac) service area of the University campus. An exemption application, available in the Housing Office, must be approved by the Associate Director of Campus Life and Housing.

2. if you are exempted in writing by the Associate Director of Campus Life and Housing when residence hall space is filled.
3. if you face unusual financial or health problems and are exempted by the Associate Director of Campus Life and Housing.

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 the first room and board payment is not received by June 1st (May 1st for returning students). If application is canceled by notification to the Director of Campus Life and Housing by June 1st (May 1st for returning students), all monies paid will be refunded. If cancellation is between June 1st (May 1st for returning students) and the opening of the residence halls, LSSU retains \$100. Cancellation after the halls open is subject to a \$500-\$750 penalty. You must be accepted for admission and be enrolled in and attending classes to live on campus.

Room and board: Students are billed for room and board and tuition each semester. A payment plan may be set up with Business Operations located in the Fletcher Center.

Housing deposit: If you are living on campus, there is a \$150 damage deposit prior to checking into the hall. This deposit is refunded, less monies owed to the University, when you leave campus housing.

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

Academic Services

- [ALEKS](#)
- [Accessibility Services](#)
- [Career Services](#)
- [LSSU Official Bookstore](#)
- [Computer Services \(IT\)](#)
- [Academic Success Center](#)
- [Library \(Kenneth J. Shouldice\)](#)
- [Moodle](#)
- [Study Abroad](#)
- [Testing Services](#) - *includes placement testing*

Placement Chart

[Placement Chart](#)

Campus Life

Campus 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 60 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, golf, tennis and track for men and women; ice hockey for men; and volleyball for women. 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.

- [Campus Life Office](#)
- [Counseling Service](#)
- [Student Government](#)
- [Recognized Organizations](#)
- [Housing](#)
- [Dining Services](#)
- [Athletics](#)
- [Health Services](#)

The LSSU Ombudsman

If you're a student in need of assistance to resolve a conflict or dispute within the University then you should contact the LSSU Ombudsman. The Ombudsman is a senior faculty member appointed by the President and Provost to assist students in resolving these types of issues. The Ombudsman carries out these duties in a neutral, impartial, confidential, informal and independent manner.

What does an Ombudsman do?

Following a request for assistance, the Ombudsman will take one or more of the following actions: (1) listen carefully to the concern, (2) explain relevant student rights and responsibilities, (3) review relevant University policies or regulations, (4) suggest fair and equitable options, (5) refer the individual to an appropriate university resource or (6) investigate, when necessary.

Specifically the LSSU Ombudsman:

- meets with the respective student and listens intently,
- discusses conflicts, disputes, and complaints that the student has about the functioning of the University, including policies, and procedures, the actions of others, and treatment that is unfair,
- helps the student identify and evaluate the options available to address his/her concerns
- works with the student to promote the development of critical thinking and problem solving skills,

- helps the student to understand their rights and will encourage and coach the student to work on their own behalf to resolve conflicts,
- answers questions or find others who are able to answer the respective questions,
- engages in shuttle diplomacy between parties who are finding it difficult to solve a problem between the two of them, or
- identifies problem areas, and areas of conflict, that exist within the University and makes recommendations to the University leadership.

Are there things the Ombudsman cannot do?

Yes. The Ombudsman is not an advocate for any group on campus; instead, the Ombudsman is an advocate for fairness. The Ombudsman also does not provide legal service, represent students or instructors at academic grievance or disciplinary hearings or mediate disputes between or among faculty or between faculty and administrators. The Ombudsman does not accept formal complaints, or notices, for the University.

Specifically the LSSU Ombudsman does not:

- administer sanctions,
- determine "guilt" or "innocence" of those being accused of wrong doing ,
- make academic or administrative decisions for other parts of the University
- give legal advice,
- participate in formal grievance processes, hearings or judicial processes,
- accept official "notice" for the University about issues,
- keep official University records and/or written accounts of individual meetings with students, or
- respond to subpoenas or other requests for information because of assertion of Ombudsman privilege.

How can I Contact the Ombudsman?

Students may contact the Ombudsman in person, by email, or by phone. Please remember that e-mail is not recommended for confidential discussions. The LSSU Ombudsman is:

Dr. Sally Childs
 Norris Center, Room 108D
 Phone #: 906-635-2610
 Email: schilds@lssu.edu

Other Information:

According to the International Ombudsman Association (www.ombudsassociation.org) Code of Ethics, an Ombudsman practices:

Independence

An Ombudsman is independent in structure, function, and appearance to the highest degree possible within the organization

Neutrality and Impartiality

The Ombudsman, as a designated neutral, remains unaligned and impartial. The Ombudsman does not engage in any situation which could create a conflict of interest.

Confidentiality

The Ombudsman holds all communications with those seeking assistance in strict confidence, and does not disclose confidential communications unless given permission to do so. The only exception to this privilege of confidentiality is where there appears to be imminent risk of serious harm.

Informality

The Ombudsman, as an informal resource, does not participate in formal adjudicative or administrative procedure related to concerns brought to his/her attention.

Academic Policies

Please familiarize yourself with the academic policies described in this catalog. They will help you obtain your educational objectives. Faculty advisors, staff and administrative personnel will also help you negotiate your way through these policies — seek their advice whenever you have questions!

Student Classifications

0 to 25 credits = freshman
26 to 55 credits = sophomore
56 to 87 credits = junior
88+ = senior

The Academic Year

Lake Superior State University operates on a semester system. There are two regular 15-week semesters (fall and spring) which begin in August or September and end in April or May. The summer semester consists of classes offered in two six-week sessions, or one 12-week session. Please view the [Important Dates](#) for specific information for each semester.

Credit Hour Policy

In accord with federal regulations, state guidelines and the Higher Learning Commission standards, LSSU defines a semester credit hour as follows:

A [semester] credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:

(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester, or the equivalent amount of work over a different amount of time; or

(2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward the award of credit hours. 34CFR 600.2 (11/1/2010)

<http://policy.hlcommission.org/Federal-Regulation/assignment-of-credits-program-length-and-tuition.html>

LSSU defines “one hour of classroom or direct faculty instruction” as 50-60 standard minutes. Hour totals for a course include time used for evaluations, tests and final examinations. The amount of credit awarded for any activity should be in keeping with the learning outcomes; evidence of student achievement must be documented.

Course learning outcomes are defined by the school and approved as part of a curriculum review process which includes recommendations from the University Curriculum Committee – a majority faculty body with representation from every school and the Administration. Outcomes are established independently of the modality of course delivery such that the credit hours for a course title will not change if the course is offered in face-to-face sessions with synchronous faculty-student interaction, in blended (hybrid) delivery, or in a fully online course.

Student-led tutoring, such as Supplemental Instruction or Structured Learning Activities, provides peer support to reinforce, expand and strengthen understanding of course content. Credit is not awarded for student-led tutoring, tutoring activities

do not contribute to calculation of course grade, and participation **cannot** be required.

The standard University semester is 15 weeks, including the final examination week. Courses scheduled for compressed schedules carry the same academic credit hours, meet the same student learning outcomes, and share the same expectations for an equivalent amount of work as defined by the semester credit hours, as a normally scheduled course.

All definitions and standards apply to all instructional modalities and instructional locations, including dual enrollment, Early-Middle College, Regional Centers, online, and blended (hybrid) courses.

TYPES OF COURSES (hours indicated represent the minimum requirements):

Clinical – courses that require observation, participation, client/pupil studies, etc. Specific programmatic accreditation requirements, or applicable state regulations may set higher standards, but shall not be lower than the base of 1 credit hour awarded for each three (3) hours of clinical experience per week for a total of 45 hours in a 15-week semester.

Individualized/Directed Study – courses that are based on consultation and guidance from an instructor with meeting times established as TBA. One credit hour shall be awarded for each three (3) hours of student work per week for a total of 45 hours in a 15-week semester.

Laboratory – courses where the instructor provides direct supervision of student creative or investigational work, whether individually or in small groups, in a controlled experiential learning environment requiring specialized equipment and/or facilities. Laboratory hours are determined by the amount of time the student would spend to conduct specific faculty directed activities, including the development of written laboratory reports. Travel to and from distant experiential learning locations is not part of laboratory time. One credit hour shall be awarded for each three (3) hours of student work per week for a total of 45 hours in a 15-week semester.

Lecture – courses focused primarily on one-way communication (irrespective of modality) from instructor to students, but may be combined with elements of in-class discussion or other individual or group learning activities. One credit hour shall be awarded for each one (1) hour of lecture combined with two (2) hours of out-of-class work per week for a total of 45 hours in a 15-week semester. The course syllabus should identify the out-of-class work required to meet the credit hour standard.

Lecture/Laboratory – courses which have both lecture and laboratory component have credit awarded as though each were considered separately. A course with a designation of SCIN100 Science (1,2) 2 cr would require for each of the 15 weeks, one (1) hour of lecture instruction per week, two (2) hours of student work outside of class per week for the lecture, two (2) hours per week of supervised laboratory instruction, and one (1) hour per week of student work outside of lab – for a total of 45 hours for lecture and 45 hours for lab – 90 hours total.

Recitation – an optional component of a course where the instructor provides guided study to reinforce and apply course content in problem solving and other activities similar to the assignments in the course. One credit hour shall be awarded for each one (1) hour of Recitation combined with two (2) hours of out-of-class work per week for a total of 45 hours in a 15-week semester. The course syllabus should identify the out-of-class work required to meet the credit hour standard.

Practicum/Internship – courses where the title or course description define the course as a practicum or internship, including cooperative education courses. Students receive credit for practical, degree-related experiences gained outside the

classroom or laboratory. One credit hour shall be awarded for each three (3) hours of student work per week for a total of 45 hours in a 15-week semester. Additional departmental requirements may also be denoted in the course description.

MODALITIES OF COURSE DELIVERY:

The credits awarded for a particular educational experience will be based on the credit determination derived from the course type, irrespective of the modality used for course delivery, including delivery through online and blended types.

Standard – a traditional modality for courses where the instructor meets and interacts with students in the same physical space for 100% of the instructional time. Sometimes referred to as face-to-face, grounded instruction it is always synchronous and may include lectures and/or structured whole class or group discussions and other activities. Courses delivered in a standard modality may incorporate the use of online learning management systems, like Moodle, to support student learning through activities such as the viewing of documents, participation in asynchronous discussions, and submitting assignments in fulfillment of the requirement for out-of-class student work.

Other – Courses which are not delivered in a traditional modality must meet the same credit-hour requirement as standard courses, including evidence of active student engagement through structured synchronous and/or asynchronous interactions with students. Such interactions may include web-based delivery, online learning management system tools such as chats, discussion boards, written responses to student posts, feedback on student writing and other course assignments, etc. "Time spent logged into a learning management system does not constitute active faculty teaching or active student learning."

Blended – a course modality where instructors interact with students in the same physical space for less than 100% of the instructional time with the remainder of the instructional time provided through forms of distance education. Sometimes referred to as hybrid courses, courses delivered in this modality must demonstrate active student engagement.

Online – a course modality where instructors interact with students for 100% of the course through one or more forms of distance delivery, including web-based interaction and online learning management systems.

Academic Transcripts

You may have an official copy of your permanent records sent to schools, companies and other places or persons of your choice. Student copy transcripts are issued directly to you and can be requested free of charge at the Registrar's Office in the Fletcher Center. You must show a picture I.D. Any financial or other obligations to the University must be cleared before a transcript is released. You may also print an unofficial transcript online using Anchor Access.

Student Curriculum Choice and Advising

When you apply for admission, you are asked to declare a major. The major you declare will determine 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 by processing a Major Change Form, available in Anchor Access and in the academic offices. Major Change Forms must be filed with the Registrar's Office for each major change. If you are unsure of your major, you will be assigned to the Liberal Arts-Unclassified major.

Semester Course Selection

Registration for the next semester takes place near the end of your current

semester.

Three weeks before registration, course schedules listing times, dates and locations will be available [online](#) and in Anchor Access. Review the class offerings, read the instructions for scheduling, and meet with your advisor to select courses for the next semester.

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

Please review all the registration information carefully as it has dates for registration according to class level, dates for tuition payments, and information regarding prerequisites, corequisites and other course requirements.

It is your responsibility to ensure that the classes you take count toward your degree program. You may, however, be required to take developmental courses (course numbers beginning with "0", such as MATH088), which will not count toward graduation.

Prerequisites: Many courses require that you complete English, reading and/or mathematics, or other preliminary classes before registering for the course. If you are currently enrolled in a course which is prerequisite to a course you need the following semester, you may register for the course on the presumption you will successfully complete the current course. If you do not earn the prerequisite grade required for the next course, you should consult your advisor and make a plan for an alternate course. Exceptions may be made only by the dean of the college or the instructor of the course.

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 appropriate dean. Students on academic probation should not take more than 15 credits per semester. Students having been academically dismissed and allowed to return are limited to 13 credits per semester.

Adding/Dropping courses through the Add/Drop Period: You may add or drop courses online using Anchor Access through the sixth day of the fall or spring semester. If you are attending a summer semester, you can add or drop courses online through the fourth day of the semester.

If you wish to add a course that is full or without having the necessary prerequisites, you must contact the instructor for that course to request permission. If the instructor approves the request, he/she will complete an Instructor Override for you. You must then go online and register for that course.

Courses dropped through the sixth day (fourth day for summer semester) will not appear on your academic transcript.

Adding courses after the Add/Drop Period of the semester: Online registration ends on the sixth day of the semester (fourth day for summer semester). If you wish to add a course after this date, you must have the instructor's permission. You will need to complete a Schedule Adjustment Form, have the instructor sign it giving permission, and then process the form at the Registrar's Office, located in the Fletcher Center for Student Services.

Dropping courses after the Add/Drop Period of the semester: You may drop a full-semester course during the first ten weeks of the semester. For courses running less than a full semester (e.g. seven-week class), check online for the official drop dates — the time period for dropping will be approximately equal to one-half of the course instructional period. If you drop a course, you will receive an N grade on your academic transcript. N grades are not counted in the academic GPA.

Dual Enrollment for High School Students

Effective July 2012, state law allows qualifying 9th and 10th grade students (in addition to 11th and 12th grade) to attend as dual enrolled students in a postsecondary institution. [To be eligible](#), students must be enrolled in at least one (1) high school class in a school district. A student must receive a qualifying score in each subject area on a reading assessment or the Michigan Merit Exam (MME) in order to be eligible to take the relevant courses. Otherwise, he or she can only take courses in the area for which a qualifying score was achieved. If no qualifying score was achieved, the student is limited to a course in computer science, a foreign language, or fine arts, as permitted by the school district. Students must meet any course prerequisite requirements.

Students must be in Good Standing (cumulative gpa of 2.00 or higher) at LSSU to be eligible for continued enrollment. Students on probation are limited to course repeats, if available.

Eligible students are limited to no more than ten (10) courses overall if the school district covers the cost; this limit does not apply if the student is covering costs.

Attendance as a high school dual enrollee does not constitute admission to a degree program. LSSU encourages high school students to apply for admission at the start of their senior year.

Repeat Policy

This policy is in effect for all students starting at Lake Superior State University as of the Fall Semester 2011. You may repeat a class in which you earn a grade other than "W" or "N" only twice without special permission.

1. Courses transferred from other institutions are included in this policy.
2. Both the original and repeat grades will show on the transcript, but hours earned toward graduation will only count once.
3. For the purpose of calculating the cumulative grade point average, only the grade of the last attempt will be used.

To repeat a course more than twice, the student must attain the permission of the course instructor and the dean of the college offering that course. Permission is only granted under extenuating circumstances.

Policy on substitutions or waivers for failed classes

If you fail a class required for your degree program, you must repeat the class and receive a passing grade. If the failed class is no longer offered because of program changes and/or course deletions, the dean may approve a substitution or waiver recommended by the academic chair. The chair must provide reasons for the recommendation on the substitution/waiver form which is sent to the dean's office for approval. Upon approval, the dean will then send the form to the Registrar's Office.

Withdrawal Policy

Students dropping all courses within the first ten weeks of a fall or spring semester will be considered as withdrawn from Lake Superior State University. Students withdrawing may be eligible to receive a partial tuition refund following the [refund schedule](#), and those with financial aid will be subject to Federal Title IV refund regulations. The last date of attendance in an academically-related activity is required for all courses and may impact a student's financial aid and refund status.

Late Withdrawal: Students requesting a late withdrawal from one or all of their

classes after the official drop date need to complete a [Request for a Late Withdrawal and/or Tuition Appeal Form](#) and have documented extenuating circumstances. The decision to grant the late withdrawal and/or tuition appeal will be made by the Late Withdrawal Committee. Appeals are reviewed in the order received and results may take from two to four weeks. The need for additional documents may delay this timeframe. All decisions by the committee are final and not subject to appeal.

Except for documented and exceptional circumstances, late withdrawals/tuition appeals will not be accepted more than one year after the end of the term for which the late withdrawal/tuition appeal was documented. All petitions filed after the one-year deadline must be granted an exception prior to consideration by the Late Withdrawal Committee.

Class Attendance

Regular class attendance and active participation in classes are important elements in the learning process. You are at the University primarily for the sake of intellectual growth and development. Attendance and participation provide appropriate opportunities for the evaluation of your progress.

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

Participation in an official University function is an excused absence when approved by the provost. You will not be penalized for such participation. You are responsible for work missed and must confer with your instructor on this matter.

Grading System

Grades and Grade Points:

Grade	Grade Points per Credit
A+	4.00
A Excellent	4.00
A-	3.70
B+	3.30
B Good	3.00
B-	2.70
C+	2.30
C Average	2.00
C-	1.70
D+	1.30
D Inferior	1.00
D-	0.70
F Failure	0.00
I Incomplete	0.00
N No Grade	0.00
W Late Withdrawal	0.00
AU Audit	0.00
CR Credit	0.00
CR (undergraduate level) is equal to a 2.00	
CR (graduate level) is equal to a 3.00	
NC No Credit	0.00

Grade Point Average (GPA): To calculate your GPA for a semester, divide the total quality points earned by the GPA hours. GPA hours include those earned or failed but not those classes taken for credit/no credit. Cumulative GPA is calculated by dividing total quality points earned by the number of GPA hours carried in all semesters. If you repeat a course, count only the credits carried and the points of the last grade earned. Only 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, minor(s), and general education is required. Some programs require a higher GPA in the major and minor curriculum.

"I" (incomplete) grade: Students may request an "I" (incomplete) grade for a course if extenuating circumstances beyond their control prevent the completion of the course requirements by the end of the semester. Examples of extenuating circumstances may include health issues, death of a parent/spouse/child, or military service. Students and faculty must be aware that an "I" (incomplete) grade counts toward the student's attempted credits for a semester and may thus affect Satisfactory Academic Progress. Students receiving financial aid should consult with the Financial Aid Office to discuss their specific situation when electing to drop a course or requesting an "I" (incomplete) grade.

Appropriate documentation is required. Students will need to be enrolled and have completed the majority of the work required for a course during the semester to be eligible to request an "I" (incomplete) grade. An "I" (incomplete) grade may be issued in a course that by design can not be completed in one semester. An example of this type of course would be a study abroad course that requires the student to be out of the country until after the official semester end date. An "I" (incomplete) grade shall not be issued as a midterm grade for any course.

Students must work with the instructor to complete all missing requirements by a date specified by the instructor. If a date is not given, the student will have a maximum of two semesters (excluding summer semesters) to complete the requirements for the course and to have the "I" (incomplete) grade changed to an appropriate final grade. Students should not re-enroll in any class in which they currently have an "I" (incomplete) grade.

If the "I" (incomplete) grade has not been changed to an appropriate final grade by the end of two semesters (excluding summer semesters) the "I" (incomplete) grade will be changed to an "F" (failure) grade.

Students are **not** eligible to receive a degree or certificate with an "I" (incomplete) grade on their academic record.

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

Credit/No Credit Courses

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

1. One course per semester may be taken as credit/no credit.
2. Only 12 credits of courses taken as credit/no credit may be applied toward a degree.
3. Courses that are required by your major, minor, or that are general education courses, can not be taken for credit/no credit.
4. You apply at the Registrar's Office to enroll for a credit/no credit course during

the add/drop period; cannot change to regular grades after the add/drop 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 NC credit is assigned based on the grade your instructor submits.
7. 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.

Auditing Classes

Audits are designed for someone who wishes to take a particular course for its content, personal enrichment or academic exploration with no need for academic credit. The cost for an audited course is 50% of the standard tuition rate. Tuition is waived for Michigan residents who are 60 years of age or older, and verification of age must be provided to the Registrar at the time of enrollment. Individuals auditing a course will receive a final mark of AU (Audit) recorded on their LSSU academic transcript but will NOT receive university credit for the course.

An individual may register for courses on an audit basis provided space is available and all prerequisites have either been satisfied, or waived with the permission of the instructor. Individuals auditing a course shall be entitled to full classroom participation, and may complete all assignments and examinations for evaluation by the instructor, although these are not required for auditors. Not all courses can be taken for audit, and permission of the instructor (or Dean) is required prior to registration. Courses numbered below 100 may not be audited. Program fees, special course fees, parking permits, the purchase of textbooks, and required materials shall be the responsibility of the participant.

Audited courses do not count as part of an individual's official class load for determining financial aid eligibility, veteran's benefits or any other enrollment certification requirements. Students may change from an audit to credit status during the first week of classes, and only with the concurrence of the faculty member for the course. This change must be processed through the Registrar's Office for grading purposes. Requests for course audits will be processed beginning two weeks after the start of registration to ensure degree-seeking students have adequate opportunity to enroll prior to course auditors.

Students wishing to audit a course will need to complete the [Application for Auditing a Course](#) form and turn it in to the Registrar's Office.

Dean's List

Full time students carrying at least 12 graded credits of college-level courses (100 level or above) in a semester with a grade point average (gpa) of 3.500 or higher, and NOT having any incomplete ("I") grades, will earn Dean's List honors, which acknowledge outstanding academic achievement.

If a grade is changed within 30 days from the end of the semester because of an instructor error in the recording of a grade, or because the student has completed the work required to resolve an Incomplete ("I") grade, the student will be considered for Dean's List honors.

Effective fall semester 2006, students earning Dean's List honors will have this designation noted on their LSSU academic transcript.

Prior Learning Policy

Credit for Prior Learning (CPL)

LSSU recognizes that students may acquire expertise, skills and knowledge through individual study, employment, military training, community service or other experiences outside of the normal college setting, which is known as prior learning. LSSU credit may be awarded for prior learning through successful completion of standardized examination programs, (e.g. CLEP, Advanced Placement, DANTES), credit recommendations of the American Council of Education, or successful completion and evaluation of "departmental examinations". Credit may also be awarded upon successful completion of an individual Credit for Prior Learning Portfolio (CPL Portfolio) that documents the demonstration of learning outcomes for a specific course or set of courses.

All prior learning credits are considered transfer credits and are subject to the same policies as other transfer credits. Discuss your prior learning experience with your academic advisor, chair or dean for more information.

University residency requirements apply to all forms of prior learning (e.g. a minimum of 30 credits of the 124 credits required for an LSSU baccalaureate degree must be earned using LSSU coursework). See the Academic Catalog for the complete residency policy.

CPL Portfolio Program

The CPL Portfolio program grants credit after a successful faculty evaluation, and Dean approval, of a portfolio that demonstrates mastery of the learning outcomes for a specific course or set of courses. Unlike typical course articulations, no list of equivalencies exists since every person's prior learning experience can vary significantly. It is only through the CPL Portfolio review process that equivalencies are identified and credit awarded. Because of this, not all Lake Superior State University courses are eligible for CPL Portfolio review. Credits awarded through the CPL Portfolio review support a student's goals and are applied to a specific academic degree program. A typical portfolio will capture prior learning experiences from work experience (based on past employment), past training (such as classes, workshops, seminars, etc.), and life experiences (long-term activities that may have resulted in college level learning). The University provides guidelines and assistance for CPL Portfolio development through the School of Arts and Letters.

If you are interested in pursuing credit for prior learning through a CPL Portfolio, you should contact the Dean or the Chair of the School of Arts and Letters to review the process. After that meeting, you will be directed to a dean or multiple deans to review your request(s).

CPL Portfolio Criteria:

In order to be considered for CPL Portfolio credit review, a student must be currently enrolled in a degree program and his/her cumulative GPA must be a minimum of 2.00, or higher where required by the program. Furthermore:

1. All CPL Portfolio credit is considered non-LSSU credit (transfer credit) and is limited by LSSU policy to 60 credits and only 16 credits may be used to fulfill 400 level coursework.
2. CPL Portfolio-based credit may only be awarded for content which applies to the student's degree program. Approved CPL will appear on a student's transcript.
3. CPL credit may not be applied to fulfill the University's residency requirement.
4. CPL credit may not be used to satisfy the General Education Requirements of the University.

CPL Portfolio Guidelines:

1. Portfolios must be submitted to the Dean of the College or School responsible for the content review by the 12th Friday of the semester (two weeks before final examinations) during the academic year, or by the 2nd Friday in July for the summer semester. Students are not eligible to submit a CPL Portfolio in their anticipated term of completion (e.g. graduation term).
2. Credit will be granted for college-level learning and only for courses required for LSSU degrees.
3. Credit for any specific instance of prior learning can only be awarded once (e.g. credit for knowledge gained in mathematics cannot be awarded once through CLEP then again petitioned through a CPL Portfolio or transfer credit). All CPL Portfolio requests must be submitted at one time to facilitate coordination of credit awarded, and separate portfolios must be submitted to each School for all credits which the student seeks to have evaluated within the school.
4. The CPL Portfolio may be used to award credit for specific LSSU courses or for general elective credit applicable to the degree program. The amount of credit to be allowed through portfolio evaluation identification of specific courses for substitution, if any, and the fulfillment of graduation requirement, if any, is determined by the Dean of the appropriate school under advisement of the school faculty.
5. While the School of Arts and Letters faculty provide general guidance and assistance, it is each student's responsibility to complete a narrative and a portfolio of documentation, which will be the basis for awarding credit.
6. To assist students interested in developing a portfolio for this purpose, the University may provide an elective portfolio course (e.g. USEM201 Prior Learning Portfolio Development).
7. CPL Portfolios will be evaluated on the alignment of learning evidenced with the specific course's or program's learning outcomes. Elements in the portfolio may include documentations of leadership and community service experiences, professional work experiences, creative contributions to society, and completion of professional training.
8. CPL Portfolios will be evaluated by faculty qualified to teach the course(s) for which the portfolio has been submitted.
9. Credit under this program cannot be obtained for learning when proficiency exams are required by the appropriate department.
10. Formal CPL Portfolio review to evaluate for credit requires an initial \$50 processing fee for each CPL Portfolio submitted using the [CPL Portfolio Review Form](#). If approval is received, the student will be required to pay an additional \$75 per awarded credit.

Course Grade Appeal Policy

Lake Superior State University has established procedures for students to appeal their final course grade. Situations where this appeal is applicable may include grade miscalculations, inconsistent application of grading policies and/or requirements, or actions that prevented the meeting of course learning outcomes. A student who has concerns regarding a final course grade may take the following steps:

1. **Initial Discussion between Faculty and Student:** Contact the course instructor and discuss the concern(s) within 20 UWD of posting of final grade. This will serve as an informal review and an opportunity for open dialog regarding the concern(s).

2. **Notification and/or Discussion with Academic Advisor by Student (or School Chair if Course Faculty and Academic Advisor are the Same Person)** allows for guidance in this process. This step is optional.
3. **Student Written Appeal to Faculty:** If the informal review does not lead to a satisfactory resolution, the student may choose to file a formal appeal. The appeal must be filed in writing with the Course Faculty within 5 University Working Days (UWD) of discussion with Faculty in Step 1. The appeal shall include:
 - [The Grade Appeal Record of Action Form](#): This form is to accompany all documentation of communication regarding the Grade Appeal issue.
 - Statement of appeal: this should be brief and specific.
 - Justification: present reasons for lodging the appeal with supporting evidence (all documentation must be provided at this point).
 - Remedy requested: cite the specific remedy desired.
4. **Faculty Written Response:** The Faculty shall respond to the appeal in writing to the student within five (5) University Working Days upon receipt of the appeal.
5. **Student Written Request to Dean:** If the Faculty's response does not lead to a satisfactory resolution, the student may, within three (3) University Working Days of receipt of the response, request formal review of the appeal by the Dean of the College. The student shall submit the appeal and all related documents to the Dean.
6. **Dean Written Response:** The Dean shall respond in writing to the student, the course instructor, and the Chair. within five (5) University Working Days of receipt of the appeal.
7. **Student Written Request for Provost Review:** If steps 1-6 do not lead to a resolution of the concern, the student may petition the Provost within three (3) University Working Days. The student shall submit the appeal and all related documents to the Provost's Office with the completed Grade Appeal Record of Action.
8. **Provost Determination:** The Provost will make the final determination of the outcome of the appeal. Documentation will be provided to the Student, Faculty, Advisor, and Dean within 20 UWD of the receipt of the student request. The Provost may also exercise the option of appointing an ad hoc Appeal Board for advisement on this determination. The board may be comprised of an academic dean(s), student(s), and faculty.

General Information:

A University Working Day (UWD) refers to those days when the university is in normal operation, and university offices are open for business.

"Receipt" refers to the day upon which the person designated officially initials the appropriate document(s).

If the student does not meet the appeal timelines stated above, the appeal is considered closed and no further action is required. If university personnel do not meet the appeal timelines stated above, the student can advance the appeal to the next step. The Provost may grant an extension in time at any step due to extenuating circumstances; such extensions will be documented on the Grade Appeal Record of Action. The Provost may establish appropriate and reasonable extensions of time in cases where the student is not actively enrolled in the current semester, or where the course instructor is not assigned teaching duties for the

current semester.

Undergraduate Academic Standing

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

For Undergraduate Coursework

(Effective Summer 2005)

Cumulative GPA Hours Carried at LSSU	Minimum for Good Standing*	On Probation	Dismissal
1 - 18.9	2.00	less than 2.00	two consecutive semesters on probation
19 - or more	2.00	less than 2.00	two consecutive semesters on probation or 1.60 or less gpa

You will be dismissed for academic deficiencies if you are on probation for two consecutive semesters at Lake Superior State University. If your cumulative GPA Hours (as shown on your transcript) are 19 or more and your grade point average is 1.60 or less, you will be dismissed. GPA Hours are those used in figuring your grade point average. Classes not at the 100-level or above are not counted in the GPA Hours. Classes with grades of CR/NC are not counted in the GPA Hours.

*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 your major, minor and general education is necessary for graduation (effective fall 2007).

1. You will be on academic probation if your cumulative grade point average falls below 2.00. Academic Probation limits you to 15 credits. You must contact your advisor to adjust your schedule before classes start for the next semester.
2. If you are on probation for two consecutive semesters (summer semester included if you are enrolled in summer classes), you will be academically dismissed or, if your cumulative GPA Hours are 19 or more and your grade point average is 1.60 or less, you will be academically dismissed. Your classes for the next semester(s) will be deleted.
3. After a first or second dismissal you may choose one of the following options:
 1. Allow two semesters (summer may be counted for one semester) to elapse before re-enrollment,

or
 2. Petition the Scholastic Standards Committee for immediate readmission should extenuating circumstances exist. This action is initiated with the Chair of the Scholastic Standards Committee. The Committee can either permit early readmission with specific conditions required of you or deny your request. Subsequent to the Committee's denial, you can further appeal in writing to the Provost, whose decision is final.
4. If you continue after a dismissal, you will be dismissed again after any

semester in which your cumulative grade point average falls below a 2.00. The Registrar may allow you to continue "on probation," with the record showing "on probation" instead of "academic dismissal" if your record has shown improvement during the semester and you have a 2.00 grade point average in courses carried for that semester.

5. If you are dismissed a third time, you will not be reinstated without the permission of the Provost. Three semesters must elapse from the time of dismissal before you may petition for readmission. Summer may be counted for one semester.
6. The Scholastic Standards Committee may dismiss you from the university for demonstrated academic dishonesty.

Graduate Academic Standing

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

For Graduate Level Coursework

(Effective Summer 2011)

A cumulative grade point average of 3.00 for all graduate credits carried at Lake Superior State University and a minimum grade of B for each course, including courses transferred into the program, are required for graduation.

1. You will be on academic probation if your cumulative grade point average falls below 3.00. Academic Probation limits you to six (6) credits. You must contact your advisor to adjust your schedule before classes start for the next semester.
2. If you are on probation for more than two consecutive semesters (summer semester included if you are enrolled in summer classes), you will be academically dismissed. Your classes for the next semester will be deleted.
3. After a first or second dismissal you may choose one of the following options:
 1. Allow two semesters (summer may be counted for one semester) to elapse before re-enrollment,

OR

 2. Petition the Scholastic Standards Committee for immediate readmission should extenuating circumstances exist. The Committee can either permit early readmission with specific conditions required of you or deny your request. Subsequent to the Committee's denial, you can further appeal to the Provost, whose decision is final.
4. If you continue after a dismissal, you will be dismissed again after any semester in which your cumulative grade point falls below a 3.00. The Registrar may allow you to continue "on probation," with the record showing "on probation" instead of "academic dismissal" if your record has shown improvement during the semester and you have a 3.00 grade point average in courses carried for that semester.
5. If you are dismissed a third time, you will not be reinstated without the permission of the Provost. Three semesters must elapse from the time of dismissal before you may petition the Provost for readmission. Summer may be counted for one semester.
6. The Scholastic Standards Committee may dismiss you from the university for

demonstrated academic dishonesty.

Academic Integrity

(Effective Spring 2021)

Academic integrity is a key component of the core values of Lake Superior State University. All members of the University community are expected to be honorable and ethical and observe standards of conduct appropriate to a community of scholars. Students are expected to behave in an ethical manner. The University community will not tolerate academic dishonesty as such behavior will cause harm to the reputation of students, faculty, and graduates of the institution. Such dishonorable behavior includes, but is not limited to, cheating, fabrication, plagiarism, and obtaining an unfair advantage. These terms are defined below:

Cheating: Using or attempting to use unauthorized materials or information of any kind during an exam or assignment of any kind. Using notes, texts, help from individuals, or copying information from another individual's exam, or by using electronic or any other means constitutes cheating unless such resources are EXPLICITLY allowed by the instructor.

Fabrication: Unauthorized falsification, invention, or copying of data, falsification of information, citations, or bibliographic references in any academic work. It also includes falsifying any academic record or other University document. Issues of academic integrity are not limited only to submitted written assignments but also include dishonest behavior that impacts planned learning opportunities for self or others. Examples include, but are not limited to: stated falsehoods with the intent/or have the result of impacting course schedules, group activities, or assignment design; actions of deception that are intended/or have the result of altering assignments, learning objectives, testing, and/or grading criteria.

Plagiarism: Representing someone else's work as one's own. Failing to cite references or presenting material, verbatim or paraphrased that is not acknowledged and cited also constitutes plagiarism.

Obtaining an Unfair Advantage: Stealing, reproducing, circulating, or otherwise gaining any advantage with examination materials before, during, or after examination by the instructor. This may include, but is not limited to: submitting responses after the examination is complete, or not submitting the examination. Also prohibited are stealing, destroying, defacing, or concealing academic materials with the purpose of depriving others of their use.

Possible Academic Sanctions for Offenses

It is in the best interest of the University community to sanction any individual who chooses not to accept the principles of academic honesty by engaging in the above acts. Appropriate sanctions may include but are not limited to verbal and/or written warning, revision and/or completion of additional work, change or reduction of grade, course failure, and/or dismissal from academic program and/or the University. In the case of theft, damage, or destruction of University property, or the property of others, there may be additional penalties which may include, but are not limited to issuance of fines, removal from the campus, dismissal from the University, and/or criminal prosecution.

Faculty/Staff and University Responsibilities

A faculty/staff member who observes a violation or has a violation reported to them in one or more of the above areas shall meet with the student to address the violation and review the Academic Integrity Incident Report with them. The faculty/staff member will then file the report with the Academic Advisor, Dean and the Provost's Office. This report will be kept in the Provost's Office for a period of five

years after graduation or leaving the university. Academic Departments or Schools may have additional policies and procedures that could provide further recommendations to the Provost's Office when instances of academic dishonesty are suspected.

The Office of the Provost will keep a record of all Academic Integrity reports. On behalf of the faculty member, Academic Deans may access these records for assessment of patterns in past academic integrity incidents. In cases of egregious or repeated violations, it may be determined by the Dean that dismissal from the University is warranted. In this case, the Provost's Office and the student will be notified.

Student Responsibilities

Unless the faculty member has explicitly specified otherwise, students are to assume that exams are individual, closed book, and without the use of notes or similar reference materials. Unless specifically allowed by the faculty member, papers, projects, and similar products are expected to be the original individual work of the student. If notes, texts, other reference materials, group work or similar activities are to be allowed, the faculty member will specify what is permitted for a particular assignment or exam prior to disseminating the assignment or exam.

It is the student's responsibility to start the appeal process if they wish to challenge an academic integrity decision.

Student Appeal

For a single course Academic Integrity incident, the student will follow the procedure outlined in the [Academic Integrity Appeal Process Record of Action](#).

Should the student desire to appeal a University dismissal related to egregious or repeated Academic Integrity incidents, the same process outlined in the Academic Integrity Appeal Process Record of Action would be followed but begin at Step 5 with the Student Written Request to Dean.

Academic Forgiveness Policy

(Effective Spring 2018)

Purpose: LSSU recognizes that sometimes, despite a student's best efforts, life circumstances interrupt academic progress, impacting academic standing and GPA in ways that make returning and being successful difficult. The Undergraduate Academic Forgiveness Policy provides returning students with a chance to establish an academic standing that reflects their increased maturity and commitment to successful degree completion.

Through the Academic Forgiveness process, a student who has been away from Lake Superior State University for a period of at least three years, is given a one-time opportunity to remove prior course work from specific academic semesters from grade point computation.

Academic Forgiveness must be requested the first semester of a student's return. An academic plan must be completed with the faculty advisor. In addition, the student will be required to complete no less than 12 additional credits at LSSU with a minimum GPA of 2.000 or higher in order to have academic forgiveness applied to their transcript. The Application for Academic Forgiveness can be found [here](#).

Academic Forgiveness is not available to students who have previously been awarded an LSSU associate, or bachelor's degree. Students with an earned certificate may not forgive any coursework that was used to earn the certificate.

Students may only request academic forgiveness once, and if academic forgiveness is approved it is irrevocable. The student's academic standing will be set to "Good

Academic Standing".

All courses and grades that fall within the academic forgiveness semesters will remain on the student's transcript with the notation "Academic Forgiveness Granted". All grades will be annotated with an 'R' indicating forgiveness, (for example, RA, RB, RC, RD, RF). Grades thus annotated will be excluded from the university grade point average calculation. Forgiven course grades of RC- or higher will count in Earned credits and can be used to fulfill LSSU requirements.

Academic Forgiveness does not relate to or affect Financial Aid eligibility. A student's cumulative completion rate of attempted credits is not reduced by the approval of Academic Forgiveness.

Academic Forgiveness is a policy of Lake Superior State University and may not be recognized by outside institutions or agencies (e.g. Michigan Dept of Education, other universities and colleges).

Michigan Transfer Agreement (Sending)

The Michigan Transfer Agreement (MTA) is a partnership between Michigan's colleges and universities that allows students to complete core college courses at one institution and transfer those credits to other partner institutions to be applied to the core requirements.

To be eligible to receive the "MTA-Satisfied" designation on the LSSU academic transcript, students must:

- Complete LSSU's bachelor degree General Education Core Requirements with a minimum of a C or higher in each course. If students transfer coursework to LSSU, any coursework used toward LSSU's General Education Core Requirements will be required to have a minimum grade of a C or higher.
- Complete at least one credit bearing course at LSSU.
- Submit the completed LSSU MTA Application Form.

Coursework in areas of prior learning are not applicable to the MTA at this time (e.g., International Baccalaureate-IB, College-Level Examination Program-CLEP, DANTES Subject Standardized Test-DSST, etc.).

Students [requesting and earning this designation](#), will have it applied to their academic transcript at the completion of the academic semester.

Family Educational Rights and Privacy Act (FERPA)

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 U.S. Department of Education, 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 U.S. Department of Education concerning alleged failures by the University to comply with the Act. In accordance with these requirements the annual notice regarding students' rights, the location of copies of the University's policies setting forth these rights, as well as the right to file complaints with the Family Educational Rights and Privacy Act Office, shall be published in the University Catalog. The annual letter to students will notify students of directory information.

The registrar is the hearing officer for the Act and is responsible for implementing the notification requirements and the 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:
 1. are in the sole possession of the maker thereof, and
 2. 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:
 1. maintained apart from the University's educational records;
 2. maintained solely for law enforcement purposes; and
 3. 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:
 1. are made and maintained in the normal course of business;
 2. relate exclusively to the individual in that individual's capacity as an employee; and
 3. are not available for use for any other purpose.

4. 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:
 1. 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;
 2. created, maintained, or used only in connection with the provision of treatment to the student; and
 3. 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 records 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; Office of Admissions
- Career Advising and Placement; Academic, Personal, evaluations; Director; Library
- Continuing Education; Academic; Director; Cisler Center
- Human Resources; Work Evaluation, Employment; Director; Administration Building
- Financial Aid; Financial, Academic, Personal evaluation, Employment; Director; Fletcher Center
- Graduate Office; Academic, Financial; Coordinator; Crawford Hall
- Registrar's Office; Academic (complete and official academic record), Personal, Veterans Affairs; Registrar; Fletcher Center
- Residence Halls; Personal; Housing Manager; Cisler Center
- Residence Halls and Student Life; Discipline; Dean of Student Affairs; Cisler Center
- Student Accounts; Financial; Director Business Operation; Fletcher Center
- Academic Areas, Academic; School/Department Chairs.

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

Section 8. Disclosure of Restricted Information to University Officials

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

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

Section 9. University Officials

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

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

Section 10. Disclosure of Personally Identifiable Information

A. Prior Consent for Disclosure Required

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

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

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

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

B. Prior Consent for Disclosure Not Required

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

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

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

1. To federal and state authorities as provided by the Act or other legal authority.
2. In connection with financial aid for which a student has applied or received; provided that the information may be disclosed only:
 1. to determine the eligibility for financial aid,
 2. to determine the amount of aid
 3. to determine the conditions that will be imposed regarding financial aid, or
 4. 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

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 of the add/drop period to the Registrar's Office.

The University considers the following as directory information: name, address, telephone number, place of birth, e-mail address, enrollment status (e.g., undergraduate or graduate, full time or part time) major field of study, dates of attendance, degrees, honors and awards received, including scholarships, most recent previous educational agency or institution attended by student, participation in officially recognized activities and sports, and height and weight of members of the athletic teams.

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:
 1. admission, or
 2. application for employment, or
 3. receipt of an honor or honorary recognition.
4. Those records which are defined not to be education records as set forth in Section 3

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

Section 14. Request to Amend Educational Records

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

The procedures regarding amendment to a student record are:

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

Section 15. Right to a Hearing

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

process after the decision of denial.

Procedure of Hearing

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

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

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

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

The student may be assisted or represented by any individual, including an attorney, at their own expense.

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.

Students have the right to file a complaint with the U.S. Department of Education concerning alleged failures by Lake Superior State University to comply with the requirements of FERPA. The name and the address of the office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-5901

Additional Information

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

Degree Requirements

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

Bachelor degree: A minimum of 124 credits (at the 100 level or higher) is required for a bachelor degree. Some programs require more than this number of credits. Requirement categories are: general education, bachelor of arts (if applicable) and major. Some programs require concentrations, support courses and/or a minor, and free electives. Please note: a minor selected to accompany a major may not be in the same discipline.

Bachelor of Arts degree (8 credits): One year of a modern language other than English. One-half year of two different languages will not meet this requirement.

Associate degree: A minimum of 62 credits (at the 100 level or higher) is required for an associate degree. Some programs require more than this number of credits. Requirement categories are: general education and major or concentration. Some programs require minors, support courses and free electives.

Certificate: A certificate may be comprised of a series of courses/experiences housed in one department, or a cluster of courses/experiences in a defined thematic area which are not confined to a single disciplinary area - referred to as a multidisciplinary certificate. Standard and professional certificates credit minimums are variable, however, certificates that will be eligible for standalone approval under Gainful Employment provisions must be at least 24 credits minimum.

Concentration: A prescribed set of disciplinary or interdisciplinary courses within a particular bachelor or associate degree.

Minor: Academic minor programs are offered in a wide variety of disciplines. A minimum of 20 credits is required for a minor, with some minors requiring additional credits. Minors are earned as part of the bachelor or associate degree program.

GPA: A minimum cumulative grade point average of 2.00 for all credits carried at Lake Superior State University **and** a minimum cumulative grade point average of 2.00 for all courses required in a student's major, minor and general education is necessary for graduation. Some degree programs may require a higher gpa.

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

Graduation with Honors: Students graduating with honors must earn at least 30 credits at Lake Superior State University.

Cum Laude: Cumulative gpa of 3.50 to 3.69

Magna Cum Laude: Cumulative gpa of 3.70 to 3.89

Summa Cum Laude: Cumulative gpa of 3.90 to 4.00

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

For the commencement ceremony and program, honors status will be determined based on the Fall Semester cumulative gpa. Official graduation with honors status will be granted based on students' final cumulative gpa at LSSU.

Honors Degree

The University Honors Program offers highly motivated students the opportunity to develop their knowledge, abilities and skills in distinctive ways, which draw from and which build upon LSSU's best qualities. The central goal of the University Honors Program is to create and foster a community of scholars characterized by strong student-faculty interaction and who are equipped to get the most out of their LSSU experience and to take that experience into society. The Honors Program approach to education incorporates the qualities of active participation, intellectual curiosity and interdisciplinary collaboration.

Selection is based upon a number of factors, including: SAT scores or ACT scores, grade point average, and/or an application essay. Students are accepted into the program on a rolling basis, which means that students may apply at any time for admittance into the program. 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 include seminars or directed research projects.

To graduate with an honors degree in a program of study, the honors student must have successfully completed 18 honors credit hours with a cumulative grade point average of 3.5 or better at graduation.

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 academic transcript. The Honors Degree is distinct from graduating with honors (see Graduation with Honors).

Acceptance of Other Institutions' Honors Credits

This policy applies only to the transfer of honors credits which count towards earning an honors degree at Lake Superior State University. It does not affect non-honors course credits and the transfer of those credits to LSSU.

1. The LSSU Honors Program will accept up to 12 honors credits with a grade no lower than B taken at an accredited college or university. These accepted honors credits will count towards the 18 honors credits required to graduate from LSSU's Honors Program.
2. To graduate from the Honors Program at LSSU, students affected by this policy must meet the following requirements at LSSU:
 1. The completion of the capstone senior thesis project at LSSU.
3. Students who transfer into LSSU's Honors Program will receive the same honors benefits given to other students who enter LSSU's program earlier. These include but are not limited to:
 1. Priority Registration
 2. Optional Honors Housing
 3. Opportunities to participate at Honors Program conferences
4. Students who transfer into LSSU's Honors Program will receive the same Honors designation on their Lake Superior State University diploma as other LSSU students who meet its Honors requirements by their graduation date.
5. This Policy shall commence on January 24, 2012, or as soon thereafter as administratively possible, and shall be in effect until suspended or terminated.

6. Students already admitted into the Lake Superior State University Honors Program at the time of suspension or termination will be allowed to complete the Program at LSSU under the terms of this policy enumerated (above) in numbers 1 through 4. Suspension or termination will only affect those admitted after suspension or termination of this policy.

Residency Requirements: On-campus and regional centers

Bachelor degree candidates must successfully complete at least 30 of the 124 credits earned for the degree using courses offered by Lake Superior State University. Additionally, at least 50 percent of the departmentally required (major) 300/400 level credits must be earned using courses offered by Lake Superior State University.

Associate degree candidates must successfully complete at least 15 of the 62 credits earned for the degree using courses offered by Lake Superior State University. Additionally, candidates must earn at least 50 percent of their departmentally required (major) credits using courses offered by Lake Superior State University.

Certificate candidates must successfully complete at least half (50%) of their departmentally required credits using courses offered by Lake Superior State University.

Minor candidates must earn at least 10 of the departmentally required credits using courses offered by Lake Superior State University.

Departmental residency requirements may exceed the residency of the University for certain degree programs.

Multiple Majors

Students may earn more than one major by completing all requirements of each desired major program. Before graduation, students must file a Degree Audit approved by the school chair for each major. The double major must be granted as one combined degree such as: bachelor of science degree in accounting and business administration.

Multiple Degrees

If a student desires to earn more than one degree, the student must complete all program requirements of the additional degree(s) as certified by the school chair, comprising a minimum of 30 additional LSSU credits for each additional bachelor degree, or a minimum of 15 additional LSSU credits for each additional associate degree from Lake Superior State University.

There are no overlapping or additive residency requirements between the associate and bachelor degree tracks. The degrees stand alone. Earning an additional associate degree and a bachelor degree at the same time would require the completion of an additional minimum of 30 credits.

Additional degrees for graduates of other universities

Students who hold a bachelor degree at another U.S. accredited institution, and who desire a bachelor degree from LSSU, must complete all requirements of an approved degree schedule including at least 30 additional credits in courses offered by LSSU. The degree schedule must be approved by the major school chair and sent to the Registrar's Office. Transfer credits from other universities will be evaluated for those classes used for the new degree. Students 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 major, minor and cognate courses.

Courses considered essential to the degree but not previously elected may, at the option of the school chair, be required even though the total may exceed 30 credits. Lake Superior State University general education requirements are considered complete if students have earned a bachelors degree at any United States accredited university or an honors bachelors degree from an accredited Canadian university.

If students have earned a bachelors degree or associates degree at another accredited institution and desire an associates degree from Lake Superior State University, they must complete all requirements of an approved degree schedule including at least 15 additional credits in courses offered by LSSU. The degree schedule process is identical to that described above for an additional bachelors 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 15 credits.

Incomplete (I) Grades

Students are **not** eligible to receive a degree or certificate with an Incomplete (I) grade on their academic record.

Failed Classes

If a student fails a class required for their degree program, the student must repeat the class and receive a passing grade. If the failed class is no longer offered because of program changes and/or course deletions, the dean may approve a substitution or waiver recommended by the academic chair. The chair must provide reasons for the recommendation on the substitution/waiver form which is sent to the dean's office.

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 Chair of the Scholastic Standards Committee.

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, students will graduate under the program degree requirements in effect and published in the Catalog at the time they are admitted into the given degree program, provided enrollment at the University is continuous. If enrollment is interrupted, or if students select a new major, they must satisfy program requirements in effect at the time they re-enter or officially change to the new major. If program requirements are revised during students' enrollment, students will be allowed to graduate under the new requirements providing they 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.

Missing Requirements

Students not graduating because of missing requirements will be sent a letter notifying them of the missing requirements and will direct them to the department of

their major.

Posthumous Degree Policy

A posthumous degree may be awarded in the name of a deceased student upon request of the student's family, if the deceased student had met the requirements as set forth below.

The deceased student will need to be in good academic standing with the University and have completed a majority of the requirements for the degree. The Chair of the school responsible for the student's degree program will make the recommendation to the Dean. The Dean will complete a degree audit and submit it to the Registrar who will complete a verification of the requirements, and submit the request to the Provost. If the Provost approves, the request will be submitted for Presidential approval, and final Board of Trustees approval.

The academic transcript will be marked: "Degree Granted Posthumously". A copy of the academic record will be released, if requested, to an attorney representing the estate of the deceased student.

Deceased students not meeting the above criteria may receive a "Certificate of Achievement" if requested by the family.

General Education Requirements

General Education Mission Statement

In a diverse and changing world, college graduates must be prepared for a lifetime of learning in a variety of fields. In order to meet this challenge, general education requirements foster the development of general skills and knowledge that are further developed throughout the curriculum.

General Education Learning Outcomes

LSSU graduates will be able to:

- Communicate competently in a variety of contexts (Oral Communication Outcome)
- Analyze, develop, and produce rhetorically complex texts (Written Communication Outcome)
- Analyze, evaluate, and explain human aesthetics and its historical development (Humanities Outcome)
- View the world from cultural perspectives other than their own (Diversity Outcome)
- Incorporate empirical evidence in the analysis of the causes and consequences of natural phenomena (Natural Science Outcome)
- Think critically and analytically about the causes and consequences of human behavior (Social Science Outcome)
- Analyze situations symbolically and quantitatively in order to make decisions and solve problems (Mathematics Outcome)

Graduation Procedures

Two semesters prior to intended graduation, students must submit the following to the Registrar's Office:

Graduation Application: Students must complete a [Graduation Application](#) for each degree or certificate they plan to receive.

Official Degree Audit: The official 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 chair of the school or department offering the major or minor program. Course substitutions and waivers of departmental degree program requirements may be granted only by the chair and approved by the dean of the college offering the major or minor program. Course substitutions and waivers for education majors or minors must also have approval from the School of Education.

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 Chair of Scholastic Standards.

Students are responsible for reviewing their My Degree Plan degree audit and requesting clarification of anything that is not consistent with their records or understanding.

A final degree audit verification will be completed after grades are received at the end of the semester, for students planning to graduate as of that semester. The degree will be awarded if all requirements have been satisfied. Names of graduates are then sent to the president for approval by the Board of Trustees. Subsequently, a diploma is provided to each student.

Please Note: Students are **not** eligible to receive a degree or certificate with an "I" (incomplete) grade on their academic record.

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, spring or summer semester who need documentation of degree completion before their diploma is available, may request a letter from the Registrar's Office certifying that they have completed degree requirements.

Commencement

From the Graduation Application Forms submitted by students, a potential graduate list is created each semester. The names of students who are listed in the annual commencement program are also compiled from the Graduation Application Forms. Names for the commencement program and diplomas will be the official, legal name as listed in the records of the University. Students may not be listed in the commencement program unless their Graduation Application Form is filed with the Registrar's Office six weeks prior to commencement. Students are expected to attend [commencement](#) exercises unless excused by the Registrar's Office.

Students completing degree requirements during the summer semester may participate in the May commencement ceremony if their Graduation Application Form is received six weeks prior to commencement.

Participation in the commencement ceremony is NOT equivalent to graduation.

Because the ceremony occurs before final grades are submitted, it is not possible to determine if all degree requirements have been satisfied at that time.

Missing Requirements

Students not graduating because of missing requirements will be sent a letter notifying them of the missing requirements and will direct them to the department of their major.

Graduation Audit Policy

Graduation Audits (Graduation Application, Degree Audit, supporting paperwork) are maintained in the Registrar's Office permanently for students that apply to graduate but ultimately do not graduate due to missing requirements.

If the student re-applies to graduate within two years from original graduation application term, the student will follow the same degree audit previously submitted.

If the student re-applies to graduate after two years from the previous graduation application, the student will be directed to contact their academic department to request a new Degree Audit. The Registrar's Office will provide copies of the student's graduation audit paperwork to the academic department as requested. The student will also be required to complete a new Graduation Application to be submitted to the Registrar's Office with the updated, official, signed degree audit from their academic department.

Because degree programs are continually assessed, requirements may change during the student's absence. Students will need to work with their academic departments in order to fulfill the department requirements in place at the time the student returns to LSSU.

For degree programs that are no longer available (eliminated/suspended), students having completed the Graduation Application process will be directed to their academic department for advisement.

Colleges and Schools

College of Criminal Justice and Emergency Responders

- School of Criminal Justice, Fire Science and Emergency Services

College of Education and Liberal Arts

- School of Arts and Letters
- School of Education
- School of General Studies

College of Health and Behavior

- School of Kinesiology and Behavioral Sciences
- School of Nursing

College of Innovation and Solutions

- Lukenda School of Business
- School of Computer Science and Mathematics
- School of Engineering and Technology

College of Science and the Environment

- School of Natural Resources & Environment
- School of Science and Medicine

College of Criminal Justice and Emergency Responders

<http://www.lssu.edu/academics/a/index.php>



School of Criminal Justice, Fire Science and Emergency Services

<http://www.lssu.edu/academics/a/el.php>



College of Education and Liberal Arts

<http://www.lssu.edu/academics/a/hpsps.php>



School of Arts and Letters

<http://www.lsu.edu/education/>



School of Education

<http://www.lssu.edu/academics/a/criminal.php>



School of General Studies

<http://www.lssu.edu/academics/c/sps.php>



College of Health and Behavior

<http://www.lsu.edu/academics/c/sps.php>



School of Kinesiology and Behavioral Sciences

<http://www.lssu.edu/academics/a/index.php>



School of Nursing

<http://www.lssu.edu/academics/a/index.php>



College of Innovation and Solutions

<http://www.lssu.edu/nursing>



Lukenda School of Business

<http://www.lssu.edu/nursing>



School of Computer Science and Mathematics

<http://www.lsu.edu/academics/d/recstudies.php>



School of Engineering and Technology

<http://www.lssu.edu/academics/a/index.php>



College of Science and the Environment

<http://www.lssu.edu/business>



School of Natural Resources & Environment

<http://www.lsu.edu/academics/a/cfp.php>



School of Science and Medicine

<http://www.lssu.edu/eng>

University Administration

- [Board of Trustees](#)
- [Officers of Administration](#)
- [Distinguished Teacher](#)
- [Employee of the Year](#)
- [Faculty/Staff Directory](#)
- [Emeriti Faculty](#)
- [Emeriti Staff](#)

Course Descriptions

Each course description is preceded by the following type of heading:

**CHEM999 Chemistry
(3,3) 5**

or

**CHEM999 Chemistry
(3,3,1) 5**

or

**CHEM999 Chemistry
(3,3) *alternate years* 5**

The first line provides the code number (CHEM999) and the course name; see abbreviation legend below. The second line includes several pieces of information: The first two numbers in parentheses are hours of lecture-lab per week. If the course has a recitation component, it will be listed next. The far right digit indicates the number of credit hours. Sometimes, no semester will be indicated, or there may be an alternate years or "every third year" notation. Consult either the on-line course schedule listings prior to registration or your department chair concerning scheduling of such courses.

NOTE: 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 if it is found during the regular add/drop period that the proper prerequisites have not been met. Responsibility rests with students to be certain that they have the approved prerequisites.

Abbreviations

- [ACTG - Accounting](#)
- [ARTS - Art](#)
- [BIOL - Biology](#)
- [BUSN - Business](#)
- [CBUS - Cannabis Business](#)
- [CCHM - Cannabis Chemistry](#)
- [CHEM - Chemistry](#)
- [CHLD - Early Childhood Education](#)
- [CHIN - Chinese](#)
- [CJUS - Criminal Justice](#)
- [COMM - Communication](#)
- [CSCI - Computer Science](#)
- [CULN - Culinary Arts](#)
- [DATA - Data Processing](#)
- [ECON - Economics](#)
- [EDSE - Special Education](#)
- [EDUC - Teacher Education](#)
- [EGEE - Electrical Engineering](#)
- [EGEM - Engineering Mechanics](#)
- [EGET - Electrical Engineering Technology](#)
- [EGME - Mechanical Engineering](#)

- [EGMF - Manufacturing Technology](#)
- [EGMT - Manufacturing Engineering Technology](#)
- [EGNR - General Engineering](#)
- [EGRS - Robotics and Control Systems](#)
- [EMED - Emergency Medical Services](#)
- [ENGL - English](#)
- [EVRN - Environmental Science](#)
- [EXER - Exercise Science](#)
- [FINC - Finance](#)
- [FINE - Fine Arts](#)
- [FIRE - Fire Science](#)
- [GEOG - Geography](#)
- [GEOL - Geology](#)
- [HIST - History](#)
- [HLTH - Health Sciences](#)
- [HONR - Honors Program](#)
- [HUMN - Humanities](#)
- [INTB - International Business](#)
- [INTD - Interdisciplinary](#)
- [JAPN - Japanese Studies](#)
- [JOUR - Journalism](#)
- [KINS - Kinesiology](#)
- [LAWS - Law](#)
- [LIBR - Library](#)
- [LING - Linguistics](#)
- [MATH - Mathematics](#)
- [MGMT - Management](#)
- [MRKT - Marketing](#)
- [MUSC - Music](#)
- [NSCI - Natural Science](#)
- [NRES - Natural Resources](#)
- [NURS - Nursing](#)
- [OFFC - Office Administration](#)
- [PHIL - Philosophy](#)
- [PHYS - Physics](#)
- [PNUR - Practical Nursing](#)
- [POLI - Political Science](#)
- [PSYC - Psychology](#)
- [READ - Reading](#)
- [RECA - Recreational Activities](#)
- [RECS - Recreation Studies](#)
- [SERV - Student Services](#)
- [SOCY - Sociology](#)
- [SOWK - Social Work](#)
- [SPAN - Spanish](#)
- [THEA - Theatre](#)
- [USEM - University Seminar](#)

{courses}

Campus Map

[View the Campus Map](#)

Glossary of Terms

Terms & Phrases

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.

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

Admission: Acceptance for enrollment.

Advisor: Faculty member who offers academic advice, explains requirements and assists in scheduling.

Anchor Access: Accessed from the My.LSSU Portal. Anchor Access is an important online tool students will use at LSSU. Access to registration, financial aid, tuition & billing information, all academic information, parking, employee information, addresses, etc.

Associate Degree: Awarded for a "two-year" program.

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

Calendar: Important dates of the academic year.

Certificate: Normally requires one year of study.

College: Academic unit administered by a dean, comprising two or more departments or schools.

Corequisite: A Course taken during the same semester as another course.

Cognate: A specified course, generally in field other than the major, which students must take for their program.

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.

*ENGL110 First-Year
Composition I.....3*

Credit: See *academic credit*.

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

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

Discipline: Group of related courses, such as mathematics.

Elective: Course distinguished from required course, selected from a number of specified courses.

Field Placement: *See practicum.*

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

Full-Time Student: Enrollment of 12 or more credits in a semester (nine credits for graduate students).

General Education Requirements: Courses students must take in addition to their major to earn a bachelors, or an associates degree. Provides a broadly based education.

GED Examinations: (General Education Development examination): A test for students who did not finish high school. Can be used in place of high school graduation.

Grade Point Average (GPA): Number of points divided by the hours of credit attempted. It calculates the average grade point for all classes. Cumulative grade point average is the average for all 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 a specific area of study.

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

My.LSSU: Web portal to Anchor Access, email service, school announcements, etc.

Part-Time Student: Enrollment of fewer than 12 credits in a semester (fewer than nine for graduate students).

Practicum: Another word for internship.

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

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

Registration: Each semester students register for specific courses for the next semester, pay tuition, etc.

Required Courses: Courses students must take to earn a degree. Failed courses must be repeated.

School: *See Departments.*

Semester: Sometimes called "term": *See academic year.*

Term: Sometimes called "semester": *See academic year.*

Transcript: Official record of coursework maintained by the LSSU Registrar's Office.

Transcript, Official: Mailed directly from principal's or registrar's office of issuing

institution to LSSU Registrar's Office. It must bear the seal of the institution and signature or stamp of school official.

Withdrawal: Procedure used when students withdraw from LSSU.

University Calendar

- [Current Academic Calendar](#)

Academic Programs

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Catalog Cover



Accounting: Bachelor of Science

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. 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.

150 Hour Concentration:

Students desiring to become Certified Public Accountants must complete 150 hours of coursework as required by the State of Michigan. LSSU students on this path will work with an advisor to select 26 additional credits beyond the accounting degree's required 124 credits. LSSU's accounting degree curriculum includes the courses required by the State of Michigan. Thus, students are encouraged to complete

courses in other business areas that align with their academic and career objectives and help prepare them for the CPA exam. During their last semester, students will be required to complete **ACTG450 CPA Exam Preparation (3 credits)** as an independent study.

Program Learning Outcomes:

Accounting Theory and Practice - Apply accounting standards to information for financial accounting, managerial/cost accounting, governmental accounting, auditing, tax and accounting information systems purposes.

Effective Communication - Record, report and communicate accounting information relevant to internal and external users.

Business Ethics - Apply ethical accounting practices.

Global Business Awareness – Apply knowledge of international accounting issues.

Teamwork - Work productively as a member of a team.

Business Knowledge - Apply knowledge of business-core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government and Society 3
- BUSN466 Business Policy 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Introduction Management Information Systems 3
- MGMT360 Management Concepts and Apps 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles and Strategy 3

Major Requirements (41 Credits)

- ACTG232 Intermediate Accounting I 4
- ACTG233 Intermediate Accounting II 4
- ACTG332 Cost Management I 4
- ACTG333 Cost Management II 4
- ACTG334 Accounting Information Systems 3
- ACTG421 Federal Taxation Accounting I 3
- ACTG422 Federal Taxation Accounting II 3
- ACTG427 Auditing 4
- ACTG432 Advanced Accounting I Consolidations 4
- ACTG433 Advanced Accounting II Governmental 4
- MATH111 College Algebra 3

- BUSN101 Freshman Seminar 1

Electives (8-10 Credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Biochemistry Pre-Professional: Bachelor of Science

The Chemistry Program at Lake Superior State University is now accredited by the American Chemical Society (ACS). According to the 2011 National Occupational Employment and Wage Estimator, more people are employed as chemists and chemical technicians than in any other job classification in the life and physical science occupations (<http://stats.bls.gov>). With many free electives and a common general education core, a chemistry degree can also be used in combination with other majors or minors such as pre-professional (medicine, pharmacy, veterinary, law, etc.), engineering, business, biology, and many more to match student interest and career plans.

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

The LSSU chemistry program has been approved by the American Chemical Society, and may provide certified degrees in Chemistry, Forensic Chemistry, Biochemistry Pre-Professional, and Environmental Chemistry if a student chooses this track. In addition, the BS in Chemistry Secondary Education degree may also be certified by the ACS. Graduates completing the prescribed requirements are awarded an ACS certificate signifying their completion of the approved degree and can qualify for membership in the Society upon graduation.

American Chemical Society
Committee on Professional Training
155 Sixteenth Street, N.W.,
Washington, D.C. 20036

Program Learning Outcomes:

Demonstrate proficiency in the five Chemistry subdisciplines defined by the American Chemical Society, including analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry.

Demonstrate readiness for employment as a chemist, science technician, or chemical technician at the baccalaureate level or graduate and professional level study.

With the guidance of a faculty mentor, develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge in the field of Biochemistry.

Degree Requirements

Chemistry Degree Requirements (48 credits minimum)

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM261 Inorganic Chemistry 4
- CHEM326 Organic Chemistry II 4
- CHEM332 Instrumental Analysis 4
- CHEM351 Introductory Biochemistry 4
- CHEM353 Introductory Toxicology 3
- CHEM361 Physical Chemistry I 4
- CHEM363 Physical Chemistry Lab 1
- CHEM395 Junior Seminar 1
- CHEM452 Biochemistry II 4
- CHEM499 Senior Seminar 1

For American Chemical Society certified degree, additionally required (total lab hours must be at least 400 hours). See Department Chair for special rules regarding ACS certification:

- [CHEM495](#) Senior Project 2

Biology Courses (16 credits)

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL220 Genetics 4
- Any BIOL 400 level course 4

Support Courses (20 credits)

- USEM101 University Seminar: Foundation Success 1
- BUSN211 Business Statistics 3
- **or**
- MATH207 Principles of Statistical Methods 3
- MATH151 Calculus I 4
- MATH152 Calculus II 4
- PHYS231 Applied Physics I 4
- PHYS232 Applied Physics II 4

General Electives (16 credits minimum)

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of a 2.00 or higher is required in your General Education Requirements.

Biology: Bachelor of Science

The Bachelor of Science degree in biology combines theory and concepts of biology with intensive, hands-on experiences in our state-of-the-art laboratories and a wealth of close-by field sites. Students build on a core of biology classes by selecting

the physiology and taxonomy classes and other electives that best fit their interests.

The program is an excellent preparation for biology or related careers. Our graduates are currently employed as doctors, dentists, veterinarians, biological researchers, laboratory technicians, consultants and teachers. Many careers in biology require education beyond the baccalaureate degree and LSSU's biology program has a proven record of excellent preparation for professional and graduate school.

Animal Biology concentration - In this program, you will study the physiology, nutrition, behavior, and health of animals, with focus on species that are economic resources or beloved companions. Includes instruction in molecular and cell biology, microbiology, nutrition and physiology, ecology and behavior, genetics and evolutionary biology, disease prevention, and applications to specific species and phyla. As an animal biology major, you'll have the chance to put your theoretical knowledge into practice by working with wild and domesticated animals in hands-on situations. It will prepare you for employment in laboratories, zoos, farms, or animal shelters.

Food and Ecology concentration - prepares students for specific careers or graduate studies in particular aspects of the food system. These careers range from technical, policy, outreach, and research work with federal, local and tribal government agencies; university research, food businesses; NGOs working to improve health and nutrition, advocacy groups, industry groups. The skills required for these careers thus range across a number of disciplines. This program provides the required basis in biological sciences and adds choices in other disciplines to let students tailor their program to their specific interests. Students interested in pursuing graduate school in the sciences should consider adding additional chemistry classes, including organic chemistry, to their schedule. The program requires that students complete an apprenticeship class with an organization working in an aspect of the food system and complete a senior project.

Pre-Medical concentration - prepares students for medical, dental, optometry, podiatry, chiropractic, and physician assistant graduate studies. Biology students will work with a pre-professional advisor to select the electives best suited for the health professional program of their choice while also providing a well-rounded biology education. This program has an embedded chemistry minor that meets the requirements of most U.S. medical schools. The LSSU Biology department is recognized by all health professional schools in Michigan as a top rate biology program.

LSSU participates in the Michigan State University College of Human Medicine's Early Assurance Program. During their junior year, students who excel in the LSSU biology pre-medical program may apply to the College of Human Medicine, and selected students will be assured of admission and begin a relationship with MSU College of Human Medicine during their senior year of college.

Pre-Veterinary concentration - with an embedded chemistry minor, prepares students to enter veterinary college after graduation from LSSU. It was designed to meet the specific requirements for the Michigan State University-College of Veterinary Medicine, but our students go to vet schools all over the country, for example North Carolina State, Oklahoma State and University of Illinois. This program stresses not only academics, but also the animal care experience that is critical for gaining admission to a veterinary college.

Program Learning Outcomes:

Thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Effectively communicate the results or outcomes of a scientific investigation in multiple formats.

Engage in professional activities related to the study of biological sciences and practice good professional ethics.

Available degrees (see specific requirements further down the page):

- [Bachelor of Science Biology](#)
- [Bachelor of Science Biology, Animal Biology Concentration](#)
- [Bachelor of Science Biology, Food and Ecology Concentration](#)
- [Bachelor of Science Biology, Pre-Medical Concentration](#)
- [Bachelor of Science Biology, Pre-Veterinary Concentration](#)

Degree Requirements

Bachelor of Science Biology

Biology Courses (26 credits)

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL199 Freshman Seminar 1
- BIOL204 General Microbiology 4
- BIOL220 Genetics 4
- BIOL280 Biostatistics 3
- BIOL299 Sophomore Seminar 1
- BIOL337 General Ecology 3
- BIOL399 Planning Research Project 1
- BIOL499 Senior Symposium 1

Focal Courses in Biology (7 - 8 credits)

Physiology Elective (1 course from)

- BIOL315 Plant Physiology 4
- BIOL330 Animal Physiology 4
- BIOL421 Cell Biology 4

Taxonomy Elective (1 course from)

- BIOL202 Field Botany 3
- BIOL302 Invertebrate Zoology 3
- BIOL303 General Entomology 4
- BIOL306 Mycology 3
- NRES310 Ichthyology 3
- NRES311 Mammalogy 3
- NRES312 Ornithology 3
- BIOL422 Parasitology 3
- BIOL425 Virology 3
- NRES475 Aquatic Entomology 3

Biology Cognates (21 credits)

21 credits of any BIOL courses not used to satisfy one of the other requirements, or any NRES courses other than NRES199, NRES299, NRES250, NRES398, NRES399, NRES450, NRES490, NRES495, or NRES499. A minimum of 17 credits must be from 300/400 level courses. At least one elective must be a 400 level course.

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- **or**
- CHEM208 Survey of Organic Chemistry 4
- MATH111 College Algebra 3
- MATH112 Calculus for Business & Life Science 4
- Physical Science (CHEM, PHYS, GEOL) course with lab 4

Free Electives - 16 - 19 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Animal Biology Concentration

Biology Courses (26 credits)

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL199 Freshman Seminar 1
- BIOL204 General Microbiology 4
- BIOL220 Genetics 4
- BIOL280 Biostatistics 3
- BIOL299 Sophomore Seminar 1
- BIOL337 General Ecology 3
- BIOL399 Planning Research Project 1
- BIOL499 Senior Symposium 1

Focal Courses in Animal Biology (20 credits)

- BIOL208 Principles of Animal Biology and Health 3
- BIOL243 Vertebrae Anatomy 4
- BIOL330 Animal Physiology 4
- BIOL405 Animal Behavior 3
- BIOL420 Evolutionary Analyses 3
- BIOL335 Animal Nutrition 3
- **or**
- BIOL426 Animal Disease and Zoonoses 3

Cognates (Choose 12 credits from)

Zoology:

- NRES240 Natural History of Vertebrates 3
- BIOL302 Invertebrate Zoology 3
- BIOL303 General Entomology 4
- NRES310 Ichthyology 3
- NRES311 Mammalogy 3
- NRES312 Ornithology 3
- NRES475 Aquatic Entomology 3

or/and**Animal Health:**

- BIOL306 Mycology 3
- BIOL423 Immunology* 4
- BIOL422 Parasitology 3
- BIOL425 Virology 3
- CHEM353 Toxicology* 4

Support Courses (17 credits)

- CHEM115 General Chemistry I 5
 - CHEM116 General Chemistry II 5
 - CHEM225 Organic Chemistry 4
- or**
- CHEM208 Survey of Organic Chemistry 4
 - MATH111 College Algebra 3

Free Electives - 21 - 24 credits as needed to reach 124 total credits

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Requires CHEM225 and CHEM351

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Food and Ecology Concentration**Biology Foundation and Research Courses (26 credits)**

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL199 Freshman Seminar 1
- BIOL204 General Microbiology 4
- BIOL220 Genetics 4
- BIOL280 Biostatistics 3
- BIOL299 Sophomore Seminar 1
- BIOL337 General Ecology 3

- BIOL399 Planning Research Project 1
- BIOL499 Senior Symposium 1

Focal Courses in Food Systems (12-13 credits)

- BIOL307 US Food Systems 3
- BIOL202 Plant Sciences: Identification and Diversity 3
- BIOL235 Protected Horticulture 3
- BIOL389 Apprenticeship in (Food Systems) 3-4

Speciality Cognates (6 - 11 credits)

Choose One Area:

Policy and Communications (select 3 classes - 9 credits)

- POLI130 Intro to State and Local Government 3
- POLI301 Policy Analysis and Evaluation 3
- COMM302 Argumentation and Advocacy 3
- or**
- COMM320 Public Relations 3

Production (11 credits)

- BIOL232 Introduction to Aquaponics 4
- BIOL306 Mycology 3
- BIOL315 Plant Sciences: Structure and Function 4

Marketing (select 2 classes - 6 credits)

- MRKT281 Introduction to Marketing 3
- MRKT384 Social Media Marketing 3
- MRKT386 Mobile Marketing 3

Analytics (select 3 classes - 8-9 credits)

- BIOL385 Public Health Statistics and Epidemiology 3
- EVRN131 Introduction to GIS 3
- EVRN225 Intermediate GIS 2
- EVRN325 Geospatial Analysis 3

Support Courses (8 credits)*

- CHEM115 General Chemistry 5
- MATH111 College Algebra 3

Free Electives - credits as needed to reach 124 total credits.

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Students interested in science graduate programs should consult with their advisor regarding additional chemistry courses.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Medical Concentration

Biology Courses (34 credits)

- BIOL121 Human Anatomy and Physiology I 4
- BIOL122 Human Anatomy and Physiology II 4
- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL199 Freshman Seminar 1
- BIOL204 General Microbiology 4
- BIOL220 Genetics 4
- BIOL280 Biometrics 3
- BIOL299 Sophomore Seminar 1
- BIOL337 General Ecology 3
- BIOL399 Planning Research Project 1
- BIOL499 Senior Symposium 1

Physiology Elective (1 course from)

- BIOL330 Animal Physiology* 4
- BIOL421 Adv Cell & Molecular Biology* 4

Advanced Study - Select 17 credits from the following list:

- BIOL243 Vertebrate Anatomy 4
- BIOL306 Mycology 3
- BIOL332 Embryology 3
- BIOL380 Hematology 4
- BIOL385 Public Health Statistics and Epidemiology 3
- BIOL406 Immunohematology 3
- BIOL422 Parasitology 3
- BIOL423 Immunology 3
- BIOL425 Virology 3
- BIOL426 Animal Disease and Zoonosis 3
- BIOL433 Histology and Histopathology 4
- BIOL455 Body Fluids Analysis 3
- BIOL480 Advanced Clinical Microbiology 4

Support Courses

- CHEM115 General Chemistry 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM326 Organic Chemistry II 4
- CHEM351 Biochemistry 4
- MATH111 College Algebra 3
- PHYS221 Principles of Physics I 4
- PHYS222 Principles of Physics II
- HLTH328 Multicultural Approaches to Health Care 3

- PSYC101 Introduction to Psychological Science 3
- SOCY101 Introduction to Sociology 4

Free Electives - 12 - 14 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Veterinary Concentration

Biology Courses (26 credits)

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL199 Freshman Seminar 1
- BIOL204 General Microbiology* 4
- BIOL220 Genetics 4
- BIOL280 Biometrics 3
- BIOL299 Sophomore Seminar 1
- BIOL337 General Ecology 3
- BIOL399 Planning Research Project 1
- BIOL499 Senior Seminar 1

Physiology Elective (1 course from)

- BIOL330 Animal Physiology 4
- BIOL421 Adv Cell & Molecular Biology* 4

Taxonomy Elective (1 course from)

- BIOL306 Mycology 3
- BIOL422 Parasitology 3
- BIOL425 Virology 3

Support Courses (37 credits)

- CHEM115 General Chemistry 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM326 Organic Chemistry II 4
- CHEM351 Biochemistry 4
- MATH111 College Algebra 3
- MATH112 Calculus for Business/Life Science 4
- PHYS221 Principles of Physics I 4
- PHYS222 Principles of Physics II 4

Advanced Study - Select 17 credits from the following list:

- BIOL208 Principles of Animal Biology and Health 3
- BIOL243 Vertebrate Anatomy 4
- BIOL306 Mycology 3

- BIOL332 Embryology 3
- BIOL335 Animal Nutrition* 3
- BIOL380 Hematology 4
- BIOL405 Animal Behavior 3
- BIOL423 Immunology 4
- BIOL426 Animal Disease and Zoonoses 3
- BIOL433 Histology and Histopathology 4
- BIOL480 Advanced Microbiology 4

*These courses required by MSU-CVM.

Free Electives - 9 - 11 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Business Administration: Bachelor of Science

The Business Administration degree provides students with a broad overview of business concepts, along with particular emphasis in one functional area as identified by the minor selected. The intent of this degree is to create a well-rounded graduate with a basic understanding of all aspects of a business organization, both in the office and on the workplace floor. This degree is designed specifically for individuals who acquired training at community colleges, technical institutes, industry-related schools, etc., or have several years of workplace experience, and want to continue their education in the area of business.

Program Learning Outcomes:

Business Core: Apply knowledge of business core subjects.

Business Plan: Apply skills in research, communication and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government & Society 3
- BUSN466 Business Policy 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Introduction Management Information Systems 3
- MGMT360 Management Concepts and Applications 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles and Strategy 3

Major Requirements (4 Credits)

- BUSN101 Freshman Seminar 1
- MATH111 College Algebra 3

Disciplinary Requirement: Pick one Minor from the following:

- Accounting-Finance
- Economics-Finance
- Human Resource Management
- International Business
- Marketing
- Public Relations
- Sports Marketing
- Cognate of 15 or more credits approved by the Dean

*Students can not double major in discipline in which minor is selected.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Business Administration - Entrepreneurship: Bachelor of Science

The entrepreneurship major is designed to develop students' skills so that they are both confident and competent in analyzing new business ideas; refining a vision of a new business into the kind of business plan lenders and investors are likely to approve; and, translating the business plan into the start-up, launch, daily management, and growth and exit strategies most relevant and feasible for a small business venture. The entrepreneurship major also prepares students for working within a small, entrepreneurial firm, as an employee with specific business skills tailored to the needs of the smaller firm. The study of entrepreneurship includes classes in marketing, accounting, management, and entrepreneurship, and requires an internship placement in a small firm or as an advisor to a small firm. These courses, along with the common professional business core courses, will provide students with the knowledge, training, and practical experience required to become successful small business owners, counselors, and employees.

Program Learning Outcomes:

Business Plan Development - Develop a sound and viable business plan for a new venture.

Human Resource Development - Explain tools to motivate and retain workers in a small firm.

Pitch Deck - Present a professional-level PowerPoint presentation to the class.

Pro Forma Financial Statements - Develop pro forma balance sheet and income statement.

Business Knowledge – Apply knowledge of business core subjects.

Professional Skills – Apply professional-level skills in research, communication, critical thinking, and business ethics.

Degree Requirements

Common Professional Component (48 Credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government & Society 3
- BUSN466 Business Policy 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Introduction Management Information Systems 3
- MGMT360 Management Concepts and Applications 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles and Strategy 3

Major Requirements (7 credits)

- BUSN101 Freshman Seminar 1
- BUSN399 Internship 3
- MATH111 College Algebra 3

Minimum 21 Credits from 3 disciplines should be selected from the following list:

- ACTG334 Accounting Information Systems 3
- BUSN389 Entrepreneurship 3
- INTB289 Competing in the Global Market Place 3
- INTB486 International Marketing 3
- MGMT365 Human Resource Management 3
- MGMT380 Principles of Leadership 3
- MGMT464 Organizational Behavior 3E
- MGMT476 Employee Training and Development 3
- MRKT283 Principles of Selling 3
- MRKT385 Services Marketing
- MRKT387 Advertising Theory and Practice 3
- MRKT388 Retail Management 3

Free Electives to reach 124 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Business Administration - International Business: Bachelor of Science

A major in international business is intended to develop a student's ability to meet the challenges of the global business environment. In addition to providing the fundamental foundations of all business functional areas, the major teaches the student to identify and develop appropriate solutions to situations that are unique

to conducting business in the global environment. The international business major provides the student with an understanding of international business by providing upper-level courses in international economics, international marketing, cultural differences, politics and foreign languages. Students will also participate in an approved international experience which will involve either study abroad, work experiences, or internships.

Program Learning Outcomes:

International Business Knowledge – Apply international business knowledge in the areas of management, marketing, economics, and business law.

Cultural Systems - Analyze how cultural, economic, geographical and political paradigms impact ethical issues in various international business decision processes.

Synthesis - Evaluate nature, significance and context of managerial activities as undertaken by leadership in various organizations in international business contexts.

Critical Thinking - Work in teams, use critical thinking to analyze and solve problems and effectively communicate legal issues pertaining to international business law and international business operations.

International Marketing, Culture and Communication - Function effectively in situations characterized by cultural diversity. This includes awareness of own cultural intelligence and awareness of the cultural intelligence of others.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills – Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government & Society 3
- BUSN466 Business Policy 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Introduction Management Information Systems 3
- MGMT360 Management concepts & Applications 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles and Strategy 3

Major Requirements (34 Credits)

- BUSN101 Freshman Seminar 1
- ECON408 International Economics 3
- INTB289 Competing in the Global Marketplace 3
- INTB375 International Business Law 3

- INTB420 Comparative International Management 3
- INTB486 International Marketing 3
- MATH111 College Algebra 3
- International Experience (BUSN399 or INTD310 or INTD410) 3

Regional Electives (Minimum 3-4 Credits)

Language Electives (Minimum 8 Credits)

Free Electives to reach 124 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Business Administration - Management: Bachelor of Science

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

Program Learning Outcomes:

Leadership - Utilize exceptional interpersonal skills, inclusive practices and performance management strategies to engage and develop team and talent.

Management Practice - Develop goals, and design and implement control mechanisms toward the successful achievement of those goals, for themselves and others.

Communication of Ethical and Critical Thinking - Make ethical decisions, utilizing critical thinking skills, and clearly communicate the decisions made along with the rationale.

Technology - Describe the role and impact of technology on managers and the organization.

Data-Driven Decision-Making - Develop and implement data-driven management decision-making in business operations.

Business Law - Define and explain the basic principles of contract, personal property and sales, agency, partnerships, corporate law, commercial paper law that apply to business transactions, etc.

Labor Law - Define and explain labor law through case study method as it relates to Civil Rights Act, Age Discrimination Act, Family Medical Leave Act, OSHA, Unfair Labor Practices (union and employers), National Labor Relations Act, antitrust laws, representative elections procedures, and other legislations, etc.

HR Management - Define and explain all the functions of human resource management: recruiting, selecting, training and development, compensation, performance appraisals, labor relations, etc.

Business Knowledge - Apply knowledge of business core subjects. Professional Skills – Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government & Society 3
- BUSN466 Business Policy 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Introduction Management Information Systems 3
- MGMT360 Management Concepts and Applications 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles and Strategy 3

Major Requirements (30 Credits)

- BUSN101 Freshman Seminar 1
- BUSN308 Managing Cultural Differences 3
- BUSN355 Business Law II 3
- MGMT365 Human Resource Management 3
- MGMT380 Principles of Leadership 3
- MGMT451 Labor Law 4
- MGMT464 Organizational Behavior 3
- MGMT469 Collective Bargaining 3
- MGMT476 Employee Training Development 4
- MATH111 College Algebra 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Business Administration - Marketing: Bachelor of Science

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

Program learning Outcomes:

Basic Marketing Knowledge - Apply knowledge of marketing and other functional areas of business and their relationship to each other.

Decision Making - Research, synthesize, analyze and accurately interpret quantitative and qualitative information to drive effective marketing decision making.

Communication in Marketing - Communicate effectively, orally and in writing, their marketing observations, findings, research, and recommendations to a large audience.

Employability Skills - Apply entry-level, marketable skills appropriate to a marketing-related position and team in industry, such as in sales, event planning, marketing communications, public relations, retailing, market analysis, or product management.

Use of Marketing Technology - Use technology to assist with the synthesis and analysis of data, oral and written communications, and group collaboration.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government & Society 3
- BUSN466 Business Policy 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Introduction Management information systems 3
- MGMT360 Management Concepts and Applications 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles and Strategy 3

Major Requirements (Minimum 31 Credits)

- BUSN101 Freshman Seminar 1
- MRKT381 Consumer Behavior 3
- MRKT480 Marketing Research 3
- MRKT481 Marketing Management 3
- MATH111 College Algebra 3
- Four Marketing Electives* 12
- Two Business Electives ** 6-8

*Electives in Marketing, INTB486, or COMM320

**Electives in 300/400 level courses in BUSN, MGMT, ECON, FINC, ACTG, INTB.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Cannabis Business: Bachelor of Science

The bachelor of science in Cannabis Business provides students with the knowledge and skills necessary to launch a business in the rapidly expanding industry related to cannabis. This program is designed for future managers, supervisors, and entrepreneurs in a cannabis enterprise. The program has at its foundation the basics of business and business management and then applies those principles to specific cannabis businesses such as cultivation facilities and dispensaries. This program is well rounded and is designed to lead to a wide range of employment opportunities. The unique issues related to state, federal, provincial and international laws are evaluated and analyzed in order to plan, develop and launch a cannabis business within legal constraints. These courses, along with the common professional business core courses, will provide students with the knowledge, training, and practical experience required to become successful small business owners, counselors, and employees.

Students are encouraged, but not required, to take elective courses in the associate program in Cannabis Science in order to augment their skills in safety and testing.

Program Learning Outcomes:

E-Marketing - Use digital, social, and mobile marketing to promote a business or product.

Cannabis Business - Identify, describe, analyze and synthesize businesses in the cannabis industry, including, but not limited to, medicinal, cultivation, dispensary, processing, materials, testing and safety.

Cannabis and Society - Explain, analyze and compare and contrast state, federal, provincial and international laws related to growing, distributing, selling and marketing cannabis products and describe the effects of cannabis on society.

Cannabis Economics - Think critically and analytically about the legalization of cannabis and its effects on employment, policy and the economy.

Cannabis Entrepreneurship - Prepare a business canvas, pitch deck and marketing plan for a startup cannabis business.

Horticulture – Apply foundational understanding of growing and harvesting that is needed to manage a cultivation operation.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Core (45 Credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3

- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government & Society 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Introduction Management Information Systems 3
- MGMT360 Management Concepts and Applications 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles and Strategy 3

Major Requirements (38 Credits)

- BIOL104 Survey of General Biology 4
- BIOL235 Intro to Protected Horticulture 3
- BUSN101 Freshman Seminar 1
- BUSN308 Managing Cultural Differences 3
- CBUS122 Survey of Cannabis Business 2
- CBUS203 Cannabis Economics 3
- CBUS305 Business Cannabis Cultivation/Disp 3
- CBUS360 Cannabis Law and Policy 1
- CBUS389 Cannabis Entrepreneurship 3
- CBUS466 Cannabis Business Policy 3
- MRKT283 Principles of Selling 3
- MRKT381 Consumer Behaviors 3
- MATH111 College Algebra 3
- SOCY420 Sociology of Cannabis 3

E-Marketing Certification (9 credits)

- MRKT383 Digital Marketing 3
- MRKT384 Social Media Marketing 3
- MRKT386 Mobile Marketing 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Cannabis Chemistry: Bachelor of Science

The bachelor of science in Cannabis Chemistry equips graduates with the skills necessary to gain employment in the emerging cannabis markets in Michigan, the United States, and beyond. Cannabis Chemistry graduates earn over 600 hours of hands-on, laboratory experience to prepare them for a career as chemist in the cannabis field. Cannabis chemists leave trained on state of the art instrumentation and in techniques that are industry standards. The chemistry program at Lake Superior State University is approved by the American Chemical Society.

Program Learning Outcomes:

Demonstrate proficiency in the following Chemistry subdisciplines: analytical chemistry, biochemistry, and organic chemistry.

The B.S. Cannabis Chemistry student will be well-prepared for employment within

the field or graduate-level study.

With the guidance of a faculty mentor, develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge in the field of Cannabis Chemistry.

Degree Requirements

Chemistry Degree Requirements (51 credits minimum)

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CCHM120 Cannabis Chemistry 1
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CCHM240 Cannabis Plant Sample Prep 2
- CCHM245 Cannabis Chemistry II 1
- CHEM310 Applied Spectroscopy 4
- CHEM326 Organic Chemistry II 4
- CHEM332 Instrumental Analysis 4
- CCHM350 Cannabis Chemistry III 1
- CHEM351 Introductory Biochemistry 4
- CHEM353 Introductory Toxicology 3
- CHEM355 Medicinal Chemistry 3
- CHEM395 Junior Seminar 1
- CCHM440 Cannabis Separations Chemistry 4
- CHEM499 Senior Seminar 1

Biology Courses (15 credits)

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL204 General Microbiology 4
- BIOL235 Intro to Protected Horticulture 3

Support Courses (10 credits)

- USEM101 University Seminar I: Foundations for Success 1
- MATH111 College Algebra 3
- BUSN211 Business Statistics 3
- **or**
- MATH207 Principles of Statistical Methods 3
- ECON202 Principles of Microeconomics 3

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of 2.00 is required in your General Education Requirements.

Chemistry: Bachelor of Science

The Chemistry Program at Lake Superior State University is now accredited by the American Chemical Society (ACS). According to the 2011 National Occupational

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

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

The LSSU chemistry program has been approved by the American Chemical Society, and may provide certified degrees in Chemistry, Forensic Chemistry, Biochemistry Pre-Professional, and Environmental Chemistry if a student chooses this track. In addition, the BS in Chemistry Secondary Education degree may also be certified by the ACS. Graduates completing the prescribed requirements are awarded an ACS certificate signifying their completion of the approved degree and can qualify for membership in the Society upon graduation.

American Chemical Society
Committee on Professional Training
155 Sixteenth Street, N.W.,
Washington, D.C. 20036

Program Learning Outcomes:

Demonstrate proficiency in the five Chemistry subdisciplines defined by the American Chemical Society, including analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry.

Demonstrate readiness for employment as a chemist, science technician, or chemical technician at the baccalaureate level or graduate and professional level study.

With the guidance of a faculty mentor, develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge in the field of Chemistry.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Chemistry](#)
- [Bachelor of Science Chemistry, Secondary Teaching](#)

Degree Requirements

Bachelor of Science Chemistry

Chemistry Degree Requirements (57 credits minimum)

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4

- CHEM231 Quantitative Analysis 4
- CHEM261 Inorganic Chemistry 4
- CHEM310 Applied Spectroscopy 4
- CHEM326 Organic Chemistry II 4
- CHEM332 Instrumental Analysis 4
- CHEM351 Introductory Biochemistry 4
- CHEM361 Physical Chemistry I 4
- CHEM362 Physical Chemistry II 3
- CHEM363 Physical Chemistry Lab 1
- CHEM395 Junior Seminar 1
- CHEM461 Advanced Inorganic Chemistry 3
- CHEM462 Advanced Inorganic Chemistry Lab 1
- CHEM495 Senior Project 2
- CHEM499 Senior Seminar 1
- CHEM/CCHM Electives 300 level or higher (3 cr min)

Support Courses (20-21 credits)

- USEM101 University Seminar I: Foundation Success 1
- BUSN211 Business Statistics 3
- or**
- MATH207 Principles of Statistical Methods 3
- MATH151 Calculus I 4
- MATH152 Calculus II 4
- or**
- MATH112 Calculus for Business & Life Science I 4
- EGNR140 Linear Algebra Num Meth Engineers 2
- EGNR245 Calculus App for Technology 3
- Two semesters of college physics with laboratory (8 cr min)

General Electives (24 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of 2.00 is required in your General Education Requirements.

Bachelor of Science Chemistry, Secondary Teaching

Chemistry Requirements (44 credits)

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM261 Inorganic Chemistry 4
- CHEM326 Organic Chemistry II 4
- CHEM332 Instrumental Analysis 4
- CHEM351 Introduction to Biochemistry 4
- CHEM361 Physical Chemistry I 4

- CHEM362 Physical Chemistry II 4
- CHEM363 Physical Chemistry Lab 1
- CHEM395 Junior Seminar 1
- CHEM499 Senior Seminar 1

For American Chemical Society certified degree, additionally required (total lab hours must be at least 400 hours). See Department Chair for special rules regarding ACS certification:

- CHEM Elective 300 or higher (3 cr min)
- CHEM495 Senior Project 2

Complete one methods course from the following:

- EDUC443 Science Methods for Secondary Teachers 3 **or**
- EDUC453 Directed Study in Science Methods 3

Support Courses (19 credits)

- MATH151 Calculus I 4
- MATH152 Calculus II 4
- BUSN211 Business Statistics 3 **or**
- MATH207 Principles of Statistical Methods 3
- PHYS221 Principles of Physics I 4 **or**
- PHYS231 Appl Phys Engineer/Scientist I 4
- PHYS222 Principles of Physics II 4 **or**
- PHYS232 Appl Phys Engineer/Scientist II 4

Professional Education Requirements and Education Cognates- see [Secondary Education](#).

Approved Teaching Minor Recommended - see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Computer Engineering: Bachelor of Science

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

- The program provides an excellent mix of theory and practical laboratory experiences, preparing you to solve real-world problems.
- For your senior year experience, choose from opportunities in cooperative education, industry-based projects or research projects.
- Engineering courses begin in your freshman year.
- Opportunities exist for you to work with faculty on current undergraduate research projects.

- You will study assembly language programming, computer architecture, microcontroller hardware and software, databases, digital signals and systems, and networking.
- Concentrations available in robotics and automation and sustainable Energy.

Cooperative Education

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

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Departmental Requirements:

Mathematics

- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH251 Calculus III 4
- MATH308 Probability and Mathematical Statistics 3
- MATH310 Differential Equations 3

Sciences

- CHEM115 General Chemistry I 5
- PHYS231 Applied Physics for Engineers and Scientists I 4
- PHYS232 Applied Physics for Engineers and Scientists II 4

Computer Science

- CSCI105 Intro. to Computer Programming 3
- CSCI121 Principles of Programming 4
- CSCI201 Data Structures and Algorithms 4
- CSCI341 Discrete Structures for Computer Science 4
- or**
- EGEE425 Digital Signal Processing 3

- CSCI434 Operating System Concepts 3

Engineering

- EGEE125 Digital Fundamentals 4
- EGEE210 Circuit Analysis 4
- EGEE250 Microcontroller Fundamentals 4
- EGEE280 Introduction to Signal Processing 5
- EGEE320 Digital Design 4
- EGEE355 Microcontroller Systems 4
- EGEE370 Electronic Devices 4
- EGNR101 Introduction to Engineering 2
- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGNR340 Advanced Numerical Methods for Engineers 1
- EGNR346 Probability and Statistics Lab for Engineers 1

Technical Electives (Minimum 13 Credits):

For students obtaining a concentration, the concentration electives must meet the requirements listed below. Otherwise, all 13 technical elective credits may be selected from the list of technical electives.

- CSCI281 Intro to UNIX and Networking (or higher level CSCI) 3
- EGEE310 Network Analysis (or higher level EGEE) 3
- EGEM220 Statics 3
- EGME275 Engineering Materials (or higher level EGME) 3
- EGET310 Electronic Manufacturing Processes 4
- EGRS365 Programmable Logic Controllers 3
- EGRS460 Control Systems 4
- MATH215 Fund Concepts of Mathematics (or higher level MATH) 3
- or any course from the listed concentrations

Robotics and Automation Concentration (C or better grade required for all courses)

- EGRS385 Robotics Engineering 4
- EGRS430 Systems Integration and Machine Vision 4
- EGRS435 Automated Manufacturing Systems 3

Sustainable Energy Concentration (C or better grade required for all courses)

- EGNR261 Energy Systems and Sustainability 3
- EGNR361 Energy Systems and Sustainability Lab 1

Complete two courses from:

- EGEE330 Electro-Mechanical Systems 4
- EGEE411 Power Distribution and Transmission 3
- EGEE475 Power Electronics 4
- EGNR362 Vehicle Energy Systems 3

Senior Sequence (Complete one of the following sequences):

Industrial Project

- EGNR491 Engineering Design Project I 3

- EGNR495 Engineering Design Project II 3

Cooperative Project

- EGNR250 Cooperative Education 2
- EGNR450 Cooperative Education Project I 4
- EGNR451 Cooperative Education Project II 3
- EGNR491 Engineering Design Project I 3

Research Project

- EGNR260 Engineering Research Methods 2
- EGNR460 Engineering Research Project I 4
- EGNR461 Engineering Research Project II 2

32 credits from Mathematics (including EGNR340) and Natural Sciences is required.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Computer Networking: Bachelor of Science

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

Students will have hands-on experience with Linux, Novell and Windows platforms, as well as networking hardware and operating system installation.

Some of the highlights of the program are:

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

Program Learning Outcomes:

Analyze the needs of a user, design a computer network to satisfy those needs, and install, modify and maintain the network environment relative to both hardware and software. (*Analyze Needs*)

Design, install, and implement appropriate security, intrusion detection, and troubleshooting techniques and methodologies in a communication network. (*Design*)

Evaluate changes in technology, security, and user needs based on accepted and updated best practices in the field. (*Security and Best Practices*)

Communicate technical information relative to problems and solutions to both other professionals in the field as well as involved non-technical persons.
(*Communications*)

Degree Requirements

Departmental Requirements (59 credits)

Departmental GPA must be 2.50 or higher

- CSCI103 Survey of Computer Science 3
- CSCI105 Intro. to Computer Programming 3
- CSCI106 Web Page Design and Development 3
- CSCI121 Principles of Programming 4
- CSCI163 Troubleshooting & Repair of Personal Computers 3
- CSCI211 Database Applications 3
- CSCI221 Computer Networks 3
- CSCI248 Network Operating Systems I 3
- CSCI263 Managing Computer Security 3
- CSCI281 Intro. to UNIX and Networking 3
- CSCI292 Computer Networking Project 4
- CSCI323 Routers and switches 3
- CSCI348 Network Operating Systems II 3
- CSCI351 Mobile Applications Development 3
- CSCI371 Multi-Platform Application Development 3
- CSCI412 UNIX System Administration 3
- CSCI418 Senior Project I 3
- CSCI419 Senior Project II 3
- CSCI422 Network and Computer Security 3

Support Courses (12 credits)

- BUSN121 Introduction to Business 3
- BUSN231 Business Communications 3
- MATH111 College Algebra 3
- MATH207 Princ. of Statistical Methods 3
- ENGL306 Technical Writing 3

Free Electives (17 -20)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.50 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Computer Science: Bachelor of Science

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

Program Learning Outcomes:

Analyze the needs of a user, design a computer software system to satisfy those needs, and write and debug computer programs needed for that system. (*Analyze Needs*)

Evaluate and implement solutions to programming problems using appropriate algorithms, programming languages, user interfaces, and utilities. (*Implement*)

Evaluate changes in technology, software, and user needs based on accepted and updated best practices in the field. (*Best Practices*)

Communicate technical information relative to problems and solutions to both other professionals in the field as well as involved non-technical persons. (*Communication*)

Degree Requirements

Departmental Requirements (62 credits). Departmental GPA minimum of 2.50 or higher.

- CSCI103 Survey of Computer Science 3
- CSCI105 Intro. to Computer Programming 3
- CSCI121 Principles of Programming 4
- CSCI201 Data Structures and Algorithms 4
- CSCI211 Database Applications 3
- CSCI221 Computer Networks 3
- CSCI263 Managing Computer Security 3
- CSCI291 Computer Science Project 4
- CSCI321 Computer Graphics 3
- CSCI325 Web Applications w PHP & Javascript 3
- or**
- CSCI326 Web Applications w ASP.NET 3
- CSCI341 Discrete Structures for Computer Science 4
- CSCI342 Advanced Programming Techniques 4
- CSCI351 Mobile Applications Development 3
- CSCI371 Multi-Platform Application Development 3
- CSCI411 Adv Database & Project Management 3
- CSCI415 Computer Organization & Architecture 3
- CSCI434 Operating Systems Concepts 3
- CSCI418 Senior Project I 3
- CSCI419 Senior Project II 3

Mathematics Requirements (10 credits)

- MATH131 College Trigonometry 3
- MATH112 Calculus for Business & Life Science 4
- or**
- MATH151 Calculus I 4
- MATH207 Prin. of Statistical Methods 3

Other Requirements (6 credits)

- BUSN121 Introduction to Business 3
- ENGL306 Technical Writing 3

Free Electives (13-16 credits)

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.50 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Conservation Biology: Bachelor of Science

The BS in Conservation Biology prepares students for careers whose goal is to solve a wide range of environmental challenges such as invasive species, altered landscapes, species extinctions, or the restoration of degraded aquatic and terrestrial ecosystems. Our selection of rigorous field based courses in watersheds, soils, forestry, ecology (general, fish, wildlife or plant), and organisms (mammalogy, ornithology, ichthyology, or entomology) offers a strong set of foundational courses in the natural sciences. Combining this coursework with interdisciplinary courses and GIS technology adds the breadth needed to formulate sustainable solutions to local, regional and global conservation challenges. Electives allow students to tailor the program to their interests and career goals. Students may choose as a capstone experience, a summer semester internship working in a professional capacity in conservation biology or a senior thesis research project. Students will be prepared for careers or for graduate work in conservation biology or a broad range of related areas.

The Human Dimensions Concentration prepares students for careers in global, national and community conservation advocacy programs including environmental outreach and policy development and communication. This multi-disciplinary program combines a strong core in the biological sciences with classes in geographic information science, communications, business and economics, and political science. The program is flexible, allowing students to select classes that best match their educational and career goals. Students conclude their program by completing a conservation related service learning project for a conservation organization, unit of government, or business (e.g., land conservancies, Michigan Department of Environmental Quality, watershed organizations, zoos and aquariums).

Program Learning Outcomes:

Foundation: Students in the Conservation Biology program will thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation or experiential learning project.

Capstone Project - Capstone project: Students in the Conservation Biology program will design and conduct a scientific investigation or experiential learning project (ELP) using appropriate tools and techniques in order to demonstrate skill in the practice of conservation biology.

Communication and outreach - Students in the Conservation Biology program will effectively communicate the results or outcomes of their independent project in multiple formats.

Professionalism - Students in the Conservation Biology program will engage in professional activities related to the study, conservation, or management of natural resources.

Post-graduation - careers and further education - Graduates of the Conservation Biology program will go on to careers in conservation biology or proceed to graduate school to further their education.

Available degrees (see specific degree requirements further down on page):

- [Bachelor of Science Conservation Biology](#)
- [Bachelor of Science Conservation Biology, Human Dimensions Concentration](#)

Degree Requirements

Bachelor of Science Conservation Biology

Departmental Requirements

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- NRES199 Freshman Seminar 1
- NRES203 Fundamentals of Natural Resources 3
- BIOL220 Genetics 4
- NRES230 Introduction to Soil Science 4
- NRES250 Quantitative Biology 3
- BIOL280 Biometrics 3
- NRES284 Principles of Forest Conservation 4
- NRES286 Principles of Watersheds 3
- NRES287 Conservation Biology 3
- NRES299 Sophomore Seminar 1
- NRES304 The Human Environment 3
- BIOL337 General Ecology 3
- BIOL420 Evolutionary Analysis 3
- NRES470 Restoration Ecology 3
- NRES499 Senior Capstone 1

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- EVRN131 Introduction to GIS and GPS 3
- EVRN225 Intermediate GIS 3
- EVRN311 Environmental Law 3
- MATH111 College Algebra 3
- MATH112 Calculus for Business & Life Science 4

Global Perspective - Select 1 course from:

- ECON307 Environmental Economics 3
- SOCY227 Population and Ecology 3
- POLI342 International Environmental Policy 3
- Study Abroad 3+

Internship Option

- NRES398 Planning Experiential Learning Project 1
- NRES497 Internship in Conservation Biology 3

or

Research Option

- NRES399 Research Project Design 1
- NRES495 Senior Project 2

Free Electives to total 124 credits. At least 6 elective credits must be from courses at the 300 level or higher.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Conservation Biology, Human Dimensions Concentration

Departmental Requirements

- BIOL131 General Biology I 4
- BIOL132 General Biology II 4
- NRES199 Freshman Seminar 1
- NRES203 Fundamentals of Natural Resources 3
- BIOL220 Genetics 4
- NRES230 Introduction to Soil Science 4
- NRES250 Quantitative Biology 3
- BIOL280 Biometrics 3
- NRES284 Principles of Forest Conservation 4
- NRES286 Principles of Watersheds 3
- NRES287 Conservation Biology 3
- NRES299 Sophomore Seminar 1
- NRES304 The Human Environment 3
- BIOL337 General Ecology 3
- BIOL420 Evolutionary Analysis 3
- NRES470 Restoration Ecology 3
- NRES499 Senior Capstone 1

Support Courses

- CHEM115 General Chemistry I 5
- EVRN131 Introduction to GIS and GPS 3
- EVRN225 Intermediate GIS 3
- EVRN311 Environmental Law 3
- MATH111 College Algebra 3

Marketing & Management* - 1 course from:

- MGMT360 Management Concepts & Applications 3
- MRKT281 Marketing Principles & Strategies 3
- MRKT385 Services Marketing 3

Political Science* - 1 course from:

- POLI130 Introduction State & local Government 4
- POLI201 Public Administration 3

Communication* - 1 course from:

- COMM280 Understanding Mass Media 3
- COMM302 Argumentation & Advocacy 3
- COMM320 Public Relations 4
- COMM416 Communication in Leadership 3

Global Perspective* - 1 course from:

- ECON307 Environmental Economics 3

- SOCY227 Population and Ecology 3
- POLI342 International Environmental Policy 3
- Study Abroad 3+

***At least 2 of the designated electives must be 300 or 400 level**

Internship Option

- NRES398 Planning Experiential Learning Project 1
- NRES497 Internship in Conservation Biology 3

or

Research Option

- NRES399 Research Project Design 1
- NRES495 Senior Project 2

Free Electives to total 124 credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Creative Writing: Bachelor of Arts

Featuring small workshop classes and instruction by faculty who are published authors, the Creative Writing program of the School of English and Language Studies emphasizes the art and craft of imaginative writing in a range of genres, including poetry, fiction, non-fiction, and performance writing.

Every year the Creative Writing program holds the Osborn Poetry Contest and Short Story contest. Opportunities for publishing and editing are available through work on the literary journal, the student-edited journal or the monthly magazine. Guest writers, public readings and other events are also featured.

Program Learning Outcomes:

Creation - Students will use the elements of craft and the writing process to (1) develop, (2) plan, (3) create, and (4) complete book-length works of literary merit in a genre of their choice.

Critique - The ability to evaluate and articulate how the aspects of craft, such as image, voice, character, sound, story, and setting, contribute to a text's literary, aesthetic, or emotional effects, using the vocabulary of the discipline.

Revision - The ability to judge and reflect thoughtfully on reader feedback and to isolate and manipulate craft elements in revising poetry, prose, and drama.

Publishing/Pathways - Students will (1) analyze the process by which creative work is evaluated for publication and (2) identify significant trends in publishing.

Pathways - Consider the concept of and determine how to create a sustainable writing life consistent with the University's mission to lead students on "paths to rewarding careers and productive, satisfying lives."

Literature - Students illustrate the ability to (1) read literature closely and (2)

borrow craft techniques from professional authors.

Critical Response - Students (1) reflect critically on multiple genres and (2) express constructive feedback to others (a) orally and (b) in writing.

Meta-cognition/Process - Students illustrate the ability to (1) reflect meta-cognitively about process, (a) using feedback from others as well as (b) self-reflection to.

Degree Requirements

Required Courses (48 credits)

- ENGL180 Introduction to Literary Studies 3
- ENGL221 Introduction to Creative Writing 3
- ENGL223 Creative Writing II 3
- ENGL301 Creative Prose Writing 3
- ENGL302 Poetry Writing 3
- ENGL303 Performance Writing 3
- ENGL409 Advanced Writing Workshop 3
- ENGL480 Creative Writing Portfolio I 3
- ENGL482 Creative Writing Portfolio II 3

Select one sequence from:

- ENGL231 American Literature I 3
- ENGL232 American Literature II 3
- **or**
- ENGL233 English Literature I 3
- ENGL234 English Literature II 3

Select two additional literature courses at the 300/400 level

Select two additional professional writing skills courses from:

- ENGL222 English Grammar and Language in Context 3
- ENGL306 Technical Writing 3
- ENGL398 Community Workshop Internship 3
- ENGL399 Publishing Internship 3
- JOUR211 Newswriting 3
- CSCI106 Web Page Design and Development 3

Select one theatre course from:

- THEA251 History of Drama and Theatre I 3
- THEA252 History of Drama and Theatre II 3
- THEA333 Studies in the Drama: The Genre and Theater in Context 3
- THEA309 Theatre Studies: (Topic) 3

English Cognate

- USEM101 University Seminar I: Foundation Success 1

Minor (minimum 20 credits)

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Criminal Justice: Bachelor of Science

Our program has been in place for over forty years and we have an **outstanding reputation for producing well educated and well trained criminal justice practitioners**. Most or many of your classes will be taught by former and active police officers, corrections officers and lawyers. The program combines academic and hands-on training. Courses in criminal investigation, firearms training and agency internships will help you acquire the necessary skills to excel in your future careers.

The Criminal Justice program has been providing students with an opportunity to achieve self-actualization in a number of broad areas. These include, but are not limited to:

A strong focus on critical thinking. The emphasis on abstract thinking using concepts and a focus on critical thinking begins with the CJUS 101 Introduction to Criminal Justice and carries forward to advanced courses. This regiment introduces and acclimates students into a more advanced mindset to help attain academic excellence throughout their four years at LSSU.

A multi-faceted approach. The Department exposes students to varied approaches within tracks in Criminal Justice. This involves understanding the different disciplines and examining how they inter-relate on particular issues. The program also focuses on both macro and micro level of analyses in helping to gain a more comprehensive understanding of issues under study.

A strong emphasis on Practical Application and Skill Development. The program prides itself on emphasizing and implementing application as a central component in many of its courses. Students are expected to refine and build on their knowledge from prior course work in the application of concepts in real life scenarios. The scenario structure allows students to apply the knowledge in independent and group work to identify, pre-plan, problem solve, and create solutions. Our students further have the opportunity to apply concepts during Senior Internships while placed at agencies across the state and nation.

A strong emphasis on Life Long Learning Skills. The program takes pride in being part of an elite academic community that offers undergraduate students the opportunity to undertake actual research. The program believes that all courses taught in the curriculum enhance the student's ability to be Life Long Learners and provides students the necessary tools to conduct a research project. It is identified that our students will be better prepared for graduate school, law school, or other areas of life where these skills can be applied.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field

of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (36 credits)

- USEM101 University Seminar I: Foundation Success 1
- CJUS101 Introduction to Criminal Justice 3
- CJUS102 Police Process 3
- CJUS243 Investigation 3
- CJUS319 Substantive Criminal Law 3
- CJUS321 Ethical Issues in Public Safety 3
- CJUS345 Statistics and Design for Public Safety 4
- CJUS401 Senior Seminar 3
- CJUS402 Criminal Justice Internship 3-9
- CJUS409 Procedural Criminal Law 3
- CJUS 300/400 Level Electives 4

Select one of the following:

- CJUS140 Criminological Theory and Correctional Client Growth 3
or
- SOCY214 Criminology 3

Support Courses (16-17 credits)

- POLI120 Introduction to Legal Processes 3
- PSYC101 Introduction to Psychology 4
- PSYC259 Abnormal Psychology 3
- Approved Diversity Course 3

Select one of the following:

- POLI110 Introduction American Government and Politics 4
or
- POLI160 Introduction Canadian Government Politics 3

Complete at least one Concentration other than MCOLES:

Generalist

- CJUS110 Introduction to Corrections 3
- CJUS212 Loss Control 3
- CJUS200/300/400 Level Electives 9
- CJUS300/400 Level Electives 6

Select one of the following:

- CJUS313 Crisis Intervention Deviant Behavior 3
or
- CJUS411 Police Operations 5

Select one of the following:

- CJUS325 Homeland Security/Emergency Service 3
- or**
- CJUS355 Juvenile Justice 3

(Generalist can only be paired with MCOLES Concentration)

Conservation Officer

- BIOL132 General Biology: Organisms 4
- NRES203 Fund of Natural Resources 3
- CJUS444 Criminalistics 4
- EMED189 Medical First Responder 3
- EVRN131 Introduction to GIS and GPS 3
- FIRE101 Introduction to Fire Science 3
- FIRE102 Wildland and Rural Fire 3
- NSCI103 Environmental Science 3
- NSCI104 Environmental Science Lab 1

Select two of the following:

- BIOL202 Field Botany 3
- NRES240 Natural History of the Vertebrate 3
- NRES310 Ichthyology 3
- NRES312 Ornithology 3

Public Safety

- CJUS203 Cyberterrorism 3
- CJUS206 Law Enforcement/Loss Control Internship 3
- CJUS302 Hate Crimes 3
- CJUS444 Criminalistics 4
- FIRE101 Introduction to Fire Science 3
- FIRE204 Fire Protection Hydraulics and Pumps 3
- FIRE206 Fire Protection Systems, Equipment, Indust Fire Protection 3
- FIRE211 Tactics and Strategy 3
- FIRE219 Firefighter Essentials 3
- FIRE220 Fire Science Certification 4
- EMED189 Medical First Responder 3

Select one of the following:

- CJUS313 Crisis Intervention Deviant Behavior 3
- or**
- CJUS411 Police Operations 5

Law Enforcement

- CJUS110 Introduction to Corrections 3
- CJUS201 Firearms Training 1
- CJUS203 Cyberterrorism 3
- CJUS206 Law Enforcement/Loss Control Internship 3
- CJUS212 Loss Control 3
- CJUS302 Hate Crimes 3
- CJUS444 Criminalistics 4
- FIRE101 Introduction to Fire Science 3

Select one of the following:

- CJUS313 Crisis Intervention Deviant Behavior 3
- or**
- CJUS411 Police Operations 5

Homeland Security

- CJUS103 Introduction to Terrorism/Homeland Security 3
- CJUS203 Cyberterrorism 3
- CJUS204 Domestic and International Terrorism 3
- CJUS302 Hate Crimes 3
- CJUS303 Critical Infrastructure Protection 3
- CJUS325 Homeland Security/Emergency Service 3
- CJUS444 Criminalistics 4
- FIRE101 Introduction to Fire Science 3
- FIRE111 Hazardous Materials 3
- POLI130 Introduction State/Local Government 4

Select one of the following:

- CJUS313 Crisis Intervention Deviant Behavior 3
- or**
- CJUS411 Police Operations 5

Select one of the following:

- POLI201 Introduction to Public Administration 3
- or**
- POLI241 Introduction to International Relations 4
- or**
- POLI334 Middle East Politics 3

Criminalistics

- CJUS444 Criminalistics 4
- BIOL131 General Biology: Cells 4
- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM332 Instrumental Analysis 4
- CHEM351 Introductory Biochemistry 4
- MATH112 Calculus Business/Life Science 4
- PHYS221 Principles of Physics I 4

Select one of the following:

- CJUS313 Crisis Intervention Deviant Behavior 3
- or**
- CJUS411 Police Operations 5

MCOLES

- CJUS197 Physical Fitness Public Safety 1
- CJUS197 Physical Fitness Public Safety 1
- CJUS201 Firearms Training 1
- CJUS301 Advanced Firearms 1
- CJUS411 Police Operations 5

- CJUS444 Criminalistics 4
- CJUS450 Skills Academy 2
- EMED189 Medical First Responder 3

A minimum of 24 credits of 300/400 level CJUS Coursework is required for graduation.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Early Childhood Education: Bachelor of Science

The bachelor in early childhood education prepares professionals to provide high quality education and care for children birth through age eight in a wide variety of settings. Graduates are qualified to work as teachers and directors in private early childhood programs; state-funded preschool programs, such as Great Start Readiness Preschool; and federally-funded HeadStart programs. Students develop their understanding of typically and atypically developing children through integrated coursework and field experience, as well as two semester-long practicums. The required minor provides the opportunity for students to explore a related field, adding to their knowledge and skills for working with young children and their parents, or expanding their expertise for employment opportunities.

Program Learning Outcomes:

Candidates demonstrate their content area knowledge in the design, implementation, and evaluation of experiences that result in developmental and learning outcomes for each child.

Candidates apply their knowledge and understanding of young children's typical and atypical developmental needs to create healthy, respectful, supportive, and challenging learning environments for each child.

Candidates demonstrate in-depth knowledge of systematic observations, documentation, and assessment strategies through the effective use of these techniques to promote positive outcomes for each child.

Candidates demonstrate understanding and value of the important and complex characteristics of children's families and communities in their development of respectful, reciprocal relationships and partnerships.

Candidates demonstrate professional dispositions throughout coursework, field experience, and practicums.

Candidates demonstrate professional identification with and leadership skills in the early childhood field through articulating and advocating for sound professional practices and public policies.

Degree Requirements

Departmental Requirements (54 credits)

- CHLD101 Introduction to Early Child Education 4
- CHLD103 Learning Environments for the Young Child 4
- CHLD150 Observation and Assessment 4
- CHLD210 Infants and Toddlers 4

- CHLD225 Emergent Literacy 3
- CHLD241 STEM Foundations for the Young Child 4
- CHLD242 Creativity & Humanities for the Young Child 4
- CHLD245 Early Childhood Curriculum 3
- CHLD260 Practicum I 4
- CHLD270 Administration of Early Childhood Programs 2
- CHLD310 Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- CHLD330 Philosophical Foundations of Early Childhood Education 2
- CHLD350 Early Childhood Facilities Management 2
- CHLD410 Practicum II 4
- CHLD440 Family and Community Partnerships 3
- CHLD495 Senior Project 4

Cognate Requirements (12 credits)

- EDUC101 Self as Learner 1
- BIOL105 Function of the Human Body 4
- EMED181 First Aid 1
- HLTH104 Nutrition for Early Childhood 3
- SOCY103 Cultural Diversity 3

Approved Minor (minimum 20 credits)

Free Electives (minimum 9 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Electrical Engineering: Bachelor of Science

The electrical engineering program, which is accredited by EAC of ABET, combines topics from science, math and engineering in order to study and develop solutions to electrical and computer problems. The program contains a strong laboratory emphasis with plenty of opportunities to work on real electrical systems. Some of the program highlights are:

- The teaching emphasis is on preparing you to solve real-world problems.
- You have three choices for fulfillment of your senior year experience. You may pursue opportunities in cooperative education, industry-based projects or research projects.
- You will study assembly language, circuit design, microcontroller hardware and software, digital electronics, and networks.
- Engineering courses begin in your freshman year.
- The program provides an excellent mix of theory and practical laboratory experiences.

Your Degree Options — You may choose to follow one of the following degree concentrations while studying electrical engineering at LSSU. They are: Robotics and Automation Concentration, Digital Systems Concentration and Sustainable Energy Concentration. The Robotics and Automation Concentration provides you with a strong background in robotics, machine vision, sensors, communications and automation. The Digital Systems Concentration will give you additional knowledge in digital design, digital signal processing and microcontroller systems. The

Sustainable Energy Concentration provides increased employment opportunities as demand for engineers with knowledge of the power industry and sustainable/renewable energies grows.

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

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Departmental Requirements:

Mathematics

- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH251 Calculus III 4
- MATH308 Probability and Mathematical Statistics 3
- MATH310 Differential Equations 3

Sciences

- CHEM115 General Chemistry I 5
- PHYS231 Applied Physics for Engineers and Scientists I 4
- PHYS232 Applied Physics for Engineers and Scientists II 4

Engineering

- EGEE125 Digital Fundamentals 4
- EGEE210 Circuit Analysis 4
- EGEE250 Microcontroller Fundamentals 4
- EGEE280 Introductory Signal Processing 4
- EGEE310 Network Analysis 4
- EGEE330 Electro-Mechanical Systems 4
- EGEE345 Fundamentals of Engineering Electromagnetics 3

- EGEE370 Electronic Devices 4
- EGEE475 Power Electronics 4
- EGNR101 Introduction to Engineering 2
- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGNR265 "C" Programming 3
- EGNR340 Advanced Numerical Methods for Engineers 1
- EGNR346 Probability and Statistics Lab for Engineers 1
- EGEM220 Statics 3
- EGRS460 Control Systems 4

Technical Electives (Minimum of 13 credits):

For students obtaining a concentration, the concentration electives must meet the requirements listed below. Otherwise, all 13 technical elective credits may be selected from the Technical Electives List.

- EGEE320 Digital Design (or higher level EGEE) 3
- EGEM320 Dynamics 3
- EGET310 Electronic Manufacturing Processes 4
- EGME225 Mechanics of Materials (or higher level EGME) 3
- EGRS365 Programmable Logic Controllers 3
- EGRS461 Design of Control Systems 4
- MATH215 Fund Concepts of Mathematics (or higher MATH) 3
- or any course from the listed concentrations

Robotics and Automation Concentration (C or better grade required in all courses)

- EGRS385 Robotics Engineering 4
- EGRS430 Systems Integration & Machine Vision 4
- EGRS435 Automated Manufacturing Systems 3

Digital Systems (C or better grade required in all courses)

- EGEE320 Digital Design 4
- EGEE355 Microcontroller Systems 4
- EGEE425 Digital Signal Processing 3

Sustainable Energy Concentration (C or better grade required in all courses)

- EGNR261 Energy Systems and Sustainability 3
- EGNR361 Energy Systems and Sustainability Lab 1
- EGEE411 Power Distribution and Transmission 3

Complete one course from:

- EGNR362 Vehicle Energy Systems 3
- EGME337 Thermodynamics 4

Senior Sequence (Complete one of the following sequences):

Industrial Project

- EGNR491 Engineering Design Project I 3
- EGNR495 Engineering Design Project II 3

Cooperative Project

- EGNR250 Cooperative Education 2
- EGNR450 Cooperative Education Project I 4
- EGNR451 Cooperative Education Project II 3
- EGNR491 Engineering Design Project I 3

Research Project

- EGNR260 Engineering Research Methods 2
- EGNR460 Engineering Research Project I 4
- EGNR461 Engineering Research Project II 2

32 credits from Mathematics (including EGNR340) and Natural Sciences is required.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Electrical Engineering Technology: Bachelor of Science

LSSU's Electrical Engineering Technology (EET) program integrates knowledge from areas of study such as science, math, computers, electrical engineering, management and economics in order to prepare you for an engineering technology career with the potential for growth into management. The EET program includes topics such as C programming, robotics, programmable logic controllers (PLCs), digital system design, embedded microprocessor systems, and circuit board layout and population. Most technical classes in the curriculum include a laboratory along with the lecture.

Students pursuing the BS degree in EET have the option to minor in Robotics Technology. LSSU is one of a few universities in the U.S. to offer an extensive Robotics Technology minor as part of the BS degree in EET and is home to one of the best robotics educational facilities in North America. The minor in Robotics Technology will be indicated on your transcripts.

Some of the program highlights are:

- The program provides an excellent mix of theory and practical laboratory experiences, preparing you to solve real-world problems.
- Engineering courses begin in the freshman year.
- Technical electives may be selected to obtain a minor in Robotics Technology.
- Less mathematics than the Electrical Engineering program.

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

Additional Degree Information

- *Option in:* General
- *Minor:* Robotics Technology

Program Learning Outcomes:

Apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems

appropriate to the discipline

Design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline

Apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature

Conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes

Function effectively as a member as well as a leader on technical teams

Degree Requirements

Departmental Requirements

- CHEM108 Applied Chemistry 3
- CHEM109 Applied Chemistry Lab 1
- ECON302 Managerial Economics 4
- EGEE125 Digital Fundamentals (C or better required) 4
- EGEE250 Microcontroller Fundamentals 4
- EGEE320 Digital Design 4
- EGEE355 Microcontroller Systems 4
- EGET110 Applied Electricity (C or better required) 4
- EGET175 Applied Electronics (C or better required) 4
- EGET310 Electronic Manufacturing Processes 4
- EGME141 Solid Modeling 3
- EGNR101 Introduction to Engineering 2
- EGNR140 Linear Algebra & Numerical Methods for Engineers 2
- EGNR245 Calculus Applications for Technology 3
- EGNR265 C Programming 3
- EGNR310 Advanced Quality Engineering 3
- EGRS365 Programmable Logic Controllers 3
- EGRS380 Robotics Technology 2
- EGRS381 Robotics Technology Lab 1
- MATH111 College Algebra (C or better required) 3
- MATH112 Calculus for Business and Life Science 4
- MATH131 College Trigonometry 3
- MATH207 Principles of Statistical Methods 3
- MGMT375 Introduction to Supply Chain Management 3
- PHYS221 Elements of Physics I (C or better required) 4
- PHYS222 Elements of Physics II 4
- Technical Elective 2

Select one of the following Senior Sequence options to complete the Electrical Engineering Technology Degree:

Industrial Project

- EGNR491 Engineering Design Project I 3
- EGNR495 Engineering Design Project II 3

or

Cooperative Project

- EGNR250 Cooperative Education 2
- EGNR450 Cooperative Education Project I 2
- EGNR451 Cooperative Education Project II 2
- EGNR491 Engineering Design Project I 3

Technical Electives 10

- CSCI163 Troubleshooting and Repair of Personal Computers 3
- EGEE305 Analog & Digital Electronics 3
- EGEE365 Vehicle Instrumentation 4
- EGME141 Solid Modeling 3
- EGME240 Assembly Modeling and GD&T 3
- EGME275 Engineering Materials 3
- EGME276 Strength of Materials Lab 1
- EGME338 Fluid Mechanics 2
- EGME310 Vehicle Development and Testing 2
- EGMT225 Statics and Strength of Materials 4
- EGMT310 CNC Manufacturing Processes 4
- EGMT332 Thermodynamics and Heat Transfer for Technologists 4
- EGRS215 Robotics Technology 2
- EGRS430 Systems Integration and Machine Vision 4
- EGRS480 Control Systems & Automation 3
- EGRS481 Control Systems & Automation Lab 1
- MATH215 Fundamental Concepts of Math or higher 3

Students wishing to complete the Robotics Technology minor should take the following as technical or free electives:

- EGRS430 Systems Integration and Machine Vision 4
- EGRS480 Control Systems & Automation 3
- EGRS481 Control Systems & Automation Lab 1

Free Electives 3

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Elementary Education: Bachelor of Arts/Science

The Elementary Education program is highlighted by in-depth study in a subject major, subject concentration, or student-focused concentration, extended field experience in elementary school settings; and focused development of the knowledge and skills critical for effective teachers.

Elementary-level teacher certification in Michigan permits individuals to teach in self-contained classrooms at grade K - 8, and in all subjects at grades K - 5. Individuals may also qualify to teach the subjects of their academic major or minors in grades 6 - 8.

Students begin their studies with a focus on general education requirements, and an academic major or specific concentration. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major or concentration, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification Elementary Education tests must be passed prior to beginning student teaching.

Note: Candidates who pass the Michigan Test for Teacher Certification in their major or concentration meet the requirements of the No Child Left Behind Act and are considered "highly qualified" for the subject areas of the endorsements shown on their Michigan teaching certificates.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Elementary Education Bachelor of Arts/Sciences are:

Teaching Concentration - Students may complete one of the following options:

- **Academic Concentration:** Major in either Language Arts or Mathematics (see requirements in this catalog for these teaching majors)

or

- **Language Arts and Mathematics Concentration** (see requirements listed below)

or

- **Early Childhood Education Concentration** (see requirements listed below)

Language Arts and Mathematics Concentration (25 credits)

- ENGL221 Introduction to Creative Writing 3
- ENGL231 American Literature I 3
- ENGL232 American Literature II 3
- ENGL320 Responding to Writing 3
- THEA112 Acting for Beginners 3
- MATH215 Fundamental Concepts of Mathematics 3
- MATH321 History of Mathematics 3

- MATH112 Calculus for Business & Life Sciences 4
or
- MATH151 Calculus I 4

Early Childhood Education Concentration (28 credits)

- CHLD150 Observation and Assessment 4
- CHLD210 Infants and Toddlers 4
- CHLD225 Emergent Literacy 3
- CHLD245 Early Childhood Curriculum 3
- CHLD270 Administration of Early Childhood Programs 2
- CHLD310 Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- CHLD440 Family and Community Partnerships 3
- CHLD480 Directed Teaching Seminar 1
- CHLD492 Directed Teaching : Early Childhood 5

Elementary Planned Program (49 credits)

- MATH103 Number Systems & Problem Solving 4
- MATH104 Geometry & Measurement 4
- MATH207 Principles of Statistical Methods 3
- BIOL104 Survey of General Biology 4
- NSCI101 Great Lakes Region: Chem, Phy, and other Laws of Nature 4
- NSCI102 Great Lakes Region: Geology and Resources 4
- POLI110 American Government 4
- GEOG201 World Regional Geography 4
- HIST131 United States History I 4
- HIST321 History of Michigan 2
- ENGL180 Introduction to Literary Studies 3
- ENGL222 English Grammar & Language in Context 3
- ENGL335 Children's Literature in the Classroom 3
- CHLD225 Emergent Literacy 3

Professional Education Sequence (48 credits)

- EDUC101 Self as Learner 1
- EDUC250 Student Diversity & Schools 4
- EDUC301 Learning Theory and Teaching Practice 3
- EDUC330 Reading in the Elementary Classroom 3
- EDUC350 Integrating Technology into 21st Learning Environments 3
- EDSE301 Introduction to Special Education 3
- EDUC410 Corrective Reading in the Classroom 3
- EDUC411 Elementary Language Arts and Methods Across the Curriculum 2
- EDUC415 General Instructional Methods 2
- EDUC420 Math Methods for Elementary Teachers 2
- EDUC421 Science Methods for Elementary Teachers 2
- EDUC422 Social Studies Methods for Elementary Teachers 2
- EDUC423 Arts Methods for Classroom Teachers 2
- EDUC424 Health/Physical Education Methods for Classroom Teachers 2
- EDUC460 Classroom Management 2
- EDUC480 Directed Teaching Seminar 2

- EDUC492 Directed Teaching 10

Formal admission to the Elementary Education program, qualification for student teaching, and successful completion of the program requires:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher.
- Completion of all required courses in the teaching major or concentration with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the elementary planned program with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Elementary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Elementary Education: Special Education - Learning Disabilities: Bachelor of Science

The Special Education - Learning Disabilities program expands the basic elementary education program to prepare teachers to work with students with learning disabilities from kindergarten through grade 12. Program features include extended field experience in regular and special education settings, and focused development of the knowledge and skills critical for effective teachers.

Graduates are prepared for elementary-level teacher certification in Michigan, which permits individuals to teach in self-contained classrooms at grades K-8, and in all subjects at grade K-5, as well as a Learning Disabilities endorsement for grades K-12. Individuals may also qualify to teach the subject of an optional academic minor in grades 6-8.

Students begin their studies with a focus on general education requirements and elementary planned program coursework. If they opt for an academic minor this coursework also begins in year one. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Special education and upper-level professional education coursework, along with the completion of the elementary planned program and optional minor, are the

focuses for the junior and senior years. Students in the special education program complete two semesters of student teaching, one in a regular elementary education setting and one in a special education setting. These experiences are normally in the fifth year of the program, depending on the individual student's progress through the program. Generally, student teaching will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification Elementary Education and Learning Disabilities tests must be passed prior to beginning student teaching.

Note: Candidates who complete an optional minor and pass the Michigan Test for Teacher Certification subject test for that minor meet the requirements of the No Child Left Behind Act and are considered "highly qualified" for the subject area of the endorsement shown on their Michigan teaching certificates.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Elementary Education: Special Education - Learning Disabilities: Bachelor of Science program are:

Special Education (32 credits)

- EDSE301 Introduction to Special Education 3
- EDSE302 Communication and Community 3
- EDSE320 Introduction to Learning Disabilities 4
- EDSE401 Issues and Trends Impacting Learning Disabilities & Special Ed 3
- EDSE403 Assessment and Diagnosis 3
- EDSE404 Instruction and Technology for Learning Disabilities-Preschool to Empl 4
- EDSE480 Student Teaching Seminar: Special Education 1
- EDSE492 Internship/Supervised Student Teaching: Learning Disabilities 8
- PSYC301 Exceptional Child and Adolescent 3

Elementary Planned Program (49 credits)

- MATH103 Number Systems & Problem Solving 4
- MATH104 Geometry & Measurement 4
- MATH207 Principles of Statistical Methods 3
- BIOL104 Survey of General Biology 4
- NSCI101 Great Lakes Region: Chem, Phy, and other Laws of Nature 4
- NSCI102 Great Lakes Region: Geology and Resources 4
- POLI110 Introduction to American Government and Politics 4
- GEOG201 World Regional Geography 4

- HIST131 United States History I 4
- HIST321 History of Michigan 2
- ENGL180 Introduction Literary Studies 3
- ENGL222 English Grammar & Language in Context 3
- ENGL335 Children's Literature 3
- CHLD225 Emergent Literacy 3

Academic Minor (Optional): Students may complete a teaching minor in either Language Arts or Mathematics (see the requirements in this catalog for these teaching minors).

Professional Education Sequence (45 credits)

- EDUC101 Self as Learner 1
- EDUC250 Student Diversity & Schools 4
- EDUC301 Learning Theory and Teaching Practice 3
- EDUC330 Reading in the Elementary Classroom 3
- EDUC350 Integrating Technology 3
- EDUC410 Corrective Reading in the Classroom 3
- EDUC411 Elementary Language Arts and Methods Across the Curriculum 2
- EDUC415 General Instructional Methods 2
- EDUC420 Math Methods for Elementary Teachers 2
- EDUC421 Science Methods for Elementary Teachers 2
- EDUC422 Social Studies Methods for Elementary Teachers 2
- EDUC423 Arts Methods for Classroom Teachers 2
- EDUC424 Health/Physical Education Methods for Classroom Teachers 2
- EDUC460 Classroom Management 2
- EDUC480 Directed Teaching Seminar 2
- EDUC492 Directed Teaching 10

Formal admission to the program, qualification for student teaching, and successful completion of the program requires:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher.
- Completion of all required courses in the education cognates and teaching minor with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the elementary planned program with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a gpa of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Elementary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is

also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

English Language and Literature: Bachelor of Arts

The English Language and Literature - Secondary Teaching program prepares graduates for secondary-level teacher certification in Michigan, which permits individuals to teach English in grades 6-12. See Secondary Education for additional information. The major is housed in the Department of English.

Featuring small classes, close reading of great works of literature, many opportunities for writing and research, and supervision by faculty who know their students, LSSU English programs emphasize the human letters and language study, and give students many opportunities to excel at what they love.

English Education students have ample opportunities to help coordinate local literary events and festivals as part of their coursework. They are also encouraged to join the English Club, work as editors on student and professional journals, and enter the Stellanova Osborn Poetry Contest and the LSSU Short Story Contest.

In this program, students will complete a teaching major in English Language and Literature and additional professional education requirements that will prepare them for a career in teaching at the secondary level.

Program Learning Outcomes:

Instructional Choices - Candidates will make instructional choices that consider the integrated nature of the English language arts, the relationship between culture and language, and the principles of rhetoric and communication.

Grammar and Language - Candidates will value both prescriptive and descriptive grammars and conventions of English and appreciate the dynamic nature of English as a language shaped by historical, social, and cultural influences.

Context - Candidates will consider the broad progression of literary history and critical movements across time and space – including North American literature, classic and world literature, YA literature, visual texts, and critical theory – and place texts in context.

Text Analysis - Candidates will synthesize knowledge of genre, craft, literary history, and criticism to analyze texts.

Literacy and Scholarship Practices - Candidates will value, apply, and recommend effective literacy and scholarship practices.

Degree Requirements

English Requirements (34 credits)

- ENGL180 Introduction to Literary Studies 3
- ENGL221 Introduction to Creative Writing 3
- ENGL222 English Grammar and Language in Context 3
- ENGL231 American Literature I 3
- ENGL232 American Literature II 3
- ENGL320 Responding to Writing 3
- ENGL336 Young Adult Literature and Culture 3
- ENGL345 Studies in Classic Texts 3
- ENGL435 Studies in Visual Texts 3
- ENGL380 History of Literary Criticism 3
- ENGL490 Senior Thesis 2

- ENGL499 Senior Thesis 2

English and Literacy Education Methods (6 credits):

- EDUC440 Reading in the Content Area 3
- EDUC441 Secondary English Methods 3
or
- EDUC451 Ind Study English Methods 3

Professional Education Sequence and Education Cognates- see [Secondary Education](#).

Approved Teaching Minor Recommended - see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; or FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Environmental Science: Bachelor of Science

Environmental Science is the study of human interaction with the environment. by seeking sustainable solutions for environmental problems such as water pollution, energy and climate, and ecosystem integrity, environmental scientists help ensure a safe, healthful environment for all living things.

Graduates with a bachelor of science in Environmental Science work in many disciplines, government agencies, and industries. Environmental Science graduates have a wide range of career opportunities including areas such as sustainability, field sampling, hydrology, environmental health, pollution control, environmental toxicology, climate science, ecology, and water quality analysis. while many graduates enter the workforce with a bachelors degree, some students proceed on to graduate school in natural sciences, policy, law, or sustainability studies. Internships in Environmental Science are encouraged where students can gain valuable real-world experience while gaining college credit - a faculty advisor can assist students in identifying internship opportunities locally, regionally, and internationally. In addition to their course work, all students participate in an applied research project in close collaboration with a faculty member to address a meaningful environmental-based problem. These projects, through the excellent preparation they provide our students, are often cited as important factors in successful job searches and entry into graduate programs.

Program Learning Outcomes:

Knowledge & Skills – The Environmental Science graduate will demonstrate 1. Factual and theoretical knowledge of chemistry, biology, earth, and environmental science 2. Cross-disciplinary Field & laboratory knowledge and skills 3. Applied Analytical Skills 4. Communication skills 5. Information retrieval skills 6. safe laboratory practices.

Employability - The Environmental Science graduate will demonstrate readiness for employment in business or industry as an environmental scientist, biological

technician, GIS Analyst, physical science technician, pollution control specialist, laboratory chemist environmental specialist or environmental field technician.

Readiness for Graduate Study – The Environmental Science graduate will demonstrate readiness for graduate study in environmental science, environmental chemistry, environmental toxicology, Environmental management, environmental policy, biochemistry, or other related fields.

Technical Skills - The Environmental Science graduate will demonstrate proficiency and familiarity with combination of chemical instrumentation and modern computer software for environmental and chemical analysis and for environmental research.

Degree Requirements

Bachelor of Science Environmental Science

Environmental Science Core Requirements (87-89 credits)

- NSCI103 Environmental Science 3
- EVRN131 Introduction to GIS/GPS 3
- EVRN211 Field Data Methods 1
- EVRN225 Intermediate GIS 3
- EVRN311 Environmental Law 3
- EVRN315 Human Impacts on Environment 4
- EVRN317 Environmental Health Apps 4
- EVRN325 Geospatial Analysis 3
- EVRN341 Fate & Transport in the Environment 4
- EVRN389 Environmental Research Methods 3
- EVRN435 Environmental Systems 3
- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL337 General Ecology 3
- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- GEOL121 Physical Geology 4
- GEOL122 Historical Geology 4
- NRES199 Freshman Seminar 1
- NRES230 Introduction to Soil Science 4
- NRES299 Sophomore Seminar 1
- NRES399 Research Project Design 1
- NRES499 Senior Capstone 1

Complete one course from the following two:

- EVRN395 Senior Project 2
- NRES497 Experiential Learning Project 3

Complete one course from the following two:

- NSCI116 Introduction to Oceanography 4
- GEOG108 Physical Geography: Meteorology & Climatology 4

Complete one course from the following two:

- MATH112 Calculus for Business and Life Sciences 4
- MATH151 Calculus I 4

Complete one course from the following three:

- BUSN211 Business Statistics 3
- MATH207 Principles of Statistical Methods 3
- BIOL280 Biostatistics 3

Complete one course from the following three:

- GEOL334 Hydrologic Systems: Surface and Groundwater 4
- NRES286 Principles of Watersheds 3
- NRES345 Limnology

Complete requirements for at least one of the following approved Minors (other minors may be substituted with advisor approval). Note: Courses taken toward completion of the program/general education requirements can be applied toward this requirement:

- Biology
- Biochemistry
- Chemistry
- Environmental Policy
- Geographic Information Science (GIS)
- Geology
- International Studies
- Marine Freshwater Sciences
- Mathematics
- Natural Resources
- Outdoor Leadership
- Political Science
- Pre-Law
- Public Health
- Sociology
- Society & Environment
- Sustainability

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Finance and Economics: Bachelor of Science

This degree requires successful completion of a minimum of 124 semester credits as prescribed on the following page. The study of finance and economics develops the capacity for analytical reasoning and critical thinking, the most important decision making tools in business, government, education, and in your personal life.

Organizations need planners and problem-solvers, people who are logical thinkers. Economists and financiers learn to develop accurate information upon which to make decisions from the vast quantities of complex and often conflicting data generated in today's global economy. Employers hire these professionals because of their abilities for careful analysis, planning and decision making.

Graduate, Professional and Continuing Education

This degree program is an excellent preparation for graduate and professional education in such fields as finance, economics, accounting, business administration and law. Graduates may seek professional certification in related professions such as Certified Financial Planner (CFP), Chartered Financial Analyst (CFA), Chartered Financial Consultant (ChFC), Chartered Life Underwriter (CLU) and Certified Management Accountant (CMA).

Program Learning Outcomes:

Analytical Skills - Apply analytical skills.

Financial Statement Analysis - Memorize and apply key financial ratios.

Terminal Value - List two methods used to estimate Terminal Value and explain why it's important.

Derivatives - Explain how to use options to reduce or increase risk.

Advanced Understanding of Macroeconomics and Microeconomics - Apply advanced concepts from macroeconomics and microeconomics to answer complex problems and draw conclusions.

Best Practices - Calculate the Weighted Average Cost of Capital using best practices.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- BUSN121 Introduction to Business 3
- BUSN211 Business Statistics 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
- BUSN403 Business, Government & Society 3
- BUSN466 Business Policy 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- FINC341 Managerial Finance 4
- MGMT280 Intro Management Information Systems 3
- MGMT360 Management Concepts & Apps 3
- MGMT371 Operations/Business Analytics 3
- MRKT281 Marketing Principles & Strategy 3

Major Requirements (Minimum 34 credits)

- BUSN101 Freshman Seminar 1
- MATH111 College Algebra 3
- MATH112 Calculus Business/Life Science 4

FINC 400-Level Courses. Choose two from the following:

- FINC443 Insurance 4
- FINC446 Financial Analysis and Policy 4
- FINC448 Investment Strategy 4

Economics Option (18 credits)

- ECON407 Introductory Econometrics 3
- ECON300-400 Level Electives (3 Courses) 9
- Economics, Finance or Mathematics Electives 6

Finance Option (18 credits)

- FINC** 400-level Elective 4
- Finance, Economics or Accounting Electives 14

***FINC 400-level courses include FINC446, Financial Analysis & Policy; FINC448, Investment Strategy; and FINC443, Insurance. Two courses from this group must be completed for all options; all three courses must be completed for the finance option.*

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Fire Science - Generalist: Bachelor of Science

This emphasis is designed for students preparing for professional fire service positions in public and private sectors. The emphasis is designed to provide the student with a working knowledge of the many different areas of the fire service, giving the students the ability to function in fire departments and participate in fire prevention and investigation divisions. Students in this emphasis will complete the requirements for Firefighter I and II state certifications established by the Michigan Firefighters Training Council.

Program Learning Outcomes:

USE OF EVIDENCE (UE) - Graduates of the Fire Science programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS) - Graduates of the Fire Science programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR) - Graduates of the Fire Science programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (54-55 credits)

- CJUS341 Fire Cause & Arson Investigation 3
- FIRE101 Introduction to Fire Science 3
- FIRE111 Hazardous Materials 3
- FIRE197 Physical Fitness for Public Safety 1
- FIRE201 Fire Protection Construction Concepts 3

- FIRE204 Fire Protection Hydraulics & Pumps 3
- FIRE206 Fire Protection Systems Equipment and Industrial Fire Protection 3
- FIRE211 Tactics & Strategy 3
- FIRE219 Firefighter Essentials 3
- FIRE220 Fire Science Certification 4
- FIRE301 Code Enforcement Inspection and Fire Prevention 3
- FIRE309 Fire-Related Human Behavior 3
- FIRE312 Hazardous Materials Management 4
- FIRE315 Company Level Supervision and Management 3
- FIRE401 Senior Seminar 3
- FIRE402 Fire Service and the Law 3
- FIRE403 Fire Science Internship 3

Statistics: Choose one of the following:

- CJUS345 Statistics and Design for Public Safety 4
- MATH207 Principles of Statistical Methods 3
- PSYC210 Statistics 3
- SOCY302 Statistics for Social Science 4

Minor or Paramedic License (20 credits) Students may complete an approved minor. The minor must be an approved minor other than Fire Science.

Electives (9 - 14 credits)

Note: A minimum of 24 credits of 300/400 level coursework is required for graduation.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Fire Science - Generalist Non Certification: Bachelor of Science

This emphasis is designed for long-distance students who currently possess firefighting certifications; it also serves those students who do not desire, or have the physical ability, to enter the fire service as active firefighters. This emphasis is designed for students who seek promotions or desire a professional position in the private fire service sector, and provides students a wide knowledge base of the fire service. Students in this emphasis will have the education necessary to work in preventive, investigative, and educational areas of the fire service.

Program Learning Outcomes:

USE OF EVIDENCE (UE) - Graduates of the Fire Science programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS) - Graduates of the Fire Science programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR) - Graduates of the Fire Science programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical

applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (45-46 credits)

- FIRE101 Introduction to Fire Science 3
- FIRE204 Fire Protection Hydraulics and Pumps 3
- FIRE206 Fire Protection Systems Equipment and Industrial Fire Prevention 3
- FIRE301 Code Enforcement, Inspection and Fire Prevention 3
- FIRE315 Company Level Supervision and Management 3
- FIRE401 Senior Seminar 3

Statistics: Choose one of the following:

- CJUS345 Statistics and Design for Public Safety 4
- MATH207 Principles of Statistical Methods 3
- PSYC210 Statistics 3
- SOCY302 Statistics for Social Science 4

Electives - Select at least 30 additional credits of Fire Science and Criminal Justice Electives from:

- CJUS103 Introduction to Terrorism and Homeland Security 3
- CJUS203 Cyberterrorism 3
- CJUS204 Domestic and International Terrorism 3
- CJUS303 Critical Infrastructure Protection 3
- CJUS321 Ethical Issues in Public Safety 3
- CJUS325 / FIRE325 Homeland Security and Emergency Services 3
- CJUS341 Fire Cause and Arson Investigation 3
- FIRE111 Hazardous Materials 3
- FIRE201 Fire Protection Construction Concepts 3
- FIRE211 Tactics and Strategy 3
- FIRE300 Special Topics 3-6
- FIRE309 Fire-Related Human Behavior 3
- FIRE312 Hazardous Materials Management 4
- FIRE400 Special Topics 3-6
- FIRE402 Fire Service and the Law 3
- FIRE403 Fire Science Internship 3

Electives to reach 124 credits.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Fisheries and Wildlife Management: Bachelor of Science

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.

Program Learning Outcomes:

Scientific Literature - Students in the Fisheries and Wildlife Management program will thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Scientific Investigation - Students in the Fisheries and Wildlife Management program will design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Communication - Students in the Fisheries and Wildlife Management program will effectively communicate the results or outcomes of their scientific investigation in multiple formats.

External Validity - Graduates of the Fisheries and Wildlife Management concentrations will be prepared to meet certification requirements of the American Fisheries Society or The Wildlife Society.

Professionalism - Graduates of the Fisheries and Wildlife Management program will have developed and demonstrate a sense of professionalism/work ethic.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Fisheries and Wildlife Management](#)
- [Bachelor of Science Fisheries and Wildlife Management, Conservation Officer Concentration](#)
- [Bachelor of Science Fisheries and Wildlife Management, Fisheries Management Concentration](#)
- [Bachelor of Science Fisheries and Wildlife Management, Wildlife Management Concentration](#)

Degree Requirements

Bachelor of Science Fisheries and Wildlife Management

Departmental Requirements

- BIOL131 General Biology I: Cells 4
- BIOL132 General Biology II: Organisms 4
- NRES199 Freshman Seminar 1
- BIOL202 Plant Sciences I: Identification and Diversity 3
- **or**
- NRES284 Forestry 4
- NRES203 Fundamentals of Natural Resources 3
- BIOL220 Genetics 4
- BIOL243 Vertebrate Anatomy 4
- **or**
- BIOL330 Animal Physiology 4
- NRES250 Quantitative Biology 3
- BIOL280 Biometrics 3
- NRES299 Sophomore Seminar 1
- NRES310 Ichthyology 3
- NRES311 Mammology 3
- NRES312 Ornithology 3
- NRES333 Fish Ecology 3
- BIOL337 General Ecology 3
- NRES339 Wildlife Ecology 3
- NRES345 Limnology 3

- NRES399 Research Project Design 1
- NRES432 Fisheries Management 3
- NRES439 Wildlife Management 3
- NRES495 Senior Project 2
- NRES499 Senior Capstone 1
- NRES or BIOL Electives 3

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM208 Survey of Organic Chemistry with Biological Apps 4
or
- PHYS221 Principles of Physics I 4
- EVRN131 Introduction to GIS and GPS 2
- MATH111 College Algebra 3
- MATH112 Calculus for Business & Life Sciences 4

Free Electives - 10-11 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Conservation Officer Concentration

Departmental Requirements

- BIOL131 General Biology I: Cells 4
- BIOL132 General Biology II: Organisms 4
- NRES199 Freshman Seminar 1
- BIOL202 Plant Sciences I: Identification and Diversity 3
or
- NRES284 Principles of Forestry 4
- NRES203 Fundamentals of Natural Resources 3
- BIOL220 Genetics 4
- NRES250 Quantitative Biology 3
- BIOL280 Biometrics 3
- NRES299 Sophomore Seminar 1
- NRES310 Ichthyology 3
- NRES311 Mammalogy 3
or
- NRES312 Ornithology 3
- NRES333 Fish Ecology 3
- BIOL337 General Ecology 3
- NRES339 Wildlife Ecology 3
- NRES345 Limnology 3
- NRES399 Research Project Design 1
- NRES432 Fisheries Management 3
- NRES439 Wildlife Management 3

- NRES495 Senior Project 2
- NRES499 Senior Capstone 1

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- EVRN131 Introduction to GIS and GPS 2
- MATH111 College Algebra 3
- MATH112 Calculus for Business & Life Sciences 4

Conservation Officer Concentration Requirements (18 - 21 credits)

- CJUS101 Introduction Criminal Justice 3
- CJUS102 Police Process 3
- CJUS197 Physical Fitness for Public Safety 1
- CJUS201 Firearms Training 1
- CJUS313 Crisis Intervention 3
- or**
- CJUS321 Ethical Issues 3
- PSYC101 Introduction to Psychology 4
- SOCY101 Introduction to Sociology 4
- or**
- SOCY102 Social Problems 4
- COMM225 Interpersonal Communication 3

Free Electives to total 125 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Fisheries Management Concentration

Departmental Requirements

- BIOL131 General Biology I: Cells 4
- BIOL132 General Biology II: Organisms 4
- NRES199 Freshman Seminar 1
- NRES203 Fundamentals of Natural Resources 3
- BIOL220 Genetics 4
- BIOL243 Vertebrate Anatomy 4
- or**
- BIOL330 Animal Physiology 4
- NRES250 Quantitative Biology 3
- BIOL280 Biometrics 3
- NRES299 Sophomore Seminar 1
- NRES310 Ichthyology 3
- NRES333 Fish Ecology 3
- BIOL337 General Ecology 3

- NRES345 Limnology 3
- NRES372 Freshwater Fish Culture 3
- NRES399 Research Project Design 1
- NRES432 Fisheries Management 3
- NRES475 Aquatic Entomology 3
- NRES495 Senior Project 2
- NRES499 Senior Capstone 1
- NRES or BIOL Electives 8

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM208 Survey of Organic Chemistry with Biological Apps 4
or
- PHYS221 Principles of Physics I 4
- EVRN131 Introduction to GIS and GPS 2
- MATH111 College Algebra 3
- MATH112 Calculus for Business & Life Sciences 4

Human Dimensions - 3 credits from:

- ECON307 Environmental Economics 3
- EVRN311 Environmental Law 3
- NRES304 The Human Environment 3
- POLI342 International Environmental Policy 3

Free Electives - 12 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Wildlife Management Concentration

Departmental Requirements

- BIOL131 General Biology I: Cells 4
- BIOL132 General Biology II: Organisms 4
- NRES199 Freshman Seminar 1
- BIOL202 Plant Sciences I: Identification and Diversity 3
- NRES203 Fundamentals of Natural Resources 3
- BIOL220 Genetics 4
- BIOL243 Vertebrate Anatomy 4
- **or**
- BIOL330 Animal Physiology 4
- NRES250 Quantitative Biology 3
- BIOL280 Biometrics 3
- NRES284 Principles of Forestry 4
- NRES299 Sophomore Seminar 1

- NRES311 Mammology 3
- NRES312 Ornithology 3
- BIOL337 General Ecology 3
- NRES339 Wildlife Ecology 3
- NRES399 Research Project Design 1
- NRES439 Wildlife Management 3
- NRES495 Senior Project 2
- NRES499 Senior Capstone 1
- NRES or BIOL Electives 3

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- EVRN131 Introduction to GIS and GPS 2
- MATH111 College Algebra 3
- MATH112 Calculus for Business & Life Sciences 4

Physical Science* - 3-4 credits from:

- NRES230 Introduction to Soil Science 4
- NRES286 Principles of Watersheds 3
- PHYS221 Principles of Physics I 4

Policy/Admin/Law - 9 credits from:

- NRES287 Conservation Biology 3
- ECON307 Environmental Economics 3
- EVRN311 Environmental Law 3
- NRES304 The Human Environment 3
- POLI342 International Environmental Policy 3

Free Electives - 10 credits

*Students considering graduate school should select PHYS221

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Forensic Chemistry: Bachelor of Science

The B.S. in Forensic Chemistry combines elements of criminal justice and biology with a strong chemistry program. The forensic chemist analyzes and interprets materials collected at crime scenes, accidents, and at sites of terrorist activities.

The degree is offered in response to strong student, state and local government demand for an undergraduate academic program to prepare students for careers in forensic chemistry. According to the U.S. Department of Labor Bureau of Labor Statistics 2010 Occupational Outlook Handbook, forensic science technicians will grow much faster than average.

Graduates with a bachelor of science in forensic chemistry work in forensic laboratories for federal, state, or local government agencies or in some cases, work for private investigative laboratories. Some graduates may also go on to pursue a

graduate degree.

The Chemistry Program at Lake Superior State University is now accredited by the American Chemical Society (ACS). According to the 2011 National Occupational Employment and Wage Estimator, more people are employed as chemists and chemical technicians than in any other job classification in the life and physical science occupations (<http://stats.bls.gov>). With many free electives and a common general education core, a chemistry degree can also be used in combination with other majors or minors such as pre-professional (medicine, pharmacy, veterinary, law, etc.), engineering, business, biology, and many more to match student interest and career plans.

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

The LSSU chemistry program has been approved by the American Chemical Society, and may provide a certified degree in Chemistry, Environmental Chemistry, Forensic Chemistry, and Pre-Professional Chemistry degrees if a student chooses this track. Graduates completing the prescribed requirements are awarded an ACS certificate signifying their completion of the approved degree and can qualify for membership in the Society upon graduation.

American Chemical Society
Committee on Professional Training
155 Sixteenth Street, N.W.,
Washington, D.C. 20036

Program Learning Outcomes:

Demonstrate proficiency in the following chemistry subdisciplines: analytical chemistry, biochemistry, organic chemistry, and physical chemistry.

Demonstrate readiness for employment as a laboratory forensic chemist, crime scene investigator or law enforcement laboratory chemist OR graduate or professional study.

With the guidance of a faculty mentor, develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge in the field of Forensic Chemistry.

Degree Requirements

Major Requirements (55 credits)

Chemistry (39 credits)

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM332 Instrumental Analysis 4
- CHEM351 Introductory Biochemistry 4
- CHEM353 Introductory Toxicology 3

- CHEM361 Physical Chemistry I 4
- CHEM363 Physical Chemistry Lab 1
- CHEM395 Junior Seminar 1
- CHEM445 / CJUS445 Forensic Science 4
- CHEM452 Biochemistry II 4
- **or**
- CHEM310 Applied Spectroscopy 4
- CHEM499 Senior Seminar 1

For American Chemical Society certified degree, additionally required (total lab hours must be at least 400 hrs). See Department Chair for special rules regarding ACS certification:

- CHEM261 Inorganic Chemistry 4
- CHEM326 Organic Chemistry II 4
- CHEM495 Senior Project 2
- MATH152 Calculus II 4
- **or**
- EGNR140 Linear Algebra and Numeral Apps Engineers 2
- EGNR245 Calculus Applications for Technology 3

Criminal Justice (16 credits)

- CJUS101 Introduction to Criminal Justice 3
- CJUS243 Investigation 3
- CJUS319 Substantive Law 3
- CJUS409 Procedural Law 3
- CJUS444 Criminalistics 4

Support Courses (47 credits)

- USEM101 University Seminar I: Foundation Success 1
- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- MATH111 College Algebra 3
- MATH112 Calculus for Business & Life Sciences 4
- MATH207 Principles of Statistical Methods 3
- **or**
- BUSN211 Business Statistics 3
- NSCI110 Introduction to Forensics 4
- Two semesters of College Physics with laboratory (8 cr min)
- POLI110 Introduction to American Government and Politics 4
- PSYC101 Introduction to Psychology 4
- PSYC259 Abnormal Psychology 3
- SOCY103 Cultural Diversity 3
- SOCY214 Criminology 3

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

General Studies: Bachelor of Arts/Science

Through the General Studies BA/BS, students choose two minors, two concentrations or one minor and one concentration from separate areas of interest. Working closely with the general studies coordinator and advisors in both areas of study, the student designs a unique degree which emphasizes their individual strengths in diverse fields of study. This synthesis of knowledge from more than one area of study enables the student to become an effective contributor in their community and a world in which careers are increasingly complex and varied in their requirements. The value of this interdisciplinary model can be seen most concretely in the student's capstone project (INTD 490) in which the student must merge what he or she has learned in both areas of study into a practical and academically valuable research project.

Program Learning Outcomes:

Formal Communication: Students will develop and clearly express complex ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will identify the need for, gather, and accurately process the appropriate type, quality, and quantity of evidence to answer a complex question or solve a complex problem within the content of their chosen studies.

Analysis and Synthesis: Students will organize and synthesize evidence, ideas, or works of imagination to answer an open-ended question, draw a conclusion, achieve a goal, or create a substantial work of art as appropriate to their chosen studies.

Professional Responsibility: Students will demonstrate the ability to apply professional ethics and intercultural competence when answering a question, solving a problem, or achieving a goal related to their chosen studies.

Degree Requirements

Major Requirements (60 credits)

Complete two academic minors, or two academic concentrations, or one of each. No more than two (2) courses may be counted in common to meet the minimum requirements for minors, concentrations, or between minor and concentration.

Minors: Successfully complete academic minor(s) totaling at least 30 credits each. At least 10 credits in each minor must be LSSU credits. Complete additional courses in the same course prefixes used in the minor in cases where the minor does not meet the minimum of 30 credits.

Concentrations: Complete at least 30 credits in defined academic concentrations. Concentrations must include at least 10 credits in LSSU credits, and at least 12 credits must be at the 300/400 level.

Academic Concentrations:

- Behavioral Sciences - Courses with SOCY, PSYC and SOWK prefixes
- Business - Courses with ACTG, BUSN, ECON, FINC, INTB, MGMT and MRKT prefixes
- Communication - Courses with COMM prefixes
- Computational Sciences - Courses with MATH and CSCI prefixes
- Education - Courses with CHLD, EDUC and EDSE prefixes
- Emergency Services - Courses with CJUS, FIRE and EMED prefixes
- Engineering - Courses with EGEE, EGET, EGME, EGEM, EGMT, EGNR and EGRS prefixes

- Fine Art - Courses with ARTS, DANC, FINE, MUSC and THEA prefixes
- Health Bach - Courses with EMED, HLTH, KINS, NURS and PNUR prefixes
- Humanities and Philosophy - Courses with HUMN and PHIL prefixes
- Modern Language and Literature - Courses with ENGL, FREN and SPAN prefixes
- Natural Science - Courses with BIOL, CHEM, EVRN, GEOL, NSCI and PHYS prefixes
- Social Sciences - Courses with ECON, GEOG, HIST and POLI prefixes

Additional Major Requirements:

- PHIL Elective (excluding PHIL205) 3
- INTD490 Senior Directed Study 3-4

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Geology: Bachelor of Science

Geology examines the dynamic Earth and its physical, chemical and biologic history. It involves the study of changes that are taking and have taken place and the forces that cause these changes. For example, geologists interpret the movements of the continents over geologic time and the formation of mountains, volcanoes and other features of the Earth's surface. Geologists attempt to understand our physical environment from which we derive most of the natural resources essential to civilization. They investigate the processes that led to the formation of mineral deposits, and oil, gas and coal. They also study environmental change throughout the history of the Earth and how those changes and the development of life are related. Geologists attempt to predict natural disasters such as earthquakes, volcanic eruptions, and landslides, and they are very active in modeling groundwater flow to develop water reserves for municipalities and to protect groundwater from contamination. Geologists study the natural world and apply their knowledge to achieve harmony between the human race and its environment.

Program Learning Outcomes:

Knowledge & Professional Skills: The Geology graduate will demonstrate 1. theoretical and practical knowledge of geologic principles; 2. Teamwork, 3. Professional behavior, 4. communication skills

Readiness for Graduate Study and/or Employment: The Geology graduate will demonstrate readiness graduate school or for geoscience employment such as: an environmental geologist, public sector geoscientist, mud logger, geophysicist, mine geologist, exploration geologist, science technician, etc.

Scholarship: The university supports scholarship where undergraduate students have the opportunity to engage in geoscience research, often publishable, working with faculty mentors.

Technical Skills: The Geology graduate will solve geologic problems by demonstrating competence conducting field and laboratory studies; 2. creating and

interpreting geoscience maps and cross sections, 3. analyzing geologic data sets and software and/or technology.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Geology](#)
- [Bachelor of Science Geology, Environmental Geology Concentration](#)
- [Bachelor of Science Geology, Water and Climate Concentration](#)

Degree Requirements

Bachelor of Science Geology

Geology Course Requirements (51 credits)

- GEOL121 Physical Geology 4
- GEOL122 Historical Geology 4
- GEOL223 Earth Materials 4
- GEOL308 Structural Geology Systems 5
- GEOL315 Geoenvironmental Systems 5
- GEOL322 Geochemical Systems 4
- GEOL334 Hydrologic Systems Surface & Ground Water 4
- GEOL355 Stratigraphy and Sedimentation 4
- GEOL380 Introduction to Field Geology 3
- GEOL431 Geophysical Systems 5
- GEOL440 Technology in Geology 2
- GEOL450 Geology Seminar I 2
- GEOL451 Geology Seminar II 2
- GEOL468 Tectonic Systems 5
- GEOL480 Advanced Field Geology 3

Support Courses (27-28 credits)

- NRES199 Freshman Seminar 1
- CHEM115 General Chemistry I 5
- PHYS221 Principles of Physics I* 4
- **or**
- PHYS231 Applied Physics Engineer/Scientist I 4
- CHEM116 General Chemistry II 5
- **or**
- PHYS222 Principles of Physics II* 4
- **or**
- PHYS232 Applied Physics Engineer/Scientist II 4
- EVRN131 Introduction to GIS/GPS 3
- MATH111 College Algebra* 3
- MATH112 Calculus for Business and Life Sciences* 4
- **or**
- MATH151 Calculus I 4
- MATH207 Principles of Statistical Methods 3
- **or**
- MATH308 Probability and Mathematical Statistics 3
- **or**
- BUSN211 Business Statistics 3
- **or**
- BIOL280 Biostatistics 3

*Students with adequate preparation in mathematics or are considering graduate school are advised to take MATH151 and MATH152 and PHYS231 and PHYS232 and CHEM115 and CHEM116.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Environmental Geology Concentration Geology Course Requirements (42 credits)

- GEOL121 Physical Geology 4
- GEOL122 Historical Geology 4
- GEOL223 Earth Materials 4
- GEOL308 Structural Geology Systems 5
- GEOL315 Geoenvironmental Systems 4
- GEOL322 Geochemical Systems 4
- GEOL334 Hydrologic Systems 4
- GEOL380 Introduction to Field Geology 3
- GEOL431 Geophysical Systems 4
- GEOL440 Technology in Geology 2
- GEOL450 Geology Seminar I 2
- GEOL451 Geology Seminar II 2
- GEOL480 Advanced Field Geology 3

Support Courses (42 credits)

- NRES199 Freshman Seminar 1
- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- PHYS221 Principles of Physics I* 4
- **or**
- PHYS231 Applied Physics Engineer/Scientist I 4
- EVRN131 Introduction to GIS/GPS 3
- EVRN311 Environmental Law 3
- EVRN341 Fate & Transport Environment 4
- NSCI103 Environmental Science 3
- NRES230 Introduction to Soil Science 4
- MATH111 College Algebra* 3
- MATH112 Calculus for Business and Life Sciences* 4
- **or**
- MATH151 Calculus I 4
- MATH207 Principles of Statistical Methods 3
- **or**
- MATH308 Probability and Mathematical Statistics 3
- **or**
- BUSN211 Business Statistics 3
- **or**
- BIOL280 Biostatistics 3

Distributed Electives (16 credits minimum)

- CHEM208 Survey Organic Chemistry/Biol Apps 4
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM326 Organic Chemistry II 4
- CHEM332 Instrumental Analysis 4
- ECON307 Environmental Economics 3
- EVRN211 Field Data Methods 1
- EVRN225 Intermediate GIS 3
- EVRN315 Human Impacts on Environment 4
- EVRN317 Environmental Health Apps 4
- EVRN325 Geospatial Analysis 3
- EVRN365 Applied Geospatial Technologies 4
- EVRN389 Environmental Research Methods 3
- NRES399 Research Project Design 1
- EVRN435 Environmental Systems 3
- EVRN495 Senior Project 2
- NRES499 Senior Capstone 1
- FIRE312 Hazardous Material Management 4
- GEOG108 Meteorology & Climatology 4
- GEOL355 Stratigraphy and Sedimentation 4
- GEOL490 Research Topics in Geology 1-4
- GEOL495 Senior Project 2
- POLI342 International Environmental Policy 3

*Students with adequate preparation in mathematics and/or interested in graduate school are advised to take MATH151 and MATH152 and PHYS231 and PHYS232.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Water and Climate Concentration Geology Course Requirements (39 credits)

- GEOL121 Physical Geology 4
- GEOL122 Historical Geology 4
- GEOL223 Earth Materials 4
- GEOL308 Structural Geology Systems 5
- GEOL315 Geoenvironmental Systems 4
- GEOL322 Geochemical Systems 4
- GEOL334 Hydrologic Systems 4
- GEOL380 Introduction to Field Geology 3
- GEOL431 Geophysical Systems 4
- GEOL440 Technology in Geology 2
- GEOL450 Geology Seminar I 2
- GEOL451 Geology Seminar II 2

Support Courses (38-39 credits)

- NRES199 Freshman Seminar 1

- CHEM115 General Chemistry I 5
- PHYS221 Principles of Physics I* 4
- **or**
- PHYS231 Applied Physics Engineer/Scientist I 4
- CHEM116 General Chemistry II 5
- **or**
- PHYS222 Principles of Physics II* 4
- **or**
- PHYS232 Applied Physics Engineer/Scientist II 4
- EVRN131 Introduction to GIS/GPS 3
- EVRN389 Environmental Research Methods 3
- GEOG108 Meteorology & Climatology 4
- NSCI116 Introduction to Oceanography 4
- NRES286 Principles of Watersheds 3
- MATH111 College Algebra* 3
- MATH112 Calculus for Business and Life Sciences* 4
- **or**
- MATH151 Calculus I 4
- MATH207 Principles of Statistical Methods 3
- **or**
- MATH308 Probability and Mathematical Statistics 3
- **or**
- BUSN211 Business Statistics 3
- **or**
- BIOL280 Biostatistics 3

Distributed Electives (10 credits minimum)

- EVRN211 Field Data Methods 1
- EVRN225 Intermediate GIS 3
- EVRN325 Geospatial Analysis 3
- EVRN311 Environmental Law 3
- EVRN315 Human Impacts on Environment 4
- EVRN365 Applied Geospatial Technologies 4
- EVRN341 Fate and Transport Environment 4
- EVRN495 Senior Project 2
- GEOL355 Stratigraphy and Sedimentation 4
- GEOL480 Advanced Field Geology 3
- GEOL495 Senior Research 2
- GEOL490 Research Topics in Geology 1-4
- NSCI103 Environmental Science 3
- NRES230 Introduction to Soil Science 4
- NRES284 Principles of Forest Conservation 4
- NRES345 Limnology 4
- NRES399 Research Project Design 1
- NRES499 Senior Capstone 1

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Individualized Studies: Bachelor of Arts/Science

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.

Program Learning Outcomes:

Formal Communication: Students will develop and clearly express complex ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will identify the need for, gather, and accurately process the appropriate type, quality, and quantity of evidence to answer a complex question or solve a complex problem within the content of their chosen studies.

Analysis and Synthesis: Students will organize and synthesize evidence, ideas, or works of imagination to answer an open-ended question, draw a conclusion, achieve a goal, or create a substantial work of art as appropriate to their chosen studies.

Professional Responsibility: Students will demonstrate the ability to apply professional ethics and intercultural competence when answering a question, solving a problem, or achieving a goal related to their chosen studies.

Degree Requirements

Guidelines for an individualized studies degree are:

1. Contact a department chair or regional site director with a preliminary plan for degree development.
2. The department chair or regional site director will identify possible faculty advisors or another department chair to counsel you in degree planning.
3. The advisors 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:
 1. general education requirements.
 2. minimum of 124 credits and a minimum of 30 credits on campus or a minimum of 30 credits of LSSU classes offered at a regional center. Fifty percent of the 300-400 level credits used in the concentration areas must be completed with LSSU classes.
 3. 24 credits at 300/400 level in addition to general education requirements and a 2.00 cumulative GPA. At least one three-credit course at the 400 level is required.
 4. BA or BS degree requirement.
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 Major Change Form.
9. Any course changes from the approved program must be submitted to the committee for approval.

Integrated Science: Bachelor of Science

The Secondary Education program for Integrated Science prepares educators to

teach in grades 6-12 all courses in science, life science, physical science, biology, chemistry and physics. The degree program prepares individuals to qualify for Michigan Teacher certification in Integrated Science (program code DI).

Contact the School of Education for more information.

In addition to classroom teaching, graduates can pursue careers as science educators, curriculum specialists or enter graduate study in science, science education or related fields.

Program Learning Outcomes:

Candidates will make instructional choices that emphasize the hands-on, minds-on, real-world, phenomenon-based approach to science learning.

Candidates will accurately describe the principals and procedures of scientific investigation and the safe use of investigation processes.

Candidates will describe and give examples of the role of science in fostering and satisfying curiosity, in solving human problems, and in informing human decision making.

Candidates will synthesize knowledge of the interrelationships among the life, earth/space, and physical sciences and the cross cutting themes that connect the sciences to technology, math, and engineering.

Candidates will apply scientific research understanding and critical analysis skills to lead students in discussions of global and local aspects of issues such as the environment and human health.

With the guidance of a faculty mentor, candidates will develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge.

Degree Requirements

Science Core (69 credits)

- BIOL105 Function of the Human Body 4
 - BIOL131 General Biology: Cells 4
 - BIOL132 General Biology: Organisms 4
 - BIOL220 Genetics 4
 - BIOL337 General Ecology 3
 - CHEM115 General Chemistry I 5
 - CHEM116 General Chemistry II 5
 - CHEM208 Survey Organic Chemistry/Biol Apps 4
 - CHEM231 Quantitative Analysis 4
 - CHEM395 Junior Seminar 1
 - CHEM499 Senior Seminar 1
 - GEOL121 Physical Geology 4
 - GEOL122 Historical Geology 4
 - MATH111 College Algebra 3
 - MATH207 Principles of Statistical Methods 3
 - NSCI119 Astronomy 4
 - PHYS221 Principles of Physics I 4
 - PHYS222 Principles of Physics II 4
 - GEOG108 Phy Geography: Meteorology and Climatology 4
- or**

- NSCI116 Oceanography 4

Professional Education Sequence and Education Cognates- see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Kinesiology: Bachelor of Science

A Bachelor of Science degree in Kinesiology prepares you to work in a variety of professional settings, ranging from clinical rehabilitation to health and fitness facilities to careers opportunities in the administration and management of sport and entertainment. Employers include physical rehabilitation clinics, hospitals, biomedical firms, the health and fitness industry, educational institutions, sports management, YMCA's and other not-for-profit agencies, and municipal recreation among others.

The BS in Kinesiology prepares students for placement in graduate programs such as physical therapy, occupational therapy, cardiac rehabilitation, kinesiology and exercise science, sport psychology, chiropractic medicine and other allied health fields.

Upon graduation, students are also prepared to sit for the American College of Sports Medicine (Clinical Exercise Physiologist), National Strength and Conditioning Association (Certified Strength and Conditioning Specialist), and multiple National Academy of Sports Medicine certifications.

Program learning Outcomes:

Physical Activity in Health, Wellness, and Quality of Life - Graduates will design individual and group level programs that promote physical activity, health, and improve quality of life.

Scientific Foundations of Kinesiology - Graduates will critically evaluate scholarly material and design an evidence based solution to a current research question in Kinesiology utilizing the scientific method of inquiry.

Cultural, Historical, Philosophical Dimensions of Kinesiology - Graduates will critically evaluate and organize scholarly material to present an evidence-based point of view specific to cultural, historical, and philosophical dimensions of physical activity.

The Practice of Physical Activity Across the Lifespan - Graduates will analyze mechanisms for the delivery of physical activity at the individual and group level across various health, social and inter-generational stratification.

Professional Development in Kinesiology - Graduates will to analyze and communicate personal assets and deficiencies in the creation of professional career goals and objectives.

Technical Competency in Kinesiology - Graduates evaluate, analyze, and demonstrate technical competency in the application of interventions at the individual and group level.

Degree Requirements

Major Core Requirements (32 credits)

- USEM101 University Seminar I: Foundation Success 1
- KINS101 Foundations in Kinesiology 3
- KINS140 Health and Fitness 3
- KINS141 Introduction to Movement 3
- KINS265 Personal Fitness Training 3
- KINS275 Nutrition for Sport and Exercise Performance 3
- KINS295 Facility and Program Operations 3
- KINS358 Research Methods in Kinesiology 3
- KINS401 Internship I 2
- KINS402 Internship II 2
- KINS428 Psychology of Exercise and Rehabilitation 3
- KINS444 Exercise Prescription 3
- KINS481 Professional Development Seminar 1

Complete at least one concentration:

Human Performance (45 credits)

- KINS105 Program Development and Leadership 3
- KINS262 Exercise Physiology 3
- KINS268 Fitness Eval I: Functional Assessment 3
- KINS332 Health Promotions 3
- KINS344 Kinesiology 3
- KINS346 Therapeutic Exercise Rehabilitation 3
- KINS348 Fitness Evaluation II Lab Procedures 3
- KINS434 Neurological Basics of Motor Learning 3
- KINS452 Allied Health Administration 3
- BIOL121 Anatomy and Physiology I 4
- BIOL122 Anatomy and Physiology II 4
- CHEM108 and CHEM109 Applied Chemistry and Lab (or higher level) 4
- MATH110 Explorations in Mathematics (or higher level) 3

Select one statistics course from the following:

- BUSN211 Business Statistics 3
- BIOL280 Biostatistics 3
- MATH207 Principles of Statistical Methods 3
- PSYC210 Statistics 3

Rehabilitation Sciences (45 credits)

- KINS262 Exercise Physiology 3
- KINS268 Fitness Eval I: Functional Assessment 3
- KINS344 Kinesiology 3
- KINS346 Therapeutic Exercise Rehabilitation 3
- KINS348 Fitness Evaluation II Lab Procedures 3
- KINS434 Neurological Basics of Motor Learning 3
- KINS452 Allied Health Administration 3
- BIOL121 Anatomy and Physiology I 4
- BIOL122 Anatomy and Physiology II 4
- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5

- MATH111 College Algebra (or higher level) 3

Select one statistics course from the following:

- BUSN211 Business Statistics 3
- BIOL280 Biostatistics 3
- MATH207 Principles of Statistical Methods 3
- PSYC210 Statistics 3

Sport and Fitness Management (31 credits)

- KINS105 Program Development and Leadership 3
- KINS270 Sports Management 3
- KINS332 Health Promotions 3
- KINS375 Commercial Recreation 3
- KINS482 Administration of Recreation Services 3
- Diversity Elective 3
- MATH110 Explorations in Mathematics (or higher level) 3
- POLI130 Introduction to State and Local Government 4
- SOWK480 Grant Writing 3

Select one statistics course from the following:

- BUSN211 Business Statistics 3
- BIOL280 Biostatistics 3
- MATH207 Principles of Statistical Methods 3
- PSYC210 Statistics 3

Electives to reach 124 credits

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Language Arts: Bachelor of Arts

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 human letters and language study.

The goal of this program is to prepare future teachers to instill a lifelong love of reading and writing in their students. To this end, Language Arts candidates sponsor an annual children's writing festival and publish an anthology with stories written by area elementary school students. Language Arts candidates have the opportunity to practice their teaching before they graduate in a variety of local classrooms, as part of their professional education coursework.

The Language Arts program prepares graduates for elementary-level teacher certification in Michigan, which permits individuals to teach in self-contained classrooms at grades K-8, in all subjects at grades K-5, and in language arts at grades 6-8. See Elementary Teaching for additional information regarding this program.

Program Learning Outcomes:

Instructional Choices Candidates will make instructional choices that consider the

integrated nature of the language arts, the socio-cultural and dynamic nature of language, and the principles of rhetoric and communication.

Grammar and Language Candidates will value both prescriptive and descriptive grammars and conventions of English and appreciate the dynamic nature of English as a language shaped by historical, social, and cultural influences.

Lifelong Reading and Writing Candidates will consider and recommend research-proven language arts teaching practices that foster lifelong reading and writing in children.

Analyze Texts Candidates will synthesize knowledge of genre, craft, and criticism to analyze texts.

Literacy and Scholarship Practices Candidates will value, apply, and recommend effective literacy and scholarship practices.

Degree Requirements

Bachelor of Arts Language Arts - Elementary Teaching

In this program, students will complete a teaching major in Language Arts, and a planned program in the other three academic areas essential to elementary school teaching: mathematics, natural science and social science. The planned program is explained in the Elementary Education section of this catalog.

The program also includes general education requirements and a professional education sequence. Students complete their initial professional education course in their sophomore year, and then apply for formal admission to the Teacher Education Program.

English Requirements (36 credits)

- ENGL180 Introduction to Literary Studies 3
- ENGL221 Introduction to Creative Writing 3
- ENGL222 English Grammar 3
- ENGL231 American Literature I 3
- ENGL232 American Literature II 3
- ENGL236 Literature and Culture 3
- ENGL320 Responding to Writing 3
- ENGL335 Children's Literature 3
- ENGL470 Language Arts Senior Thesis 3
- COMM308 Communication Theory 3
- THEA112 Acting for Beginners 3
- CHLD225 Emergent Literacy 3

English Departmental Requirements (8 credits)

- One year of a modern language other than English

For information regarding the Professional Educational Sequence and Elementary Planned Program, - see [Elementary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than

English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Manufacturing Engineering Technology: Bachelor of Science

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 coordinating people from several other fields.

In addition to providing a strong background in the fundamentals of manufacturing engineering technology, *the program places an emphasis on the application of computer systems to modern manufacturing technologies.* This includes topics such as robotics, computer-aided design (CAD), programmable logic controllers (PLC), computer-aided manufacturing (CAM), and simulation of manufacturing systems. The classes and labs in the curriculum average about 12 students and are taught by faculty who are dedicated to undergraduate teaching excellence.

Students pursuing the B.S. degree in manufacturing at LSSU have the option to minor in robotics technology. LSSU is one of a few universities in the U.S. to offer the robotics minor in the TAC of ABET-accredited* manufacturing engineering technology B.S. degree. LSSU is home to one of the best robotics educational facilities in North America. Graduates with this emphasis have had nearly 100 percent job placement with high and competitive starting salaries. Your minor in robotics will be identified on your transcripts.

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.

Program Learning Outcomes:

Apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline

Design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline

Apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature

Conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes

Function effectively as a member as well as a leader on technical teams

Degree Requirements

Departmental Requirements: (102 credits)

Mathematics (12 credits)

- MATH111 College Algebra 3
- MATH112 Calculus for Business and Life Science 4
- MATH131 College Trigonometry 3
- MATH207 Principles of Statistical Methods 3

Science (9 credits)

- CHEM108 Applied Chemistry I 3
- CHEM109 Applied Chemistry Lab 1
- PHYS221 Principles of Physics I 4

Engineering Technology (62 credits)

- EGNR101 Introduction to Engineering 2
- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGNR245 Calculus Applications for Technology 3
- EGNR265 "C" Programming 3
- EGNR310 Advanced Quality Engineering 3
- EGNR491 Engineering Design Project I 3
- EGNR495 Engineering Design Project II 3
- EGET110 Applied Electricity 4
- EGET175 Applied Electronics 4
- EGME110 Manufacturing Processes I 3
- EGME141 Solid Modeling 3
- EGME240 Assembly Modeling and GD&T 3
- EGME275 Engineering Materials 3
- EGME276 Strength of Materials Lab 1
- EGMT216 CAM with CNC Applications 3
- EGMT225 Statics and Strength of Materials 4
- EGRS365 Programmable Logic Controllers 3
- EGRS380 Robotics Technology 2
- EGRS381 Robotics Technology Lab 1
- EGRS480 Manufacturing Automation 3
- EGRS481 Manufacturing Automation Lab 1

Support Courses (22 credits)

- ECON302 Managerial Economics 4
- MGMT360 Management Concepts and Applications 3
- Cooperative Education* 2
- Technical Electives 10
- Free Electives 3

Select a Senior Engineering Project Sequence: (0-8 credits)

Industrial Project (0 add'l credits-see above)

- EGNR491 Engineering Design Project I 3
- EGNR495 Engineering Design Project II 3

Co-op Project (add'l 6 credits)

- EGNR250 Cooperative Education I 2
- EGNR450 Cooperative Education Project I 2
- EGNR451 Cooperative Education Project II 2

- EGNR491 Engineering Design Project I 3

Research Project (add'l 8 credits)

- EGNR260 Engineering Research Methods 2
- EGNR460 Engineering Research Project I 4
- EGNR461 Engineering Research Project II 2

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 minor in robotics technology.

In the **general option**, you will have the ability to choose the specific course of study for the course(s) noted as technical electives in the curriculum.

For the **robotics technology minor**, you will complete a specified advanced course in robotics in place of the technical electives credits. The advanced course will provide you with a strong background in systems integration, machine vision, sensors and automation. LSSU is one of a few universities in the USA that offer you this option to specialize in robotics in the manufacturing program. LSSU is home to one of the best robotics educational facilities in North America. Graduates with this emphasis have had nearly 100-percent job placement with high and competitive starting salaries. Your completion of study in the robotics minor will be identified on your transcript.

Additional Credits for the Robotics Technology minor (4 credits)

- EGRS430 Systems Integration and Machine Vision 4

General Option Select ten credits from the following courses:

Technical Electives

- EGRS215 Introduction to Robotics 2
- EGEE250 Microcontroller Fundamentals 4
- EGME310 Vehicle Development & Testing 2
- EGMT332 Thermodynamics & Heat Transfer for Technologists 4
- MGMT375 Introduction to Supply Chain Management 3
- MGMT471 Production/Operations Management 3
- EGME338 Fluid Mechanics 2
- EGET310 Electronic Manufacturing Processes 4
- EGNR250 Cooperative Education I 2

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Mathematics: Bachelor of Science

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 concentration 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 Certification:

A completion of professional education coursework, including a semester of student teaching, prepares students for elementary or secondary teacher certification in Michigan and Ontario.

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.

Program Learning Outcomes (BS Mathematics):

Develop and clearly express mathematical concepts in written and oral communication. (*Communication*)

Use computing, gather evidence, discover patterns, create models, experiment with data, and solve theoretical or applied problems. (*Problem Solving*)

Use symbolic, analytical and quantitative skills and formal mathematical tools and techniques to analyze problems, synthesize solutions, and write proofs. (*Analysis*)

Apply mathematical methodologies and adhere to ethical and professional standards in their senior capstone project. (*Professional Responsibility*)

Program Learning Outcomes (BS Mathematics, Elementary Teaching):

Use mathematical processes, axiomatic systems, computing, algorithms, and logical reasoning to solve problems and communicate mathematical ideas. (*Mathematical Processes and Number Concepts*)

Describe, analyze and generalize patterns, algebraic relationships and functions using the tools of algebra and calculus. (*Patterns, Algebraic Relationships and Functions*)

Apply geometric principles in Euclidean, analytic, transformational and vector geometry to analyze geometric objects, form conjectures, solve problems and prove theorems. (*Measurement and Geometry*)

Organize, analyze and interpret data, sets and relations using the tools of statistics, probability and discrete mathematics. (*Data Analysis, Statistics, Probability, and Discrete Mathematics*)

Make instructional choices that reflect the integrated nature of mathematical concepts and mathematical practices within and among the mathematical domains.

(Instructional Choices)

Program Learning Outcomes (BS Mathematics, Secondary Teaching)

Use mathematical processes, axiomatic systems, computing, algorithms, and logical reasoning to solve problems and communicate mathematical ideas. (*Mathematical Processes and Number Concepts*)

Describe, analyze, and generalize patterns, algebraic relationships and functions using the tools of algebra and calculus. (*Patterns, Algebraic Relationships, and Functions*)

Apply geometric principles in Euclidean, analytic, transformational and vector geometry to analyze geometric objects, form conjectures, solve problems and prove theorems. (*Measurement and Geometry*)

Organize, analyze and interpret data, sets and relations using the tools of statistics, probability and discrete mathematics. (*Data Analysis, Statistics, Probability, and Discrete Mathematics*)

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Mathematics](#)
- [Bachelor of Science Mathematics, Elementary Teaching](#)
- [Bachelor of Science Mathematics, Secondary Teaching](#)
- [Bachelor of Science Mathematics, Actuarial and Business Applications Concentration](#)

Degree Requirements

Bachelor of Science Mathematics

Departmental Requirements: (55 credits)

- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH251 Calculus III 4
- MATH215 Fundamental Concepts of Mathematics 3
- MATH216 Discrete Mathematics and Problem Solving 3
- MATH305 Linear Algebra 3
- MATH308 Probability and Mathematical Statistics 3
- MATH309 Applied Statistics 4
- MATH310 Differential Equations 3
- MATH341 Abstract Algebra I 3
- MATH351 Graph Theory 3
- MATH401 Mathematical Modeling 3
- MATH411 Advanced Calculus 3
- MATH490 Research Topics in Mathematics 3
- Additional MATH course numbered above MATH216 3-4

Other Requirements (14 credits)

- CSCI103 Survey of Computer Science 3
- CSCI105 Intro to Computer Programming 3
- CSCI121 Principles of Programming 4
- PHYS231 Applied Physics for Engineers and Scientists I 4

Free Electives or Academic Minor (32-36 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Mathematics, Elementary Teaching

In this program, students 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 [Elementary Education section of this catalog](#).

The program also includes general education requirements and a professional education sequence. Students complete their initial teacher education courses in their sophomore year, and then apply for formal admission to the Teacher Education Program.

Degree Requirements:

Mathematics Requirements (37 credits)

- CSCI105 Intro. to Computer Programming 3
- CSCI106 Web Page Design and Development 3
- MATH103 Number Systems and Problem Solving 4
- MATH104 Geometry & Measurement 4
- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH207 Principles of Statistical Methods 3
- MATH215 Fundamental Concepts of Math 3
- MATH305 Linear Algebra 3
- MATH321 History of Mathematics 3
- MATH325 College Geometry 3

For information regarding the Professional Education Sequence and Elementary Planned Program, see [Elementary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Bachelor of Science Mathematics, Secondary Teaching

In this program, students will complete a major in mathematics tailored to the needs of a secondary teacher. Computer science courses are included, and students work extensively with computer and calculator technology as it applies to classroom teaching.

This program also includes general education requirements and a professional education sequence. Students complete their initial teacher education courses in their sophomore year and then apply for formal admission to the Teacher Education Program.

Graduates earn a bachelor's degree, which includes a semester of student teaching, in order to become certified to teach.

Degree Requirements:

Mathematics Requirements (42 credits)

- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH207 Principles of Statistical Methods 3
- MATH215 Fundamental Concepts of Math 3
- MATH216 Discrete Mathematics and Problem Solving 3
- MATH251 Calculus III 4
- MATH305 Linear Algebra 3
- MATH310 Differential Equations 3
- MATH321 History of Mathematics 3
- MATH325 College Geometry 3
- MATH341 Abstract Algebra I 3
- MATH401 Mathematical Modeling 3

Complete one methods course from the following:

- EDUC442 Math Methods Secondary Teacher 3
- EDUC452 Directed Study Math Methods Secondary Teacher3

Cognate

- CSCI105 Intro. to Computer Programming 3
- or
- CSCI121 Prin. of Computer Programming 4

Professional Education Sequence and Education Cognates- see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Bachelor of Science Mathematics, Actuarial and Business Applications Concentration

Departmental Requirements: (52 credits)

- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH251 Calculus III 4
- MATH215 Fundamental Concepts of Mathematics 3

- MATH216 Discrete Mathematics and Problem Solving 3
- MATH305 Linear Algebra 3
- MATH308 Probability and Mathematical Statistics 3
- MATH309 Applied Statistics 4
- MATH310 Differential Equations 3
- MATH341 Abstract Algebra I 3
- MATH351 Graph Theory 3
- MATH401 Mathematical Modeling 3
- MATH411 Advanced Calculus 3
- MATH490 Research Topics in Mathematics 3

Cognates (17 credits)

- CSCI103 Survey of Computer Science 3
- CSCI105 Intro. to Computer Programming 3
- CSCI121 Principles of Programming 4
- ECON201 Principles of Macroeconomics 3
- FINC341 Managerial Finance 4

A student choosing this emphasis will complete a minor in accounting-finance (24 credits).

Free Electives (11-15 credits)

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Mechanical Engineering: Bachelor of Science

Mechanical engineering is a broad-based program that prepares you for a rewarding career in mechanical and related engineering fields. Course work for this EAC of ABET-accredited* program includes 72 credits in Engineering subjects, 32 credits in math and sciences and 25 credits in general education for a total of 129-131 credits in the bachelor of science degree. You will work with mechanical systems in the laboratories and receive an excellent mix of theory and application.

Program Highlights:

- Emphasis is on preparing you to solve real-world engineering problems.
- You will participate in multidisciplinary, industrial or research-based senior engineering design projects which emphasize teamwork, communications, project management, customer relations and ethics.
- You will learn numerous software packages for CAD, CAM, fluid dynamics, finite element analysis, and other applications.
- Cooperative education opportunities are available.
- Degree Concentrations — You must choose from among three concentrations: robotics and automation, vehicle systems, or general mechanical while studying mechanical engineering.
- Emphasis on fundamentals of engineering, applications of theory, traceability to first principles, and generous laboratory content to complement and reinforce theoretical understanding.

The **robotics and automation concentration** will give you skills through courses in machine vision, system integration, automated manufacturing, robotics, and

programmable logic controllers.

The **vehicle systems concentration** addresses the performance of surface vehicles of all types (automotive, rail, terrain, watercraft, etc.) through a series of courses in vehicle dynamics, geometric dimensioning and tolerancing, vehicle testing, and vibration and noise control. The emphasis is on projecting performance through analytical skills and computer simulation, and testing using modern instrumentation.

The **general concentration** enables students to select courses from the concentrations described above as well as other Engineering subjects.

Cooperative Education:

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

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Departmental Requirements:

Mathematics

- EGNR340 Advanced Numerical Methods for Engineers 1
- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH251 Calculus III 4
- MATH308 Probability & Mathematical Statistics 3
- MATH310 Differential Equations 3

Sciences

- CHEM115 General Chemistry I 5
- PHYS231 Applied Physics for Engineers and Scientists I 4
- PHYS232 Applied Physics for Engineers and Scientists II 4

Engineering

- EGEE210 Circuit Analysis 4
- EGEM220 Statics 3
- EGEM320 Dynamics 3
- EGME110 Manufacturing Processes I 3
- EGME141 Solid Modeling 3
- EGME225 Mechanics of Materials I 3
- EGME275 Engineering Materials I 3
- EGME276 Strength of Materials Lab 1
- EGME337 Thermodynamics 4
- EGME338 Fluid Mechanics 3
- EGME350 Machine Design 4
- EGME431 Heat Transfer 3
- EGME432 Thermal and Fluids Lab 2
- EGNR101 Introduction to Engineering 2
- EGNR140 Linear Algebra & Numerical Methods for Engineers 2
- EGNR265 "C" Programming 3
- EGNR340 Adv Numerical Methods for Engineers 2
- EGRS460 Control Systems 4

Senior Sequence (Complete one of the following sequences):

Industrial Project

- EGNR491 Engineering Design Project I 3
- EGNR495 Engineering Design Project II 3

Co-op Project

- EGNR450 Cooperative Education Project I 4
- EGNR451 Cooperative Education Project II 3
- EGNR491 Engineering Design Project I 3

Research Project

- EGNR260 Engineering Research Methods 2
- EGNR460 Engineering Research Project I 4
- EGNR461 Engineering Research Project II 2

Technical Electives (Complete one of the following concentrations):

Vehicle Systems Concentration (C or better grade required for all classes)

- EGEE280 Introduction to Signal Processing 4
- EGME240 Assembly Modeling and GD&T 3
- EGME310 Vehicle Development & Testing 2
- EGME415 Vehicle Dynamics 2
- EGME425 Vibrations and Noise Control 4

Select one of the following:

- EGME442 Finite Element Analysis 3
- EGRS461 Design of Control Systems 4

Robotics and Automation Concentration (C or better grade required for all

classes)

- EGRS365 Programmable Logic Controllers 3
- EGRS385 Robotics Engineering 3
- EGRS430 Systems Integration and Machine Vision 4
- EGRS435 Automated Manufacturing Systems 4

Select one of the following:

- EGME240 Assembly Modeling and GD&T 3
- EGMT216 CAM with CNC Applications 3
- EGNR310 Advanced Quality Engineering
- EGEE280 Introduction to Signal Processing 4

General Concentration

- EGME240 Assembly Modeling and GD&T 3

Select 14 credits from the list below with at least 5 credits at the 400 level.

- EGEE280 Introduction of Signal Processing 4
- EGME310 Vehicle Development & Testing 2
- EGME415 Vehicle Dynamics 2
- EGME425 Vibrations and Noise Control 4
- EGMT216 CAM with CNC Applications 3
- EGNR261 Energy Systems and Sustainability 3
- EGNR361 Energy Systems and Sustainability Lab 1
- EGNR362 Vehicle Energy Systems 3
- EGNR310 Advanced Quality Engineering 3
- EGRS365 Programmable Logic Controllers 3 (if not used above)
- EGRS385 Robotics Engineering 3
- EGRS430 Systems Integration and Machine Vision 4
- EGRS435 Automated Manufacturing Systems 4

32 credits from Mathematics (including EGNR340) and Natural Sciences is required.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Medical Laboratory Science: Bachelor of Science

Program is Not accepting new students

The Bachelor of Science Medical Laboratory Science has two available degree concentrations: Medical Laboratory Science, Clinical Concentration and Medical Laboratory Science, Academic Concentration.

Medical laboratory scientists (clinical laboratory scientists, medical technologists) perform most of the clinical tests conducted in hospital, veterinary, state, and health laboratories. Most institutions employing medical laboratory scientists require them to be board-certificated by the American Society for Clinical Pathology (ASCP). (Some institutions also accept certification through the American Medical Technologists (AMT).) The Medical Laboratory Science, Clinical Concentration and

the Medical Laboratory Science, Academic Concentration degrees are two alternative routes to obtaining ASCP certification. The Academic Concentration is also excellent preparation for graduate school in many biomedical-related fields.

The Academic Concentration is designed to result in a Bachelor of Science degree in four years. When you finish the Academic Concentration you will receive a Bachelor of Science in Medical Laboratory Science, but you will not be eligible to take the ASCP Board of Certification exam. In order to become eligible to take the certification exam, you must first be accepted into, and complete, a six- to twelve-month clinical experience at an independent hospital-based MLS program that is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). LSU cannot guarantee acceptance into any of the hospital-based programs.

The Clinical Concentration is designed to be completed in four and a half years. When you finish the Clinical Concentration you will receive a Bachelor of Science in Medical Laboratory Science and you will be eligible to take the ASCP Board of Certification exam. The last six months of the Clinical Concentration consist of a clinical experience at one of our partner hospital labs (our Clinical Affiliates). Because our Clinical Affiliates can accommodate only a limited number of students each year, *admission into the Clinical Concentration is by competitive application in the spring of your junior year.*

Program Learning Outcomes:

Recall fundamental principles of each discipline used in the medical laboratory.

Given the necessary data, draw accurate conclusions about the quality of a clinical laboratory test and suggest appropriate action.

Given a set of clinical laboratory data, draw accurate conclusions about the health of the patient and suggest a correct course of action.

Safely and accurately perform basic medical laboratory test procedures.

Use the scientific method to formulate and test hypotheses.

Communicate clearly in writing.

Exhibit professional behavior and attitudes.

After completing a clinical internship at an appropriate medical institution, obtain a passing score on the Board of Certification exam for Medical Laboratory Scientists.

Available degrees (See specific degree requirements further down the page):

- [Medical Laboratory Science, Academic Concentration](#)
- [Medical Laboratory Science, Clinical Concentration](#)

Degree Requirements

Medical Laboratory Science, Academic Concentration

Departmental Requirements

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4

- BIOL199 Freshmen Seminar 1
- BIOL204 General Microbiology 4
- BIOL206 Medical Laboratory Practices 2
- BIOL220 Genetics 4
- BIOL280 Biostatistics 3
- BIOL299 Sophomore Seminar 1
- BIOL306 Mycology 3
- BIOL330 Animal Physiology 4
- BIOL337 General Ecology 3
- BIOL380 Hematology 4
- BIOL399 Planning Research Project 1
- BIOL406 Immunohematology 3
- BIOL422 Parasitology 3
- BIOL423 Immunology 4
- BIOL455 Body Fluids Analysis 4
- BIOL480 Advanced Clinical Microbiology 4
- BIOL499 Senior Symposium 1

Directed Elective: Choose one of:

- BIOL425 Virology 3
- BIOL433 Histology 3
- CHEM326 Organic Chemistry II 4

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM332 Instrumental Analysis 4
- CHEM351 Introductory Biochemistry 4
- MATH111 College Algebra 3
- MATH207 Principles of Statistical Methods 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Medical Laboratory Science, Clinical Concentration

The degree in Medical laboratory science includes the following courses in order to qualify to take the national registry examinations.

Departmental Requirements

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4

- BIOL199 Freshmen Seminar 1
- BIOL204 General Microbiology 4
- BIOL206 Medical Laboratory Practices 2
- BIOL220 Genetics 4
- BIOL280 Biostatistics 3
- BIOL299 Sophomore Seminar 1
- BIOL306 Mycology 3
- BIOL330 Animal Physiology 4
- BIOL380 Hematology 4
- BIOL399 Planning Research Project 1
- BIOL406 Immunohematology 3
- BIOL422 Parasitology 3
- BIOL423 Immunology 4
- BIOL455 Body Fluids Analysis 4
- BIOL460 Clinical Internship 12*
- BIOL480 Advanced Clinical Microbiology 4
- BIOL499 Senior Symposium 1

Directed Elective: Choose one of:

- BIOL425 Virology 3
- BIOL433 Histology 3
- CHEM326 Organic Chemistry II 4

Support Courses

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM332 Instrumental Analysis 4
- CHEM351 Introductory Biochemistry 4
- MATH111 College Algebra 3
- MATH207 Principles of Statistical Methods 3

*The clinical internship will add an additional six months to the time required to earn this degree.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 135 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Nursing: Bachelor of Science

Professional nursing blends a unique body of knowledge from the sciences, social sciences and humanities with a compassionate heart and a sensitive spirit to provide holistic care to those in need.

The School of Nursing offers two curricular tracks to the bachelor of science degree in nursing; the four-year, pre-licensure program and the two-year, completion program for the registered nurse. The programs provide you with the opportunity to acquire knowledge, values and skills necessary for the practice of professional nursing.

Course requirements provide liberal backgrounds in physical science, social science and humanities. This curriculum provides a solid basis for the variety of roles in nursing practice. The nursing curriculum provides an interdisciplinary major and, therefore, does not require a minor to meet graduation requirements. These nursing programs are approved by the Michigan Board of Nursing and the BSN program is accredited by the Commission on Collegiate Nursing Education.

*One Dupont Circle, NW Suite 530
Washington, DC 20036
Telephone: (202) 887-6791
Fax: (202) 887-8476*

Mission Statement:

To graduate competent students who are able to safely provide compassionate nursing care utilizing theory and evidence based practice.

Program Learning Outcomes:

Liberal Education for Baccalaureate Generalist Nursing Practice: Appraises a solid base in liberal education for nursing practice.

Basic Organizational and System Leadership for Quality Care and Patient Safety: Synthesizes knowledge and skills in leadership, quality Improvement, and patient safety to provide quality health care.

Scholarship for Evidence-Based Practice: Evaluates research for potential application for evidence-based practice.

Information Management and Application of Patient Care Technology: Designs knowledge and skills in information management and patient care technology in the delivery of quality patient care.

Health Care Policy, Finance, and Regulatory Environments: Analyzes health care policies, including financial and regulatory, directly and indirectly influencing the nature and functioning of the healthcare system.

Inter-professional Communication and Collaboration for Improving Patient Health Outcomes: Appraises communication and collaboration among health care professionals and patients to deliver high quality and safe patient care.

Clinical Prevention and Population Health: Determines health promotion and disease prevention at the individual and population health levels.

Professionalism and Professional Values: Emulates professionalism and inherent values of altruism, autonomy, human dignity, integrity, and social justice.

Baccalaureate Generalist Nursing Practice: Synthesizes nursing practice with patients, individuals, families, groups, communities, and populations across the lifespan and across the continuum of healthcare environments and the variations of care, the increased complexity, and the increased use of health care resources inherent in caring for patients.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Nursing](#)
- [Bachelor of Science Nursing, Post-Licensure Completion Program, Completion Program for RN Students](#)

Degree Requirements

Bachelor of Science Nursing, Pre-Licensure Program

Pre-Nursing Entrance Requirements:

To qualify as a pre-nursing major, applicants must satisfy University admission requirements described in the admission section of the Catalog.

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 School of Nursing for admission to the nursing major. Admission is based upon 1) completing a current application in its entirety by the deadline of each semester, 2) successful completion of selected pre-nursing courses, 3) academic achievement, 4) a negative criminal background report, 5) ability to meet physical demands of program with or without accommodation 6) completion of TEAS test with passing score, and 7) verification of CPR training.

It is recommended that students be able to demonstrate computer literacy — basic word processing, library and Internet searches. Mathematics competency is required prior to the sophomore year. Entrance into nursing requires a grade point average of 2.7 or above in core pre-nursing and nursing courses. A maximum of 28 students will be accepted for each fall and spring semester. Canadian Immigration Service may deny a visa for clinical in Ontario on the basis of a conviction for a crime or for substance abuse.

Required academic courses are separated into three groups:

1. Nursing support courses - anatomy and physiology, microbiology, applied chemistry, mathematics, psychology, sociology, nutrition, pharmacology, pathophysiology, informatics in the health sciences, multicultural approach to health care and statistics).
2. General education requirements (English, humanities and speech).
3. Nursing courses

Progression Requirements in Nursing:

A grade of C or above is required in all courses. A grade of D in other general education or elective courses is accepted.

Transfer credit will be granted on an individual basis. Only those courses with a grade of C or better are transferable. Credits for Anatomy & Physiology courses and pharmacology are transferable for five years.

Time requirement for program completion is four academic years; however, completion may require more than four years for students who cannot maintain the high credit load each semester. Progression and readmission policies are detailed in the Nursing Student Handbook.

Students are responsible for transportation to and from clinical agencies, as well as all additional costs incurred by enrollment in the nursing program. Costs, academic and general information are listed in the Nursing Student Handbook and viewable on-line.

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.). There may be differences in testing in other states and provincial

jurisdictions. 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 School of Nursing dean and direct questions to the Michigan Board of Nursing and the Immigration Service prior to considering entry in the program.

Nursing (61 credits)

- NURS211 Intro. to Professional Nursing 3
- NURS212 Health Appraisal 4
- NURS213 Fundamentals of Nursing 6
- NURS325 Nursing of Childbearing Families 5
- NURS326 Nursing of Children & Families 5
- NURS327 Adult Nursing I 8
- HLTH328 Multicultural Approaches to Health Care 3
- NURS431 Adult Nursing II 8
- NURS432 Nursing of Populations 5
- NURS433 Community Mental Health Nursing 5
- NURS434 Nursing Research 3
- NURS435 Management in Nursing 4
- NURS436 Nursing Issues 2

Support Courses (44 credits)

- BIOL121 Human Anatomy & Physiology I* 4
- BIOL122 Human Anatomy & Physiology II* 4
- BIOL223 Clinical Microbiology 3
- CHEM108 Applied Chemistry * 3
- CHEM110 Applied Organic & Biochemistry 4
- HLTH208 Principles of Human Nutrition 3
- HLTH209 Pharmacology 3
- HLTH232 Pathophysiology 3
- HLTH235 Healthcare Informatics 2
- MATH207 Principles of Statistical Methods 3
- PSYC101 Introduction to Psychology* 4
- PSYC155 Lifespan Development* 3
- SOCY101 Introduction to Sociology* 4
- USEM101 University Seminar I: Foundation Success 1

**Prerequisite courses for entrance to the program.*

General Electives (5 - 6 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Nursing, Post-Licensure Completion Program, Completion Program for RN Students

No applications are being accepted at this time for this degree

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 minimum cumulative grade point average of 2.7 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 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. Credit by departmental exam is also available to students upon request.

Required Admission Credentials:

Submit to Admissions Office: standard LSSU Application for Admission; transcripts from previous nursing school(s) and college(s). Submit to School of Nursing: copy of current Michigan or Ontario professional nursing license and immunization records. All credentials must be on file preceding semester of entry.

Transfer Credits:

Transfer credits may be granted on an individual basis for equivalent general education and support courses. Only those courses with a grade of C or better may be transferred. A maximum of 32 semester hours credit in basic nursing courses may be transferred. Credit for pharmacology courses is acceptable for five years.

The expectation is that completion of this program will take no more than two years.

Progression and readmission policies are detailed in the Nursing Student Handbook.

Students are responsible for transportation to clinical agencies and all 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 and Escanaba. For further course information contact the main campus School of Nursing at 906-635-2288.

Nursing (61 credits)

- NURS325 Nursing of Childbearing Families 5
- NURS326 Nursing of Children & Families 5
- NURS327 Adult Nursing I 8
- NURS328 Multicultural Approach to Health Care 3
- NURS352 Health Issues of Aging Populations 3
- NURS360 Professional Nursing Concepts 4
- NURS363 Individual/Family Assessment 5

- NURS431 Adult Nursing II 8
- NURS432 Nursing of Populations 5
- NURS433 Community Mental Health Nursing 5
- NURS434 Nursing Research 3
- NURS435 Management in Nursing 4
- NURS437 Nursing Leadership and Issues 3

Health Sciences (11 credits)

- HLTH208 Principles of Human Nutrition* 3
- HLTH209 Pharmacology* 3
- HLTH232 Pathophysiology 3
- HLTH235 Healthcare Informatics 2

Other Disciplines (28 credits)

- BIOL121 Human Anatomy & Physiology I* 4
- BIOL122 Human Anatomy & Physiology* 4
- BIOL223 Clinical Microbiology* 3
- CHEM108 Applied Chemistry* 3
- MATH207 Principles of Statistical Methods 3
- PSYC101 Introduction to Psychology* 4
- PSYC155 Lifespan Development* 3
- SOCY101 Introduction to Sociology* 4

**Prerequisite courses for entrance to the program.*

General Electives

**Credit by departmental exam (or NLN examination, passing at a 50 percentile or higher) is also available to students upon request. For further information, contact the main campus School of Nursing at 906-635-2288.*

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Parks and Recreation: Bachelor of Science

The bachelor of science degree in parks and recreation combines an associates degree in natural resources technology with additional course work relative to human resource management in the outdoor environment. Many jobs can be found in the public, private and commercial settings.

A one-semester internship is required for this degree.

Program Learning Outcomes:

Land Management Policy – The student will be able to discuss and explain the history and derivation of the policies, practice and protocols specific to recreation, of the federal agencies which manage landmasses for recreation either as a primary or secondary function.

Research - Graduates demonstrate professional competence and expertise through completion of an original research study, including a written a senior research thesis

and poster presentation.

Statistics - The graduate will be able to apply statistical procedures and analysis to concepts and issues in the field of Park and Recreation Management.

Recreation Planning - The graduate will demonstrate proficiency and competence in planning recreational activities in a variety of settings.

Facility Management and Outdoor/Adventure Education Leadership - The graduate will demonstrate leadership qualities, skills and competencies through the development of outdoor educational activities and programming.

Degree Requirements

Program Requirements (29 credits)

- RECS101 Introduction to Recreation 3
- RECS262 Outdoor Recreation 3
- RECS295 Recreation Practicum 1
- RECS360 Facilitation and Interpretation 3
- RECS362 Land Management for Recreation Purposes 3
- RECS365 Expedition Management 3
- RECS390 Recreation Leader Apprenticeship 1
- RECS397 Recreation Studies Junior Research Seminar 1
- RECS435 Research in Recreation and Leisure Sciences 3
- RECS437 Recreation Studies Senior Research Seminar 1
- RECS492 Recreation Internship 6

Cognate Requirements (67 - 69 credits)

- ACTG132 Principles of Accounting 4
- BIOL132 General Biology: Organisms 4
- BUSN231 Business Communications 3
- EVRN131 Introduction to GIS and GPS 3
- EVRN225 Intermediate GIS 3
- FIRE102 Wildland and Rural Fire Control 3
- MATH111 College Algebra 3
- MGMT365 Human Resource Management 3
- NRES107 Field Biology: Fish & Wildlife Identification 3
- NRES203 Fundamentals of Natural Resources 3
- NRES230 Introduction to Soil Science 4
- NRES284 Principles Forest Conservation 4
- NRES286 Principles of Watersheds 3
- NSCI103 Environmental Science 3
- NSCI104 Environmental Science Lab 1
- PSYC101 Introduction to Psychology 4
- PSYC210 Statistics 3
- SOWK480 Grantwriting 3

Complete one course from the following two:

- GEOL121 Physical Geology 4
- NSCI102 Great Lakes Region: Geology & Resources 4

Complete one course from the following two:

- CHEM108 Applied Chemistry 3
and
- CHEM109 Applied Chemistry Lab 1
or
- CHEM115 General Chemistry I 5

Complete one course from the following two:

- EMED188 Wilderness First Responder 2
- EMED189 Medical First Responder 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Political Science: Bachelor of Arts/Science

Political science is the systematic study of government, politics and public policy. It is one of a number of liberal arts majors that prepare students for a broad range of career opportunities.

Political science majors choose one of four tracks or concentrations: general political science, pre-law, public administration or historical and comparative politics. 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.

Program Learning Outcomes:

Critical Thinking: Students will demonstrate the ability to think critically and analytically about politics.

Communication: Students will communicate effectively, both orally and in writing, about political issues and theories.

World View: Students will discuss and analyze the world and contemporary political issues from perspectives other than their own.

Think Globally: Students will demonstrate the ability to think globally.

Analysis: Students will analyze domestic and international political events and behaviors through the use of political theories and concepts.

Available degrees (see specific degree requirements further down the page):

[Bachelor of Arts/Science Political Science-General](#)

[Bachelor of Arts/Science Political Science-Pre-Law](#)

[Bachelor of Science Political Science-Public Administration](#)

[Bachelor of Arts/Science Political Science-Historical and Comparative Politics](#)

Degree Requirements

Bachelor of Arts/Science Political Science--General

The general political science concentration is designed to provide a broad education in political science. It is most appropriate for students who plan to attend graduate school in political science and for those with an interest in government and politics who wish to get a broad, liberal education. 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

- POLI101 Freshman Seminar 2
- POLI110 Introduction to American Government and Politics 4
- **or**
- POLI160 Introduction to Canadian Government and Politics 3
- POLI202 Sophomore Seminar Political Research & Statistics 3
- POLI303 Junior Seminar 4
- POLI351 Political Philosophy 4
- POLI404 Senior Seminar I 2
- POLI405 Senior Seminar II 2

A minimum of one course in each of three political science fields, and two courses in one of the fields:

- American Politics (POLI301, POLI325, POLI367, POLI467) 3-4
- Comparative Politics (POLI234, POLI331, POLI334) 3-4
- International Relations (POLI241, POLI245, POLI342, POLI411, POLI413, POLI420) 3-4

Additional political science electives to reach 40 credits.

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

General Political Science Cognates

- COMM302 Argumentation and Advocacy 3
- **or**
- COMM320 Public Relations 4
- ECON201 Principles of Macroeconomics 3
- ENGL306 Technical Writing 3
- **or**
- ENGL221 Creative Writing 3
- HIST Full-year history sequence (HIST101-HIST102 or HIST131-HIST132) 8
- PHIL205 Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this

requirement.

General Education: All LSU bachelor's degree candidates must complete the LSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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

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

- POLI101 Freshman Seminar 2
- POLI110 Introduction to American Government and Politics 4
or
- POLI160 Introduction to Canadian Government and Politics 3
- POLI120 Introduction to Legal Processes 3
- POLI130 Introduction to State and Local Government 4
- POLI202 Sophomore Seminar Political Research & Statistics 3
- POLI222 Introduction to the Legal Profession 3
- POLI303 Junior Seminar 4
- POLI351 Political Philosophy 4
- POLI404 Senior Seminar I 2
- POLI405 Senior Seminar II 2
- POLI467 Constitutional Law and Civil Liberties 4

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

- Comparative Politics (POLI234, POLI331, POLI334) 3-4
- International Relations (POLI241, POLI245, POLI342, POLI411, POLI413, POLI420) 3-4

Additional political science electives to reach 42 credits

A minimum of 21 credits must be at the 300/400 level. (At least nine of these credits must be at the 400 level.)

Pre-Law Cognates

- ACTG132 Principles of Accounting I 4
- COMM302 Argumentation and Advocacy 3
- ENGL306 Technical Writing 3
or
- ENGL221 Creative Writing 3
- HIST Full-year history sequence (HIST101-HIST102 or HIST131-HIST132) 8
- LAWS102 Legal Research and Case Analysis 3
- LAWS202 Legal Writing and Analysis 3
- PHIL205 Logic 3

Two law courses in different disciplines from the following:

- BUSN350 Business Law I 3
- BUSN355 Business Law II 3
- CJUS250 Correctional Law 3
- CJUS319 Substantive Criminal Law 3
- CJUS409 Procedural Criminal Law 3
- EVRN311 Environmental Law 3
- INTB375 International Business Law 3
- MGMT451 Labor Law 4
- POLI301 Policy Analysis and Evaluation 3
- POLI342 International Environmental Policy 3
- POLI499 Political Science/Public Administration Internship 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Political Science--Public Administration

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

- POLI101 Freshman Seminar 2
- POLI110 Introduction to American Government and Politics 4
- **or**
- POLI160 Introduction to Canadian Government and Politics 3
- POLI130 Introduction to State and Local Government 4
- POLI201 Introduction to Public Administration 3
- POLI202 Sophomore Seminar Political Research & Statistics 3
- POLI301 Policy Analysis and Evaluation 3
- POLI303 Junior Seminar 4
- POLI351 Political Philosophy 4
- POLI401 Principles of Public Administration 3
- POLI404 Senior Seminar I 2
- POLI405 Senior Seminar II 2
- POLI499 Public Administration Internship 3

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

- Comparative Politics (POLI234, POLI331, POLI334) 3-4
- International Relations (POLI241, POLI245, POLI342, POLI411, POLI413, POLI420) 3-4

Public Administration Cognates

- ACTG132 Principles of Accounting I 4
- COMM302 Argumentation and Advocacy 3
- **or**
- COMM320 Public Relations 4
- ECON201 Principles of Macroeconomics 3
- ECON305 Public Finance 3
- ENGL306 Technical Writing 3
- **or**
- ENGL221 Creative Writing 3
- HIST Full-year history sequence (HIST101-HIST102 or HIST131-HIST132) 8
- MGMT360 Management Concepts & Applications 3
- MGMT365 Human Resource Management 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Arts/Science Political Science--Historical and Comparative Politics

The historical and comparative politics concentration is designed to provide a broad education in these areas of political science. It is most appropriate for students who plan to attend graduate school in political science or history and for those with an interest in working in the international community. 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 and History Courses

- POLI101 Freshman Seminar 2
- POLI110 Introduction to American Government and Politics 4
- **or**
- POLI160 Introduction to Canadian Government and Politics 3
- POLI202 Sophomore Seminar Political Research & Statistics 3
- POLI303 Junior Seminar 4
- POLI351 Political Philosophy 4
- POLI404 Senior Seminar I 2
- POLI405 Senior Seminar II 2
- HIST101 History of World Civilization I 4
- HIST102 History of World Civilization II 4

Area Studies-Europe:

- HIST315 Europe Napoleon World War I 4
or
- HIST316 Europe in the 20th Century 4
- POLI331 Comparative Politics of Europe 4

Issue Studies-International Relations:

- HIST250 The Atlantic World 3
- POLI241 Introduction to International Relations 4

Issue Studies-US Foreign Policy:

- HIST441 History American Foreign Policy 1776-1950 3
- POLI411 U.S. Foreign Policy 3

Additional political science or history electives to reach 40 credits. A minimum of 21 credits must be at the 300/400 level, with at least nine of these at the 400 level.

General Political Science Cognates

- COMM302 Argumentation and Advocacy 3
or
- COMM320 Public Relations 4
- ECON201 Principles of Macroeconomics 3
- ENGL306 Technical Writing 3
or
- ENGL221 Creative Writing 3
- PHIL205 Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Prelaw (non-degree)

There is essentially a three-step process in becoming a licensed attorney. First, an individual must complete an undergraduate degree at a college or university. Second, one must then go on to law school to obtain a juris doctorate degree. Finally, successful completion of the state bar exam is required for licensure. In being admitted into law school, the two most important factors that are evaluated by most law schools are undergraduate grades and Law School Admission Test (LSAT) scores — an entrance exam required of nearly all law schools in the United States and some in Canada.

The American Bar Association and most law schools do not recommend any particular undergraduate major before going on to law school. Consequently, a student should choose a major in which he/she has both interest and aptitude. Yet, there are important skills, values, and certain knowledge that can be acquired prior

to law school which will assist a student in being successful at law school. Such values and knowledge include: analytical and problem-solving skills, critical reading abilities, writing skills, oral communication and listening abilities, research skills, task organization and management skills, ethical values, and, of course, knowledge of the law. In fact, a prelaw minor is available at LSSU which consists of courses that will assist a prelaw student in further developing these skills, values and knowledge.

Since there is no required prelaw major, the American Bar Association and law schools strongly recommend that law school bound students contact the Prelaw Advisor at their university as early in the educational process as possible. At LSSU, our approach to advising prelaw students is very individualized. We want to help each student fulfill their goals and to be successful at law school and beyond.

The Prelaw Advisor at LSSU can provide individualized guidance with regard to selecting an undergraduate curriculum (both a major and a minor); recommending particular courses that will enhance necessary skills, values and knowledge; assisting in the law school admission process; and providing relevant career and professional trend information.

Degree Requirements

Although there is no recommended or required prelaw curriculum, there are some excellent options that students may want to consider at LSSU. The following LSSU programs include key components with regard to legal knowledge as well as writing, analytical and research skills:

- Political Science—Prelaw Concentration (major)
- Prelaw (minor)

Students should seek guidance from LSSU's Prelaw Advisor as early as possible to ensure they are individually counseled with regards to their respective interests, undergraduate curriculum choice, as well as personal and professional goals.

Pre-Medical

Pre-Pharmacy (transfer program)

Most pharmacy schools require students to take two years of pre-pharmacy preparation prior to being admitted to their four-year professional program. Admission into the professional pharmacy programs is very competitive and is based, to a large extent, on grades in specific required courses. Many pharmacy colleges also require applicants to take the Pharmacy College Admission Test (P.C.A.T.). This exam is generally taken mid-way through your second pre-pharmacy year.

Pre-pharmacy requirements vary greatly between different colleges that offer professional programs in pharmacy. In general, most require a pre-pharmacy program that emphasizes math and science as well as strong communication skills. Recently, a majority of the nation's schools began to move toward awarding the doctor of pharmacy (Pharm.D.) as the only professional degree in pharmacy. Because many pharmacy curricula are currently being modified, pre-pharmacy requirements are also subject to change.

The modifications in professional pharmacy curricula, combined with the variability in pre-pharmacy requirements, make it imperative for a pre-pharmacy student to determine the requirements for admission at the schools he or she desires to

attend. A pre-pharmacy curriculum at Lake Superior State University can then be designed to help you obtain your goals. It is your responsibility to contact the directors of admissions at the pharmacy schools to which you are planning to apply so you can remain informed of their most recent requirements for admission.

Degree Requirements

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.

Pre-Veterinary

-

Psychology: Bachelor of Arts/Science

Psychology is the scientific study of behavior and mental processes in humans and animals. This degree provides students with the knowledge and skills for a wide variety of careers.

Grounded in the American Psychological Association's Guidelines for the Undergraduate Major: Version 2.0, this comprehensive four-year program emphasizing research, experimentation, computer applications and a senior-research sequence is excellent preparation for graduate work at the master's or Ph.D. level in a wide variety of psychology disciplines.

Upon successful completion of the Junior Seminar in Psychological Science (PSYC399), psychology majors may elect to continue in the Psychology - Psychological Science concentration or switch to the Psychology - General Psychology concentration.

Other Qualifications — A master's degree in psychology is usually the minimum requirement for careers in school psychology, I/O psychology, mental health counseling, marriage and family counseling, forensic psychology, and data collection/analysis. 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.

Program Learning Outcomes:

Goal 1: Knowledge Base in Psychology - Students should demonstrate fundamental knowledge and comprehension of the major concepts, theoretical perspectives, historical trends, and empirical findings to discuss how psychological principles apply to behavioral problems.

Goal 2: Scientific Inquiry and Critical Thinking - The skills in this domain involve the development of scientific reasoning and problem solving, including effective research methods.

Goal 3: Ethical and Social Responsibility in a Diverse World - The skills in this domain involve the development of ethically and socially responsible behaviors for professional and personal settings in a landscape that involves increasing diversity.

Goal 4: Communication - Students should demonstrate competence in writing and in oral and interpersonal communication skills.

Goal 5: Professional Development - The emphasis of this goal is on application of psychology-specific content and skills, effective self-reflection, project-management skills, teamwork skills, and career preparation.

[Bachelor of Arts/Science Psychology, Psychological Science Concentration](#)
[Bachelor of Arts/Science Psychology, General Psychology Concentration](#)

Degree Requirements

Bachelor of Arts/Science Psychology, Psychological Science Concentration

Required Psychology Core Courses (27 credits)

- PSYC101 Introduction to Psychological Science 3
- PSYC199 Freshman Seminar in Behavioral Science 2
- PSYC210 Statistics 3
- PSYC212 Experimental Psychology 4
- PSYC396 Tests and Measurements 3
- PSYC399 Junior Seminar in Psychological Science 3
- PSYC456 History & Systems of Psychology 3
- PSYC494 Senior Research Practicum I 2
- PSYC495 Senior Research Practicum II 3
- PSYC499 Senior Seminar in Psychological Science 1

Elective Psychology Courses (18 credits)

Select One Course from each Content Area:

Biological

- PSYC459 Behavioral Neuroscience 4

Cognitive

- PSYC311 Learning and Motivation 4
- PSYC457 Cognition 4

Personality/Social

- PSYC217 Social Psychology 3
- PSYC357 Personality Theory 3

Developmental/Applied

- PSYC155 Lifespan Development 3

- PSYC240 Behavior Management 3
- PSYC259 Abnormal Psychology 3
- PSYC301 Exceptional Child and Adolescent 3
- PSYC385 Health Psychology 3

Practicum Experience

- PSYC305 Psychology Research Practicum 3
- PSYC306 Applied Psychology Practicum 3

PSYC Elective 300+ Level (3 credits)

Psychology Cognate

Select One Course From:

- BIOL105 Function of the Human Body 4
- BIOL122 Human Anatomy & Physiology II 4
- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4

Breadth Area Requirement

Psychology majors may select one of the following options:

Option 1: Complete an approved Minor (minimum of 20 credits) and does not include Minor: Psychology.

Option 2: Complete a Cognate of at least 20 credits in courses approved by the advisor.

Option 3: Complete an Associate degree that does not include a Psychology Minor or Behavioral Sciences Concentration.

Option 4: Complete a second BA/BS degree or major.

(For any of the above options, nine credits must be at the 300-400 Level.)

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

Bachelor of Arts degree: One year of a modern language other than English (if taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Arts/Science Psychology, General Psychology Concentration

Required Psychology Core Courses (27 credits)

- PSYC101 Introduction to Psychological Science 3

- PSYC155 Lifespan Development 3
- PSYC199 Freshman Seminar in Behavioral Science 2
- PSYC210 Statistics 3
- PSYC212 Experimental Psychology 4
- PSYC396 Tests and Measurements 3
- PSYC399 Junior Seminar in Psychological Science 3
- PSYC456 History & Systems of Psychology 3
- PSYC490 Research Topics in Psychology 3

Elective Psychology Courses (18 credits)

Select One Course from each Content Area:

Biological

- PSYC459 Behavioral Neuroscience 4

Cognitive

- PSYC311 Learning and Motivation 4
- PSYC457 Cognition 4

Personality/Social

- PSYC217 Social Psychology 3
- PSYC357 Personality Theory 3

Developmental/Applied

- PSYC240 Behavior Management 3
- PSYC259 Abnormal Psychology 3
- PSYC301 Exceptional Child and Adolescent 3
- PSYC385 Health Psychology 3

Practicum Experience

- PSYC305 Psychology Research Practicum 3
- PSYC306 Applied Psychology Practicum 3

PSYC Elective 300+ Level (3 credits)

Psychology Cognate

Select One Course From:

- BIOL105 Function of the Human Body 4
- BIOL122 Human Anatomy & Physiology II 4
- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4

Breadth Area Requirement

Psychology majors may select one of the following options:

Option 1: Complete an approved Minor (minimum of 20 credits) and does not include Minor: Psychology.

Option 2: Complete a Cognate of at least 20 credits in courses approved by the advisor.

Option 3: Complete an Associate degree that does not include a Psychology Minor or Behavioral Sciences Concentration.

Option 4: Complete a second BA/BS degree or major.

(For any of the above options, nine credits must be at the 300-400 Level.)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree: One year of a modern language other than English (if taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Robotics Engineering: Bachelor of Science

LSSU was the first university in the nation to institute an accredited B.S. degree program in Robotics Engineering Technology in 1985. Since the 1990s, robotics has been offered as a concentration or minor within LSSU's engineering and engineering technology degree programs. With the maturing of robotics technology, the B.S. degree program in Robotics Engineering was developed at LSSU to meet the demand for engineers to design and implement robotics systems for industrial automation. Students in the program will also be introduced to mobile robotics technology and its application in warehousing, military, health care, and human assistance.

Similar to other engineering programs, this Robotics Engineering program will build upon a solid foundation of courses in mathematics, sciences, English, humanities and the social sciences. In addition to the theoretical background presented in the program's courses by full-time faculty members in small class settings, the students will also have numerous opportunities to work hands-on in lab courses. They will have many opportunities to work with millions of dollars' worth of industry standard equipment including various types of industrial robots, PLCs vision systems, conveying systems, simulation software, end-of-arm tools, and sensors. This facility was recognized by the Technology Accreditation Commission of ABET as one of the most complete and advanced facilities of its kind in the country.

For several decades LSSU has been preparing graduates for industries involved in the design and implementation of automated systems for manufacturing. The demand for LSSU graduates with specialization in robotics has been well established over multiple decades. Industrial robotics and systems integration companies specifically seek out robotics engineering talent from LSSU. Over the years, this has resulted in substantially more job offers for the graduates (with nationally competitive salaries) than the number of graduates. Robotics Engineering graduates are employed in several types of industries involving manufacturing, autonomous vehicles, prosthetics design and build, or service robotics (hospitals, military, healthcare, rehabilitation, etc.).

There is an explosive growth in the application of robotics in the manufacturing industries and in the human service areas. LSSU will continue to successfully prepare graduates to meet the growing demand for technical talent in robotics.

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Robotics Engineering Core (81 credits):

- EGEE125 Digital Fundamentals 4
- EGEE210 Circuit Analysis 4
- EGEM220 Statics 3
- EGME141 Solid Modeling 3
- EGNR101 Introduction to Engineering 2
- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGNR265 "C" Programming 3
- EGNR340 Numerical Methods for Engineers 1
- EGNR490 Special Topics in Engineering 4
- EGRS215 Introduction to Robotics 2
- EGRS365 Programmable Logic Controllers 3
- EGRS372 Mobile Robotics 4
- EGRS385 Robotics Engineering 4
- EGRS430 System Integration and Machine Vision 4
- EGRS435 AUTomated Manufacturing System 3
- EGRS460 Control Systems 4
- CHEM115 General Chemistry I 5
- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH251 Calculus III 4
- MATH308 Probability and Mathematical Statistics 3
- MATH310 Differential Equations 3
- PHYS231 Applied Physics for Engineers and Scientists I 4
- PHYS232 Applied Physics for Engineers and Scientists II 4

Senior Year Experience (Complete one of the following sequences (6-13 credits):

Industrial Project

- EGNR491 Engineering Design Project I 3
- EGNR495 Engineering Design Project II 3

Cooperative Project

- EGNR250 Cooperative Education 2
- EGNR450 Cooperative Education Project I 4
- EGNR451 Cooperative Education Project II 3
- EGNR491 Engineering Design Project I 3

Research Project

- EGNR260 Engineering Research Methods 2
- EGNR460 Engineering Research Project I 4
- EGNR461 Engineering Research Project II 2

Technical Electives (6 credits minimum required):

- CSCI281 Intro to UNIX and Networking (or higher level CSCI) 3
- EGEE250 Microcontroller Fundamentals (or higher level EGEE) 4
- EGEM320 Dynamics 3
- EGET310 Electronic Manufacturing Processes 4
- EGME225 Mechanics of Materials (or higher level EGME) 3
- EGMT216 CAM with CNC Applications 3
- EGNR261 Energy Systems/Sustainability (or higher level EGNR) 3
- EGRS461 Design of Control Systems 4

Support Elective (3 credits minimum required):

- BUSN231 Business Communications (or higher level BUSN) 3
- CSCI201 Data Structures and Algorithms (or higher level CSCI) 4
- ECON302 Managerial Economics (or higher level ECON) 4
- EGME110 Manufacturing Processes 3
- MATH215 Fundamental Concepts of Mathematics (or higher level MATH) 3
- MGMT280 Introduction Management Information Systems 3 (or higher level MGMT) 3
- or coursework from the Technical Electives

Free Electives (4 credits minimum required)

General Education: All LSSU bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Secondary Education: Bachelor of Arts/Science

The Secondary Education program is highlighted by in-depth study in a subject major and a subject minor, extended field experience in secondary school settings, and focused development of the knowledge and skills critical for effective teachers. The program leads to a bachelor of arts or a bachelor of science degree in the student's major area.

Secondary-level teacher certification in Michigan permits individuals to teach the subject areas, in which they hold endorsements, at grades 6-12. The subject majors and minors provide the required coursework for the related endorsements.

Completing the coursework and passing the corresponding Michigan Test for Teacher Certification subject test enable graduates to meet the requirements of No Child Left Behind and to be highly qualified in their subject areas.

Subject major and minor options are listed below. Specific requirements for these are found in the appropriate sections of this catalog.

Majors

[Chemistry](#)
[English Language and Literature](#)
[Integrated Science](#)
[Mathematics](#)
[Social Science](#)

Minors

[Chemistry](#)
[English Language and Literature](#)
[Mathematics](#)

Students begin their studies in the secondary education program with a focus on general education requirements, an academic major and an academic minor. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major and minor, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or the fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification subject test in the major must be passed prior to beginning student teaching.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Secondary Education: Bachelor of Arts/Sciences programs are:

Academic Major: Choose one from the above (see requirements under the subject area in this catalog)

Optional Academic Minor: Choose one from list above (see requirements in the Minors section of this catalog)

Professional Education Sequence (35 credits)

- EDUC250 Student Diversity & Schools 4

- EDUC301 Learning Theory and Teaching Practice 3
- EDSE301 Introduction to Special Education 3
- EDUC350 Integrating Technology into 21st Century Learning Environments 3
- EDUC415 General Instructional Methods 2
- EDUC440 Reading in the Content Area 3
- EDUC44X or EDUC45X Methods in major and in minor (minimum credits) 3
- EDUC460 Classroom Management 2
- EDUC480 Directed Teaching: Seminar 2
- EDUC492 Directed Teaching 10

Education Cognates (4 credits)

- EDUC101 Self as Learner 1
- MATH207 Principles of Statistical Methods 3

Formal admission to the program, qualification for student teaching, and successful completion of the program requires the following:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher
- Completion of all required courses in the education cognates, teaching major and teaching minor with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Secondary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All bachelor's degree candidates must complete the [LSSU General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252; or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Social Science: Bachelor of Arts/Science

The social science degree equips students with the knowledge and skills necessary to be effective citizens and to have rewarding careers in a wide range of employment settings, in both the public and private sectors.

The **Academic Minor** option provides students with the opportunity to complete an additional set of courses within a discipline of interest and relevance to their career goals.

The **Secondary Teaching Concentration** leads to a Michigan secondary (grades 6 -

12) teaching certificate with a Social Studies endorsement.

Program Learning Outcomes:

Historical Movements - Students will be able to synthesize major historical movements and their impact on democratic thought and participation.

Environment - Students will discuss the impact of humans on our environment and how our environment impacts our choices and behaviors.

Political System - Students will be able to communicate the complexities of the American political system through a discussion of how it is affected by the world political system and how it in turn affects the global political system.

Global Economy - Students will apply knowledge about global and personal economic decisions to encourage students to understand the interconnected nature of a global economy.

Civic Responsibility - Students demonstrate democratic values and civic responsibility through an understanding of social science research methods and the ability to see current issues as developments from our shared history.

Instructional Choices (for Sec. Teaching Conc.) - Students will make instructional choices that consider historical perspectives and developments that highlight the interconnected nature of economics, geography, and political science.

Degree Requirements

Economics:

- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3

Geography:

- GEOG201 World Regional Geography 4
- GEOG306 Cultural Geography 4

History:

- HIST101 History of World Civilization I 4
- HIST102 History of World Civilization II 4
- HIST131 United States History I 4
- HIST132 United States History II 4
- HIST250 The Atlantic World 3
- HIST316 Europe in 20th Century 4
- HIST321 Michigan History 2

Political Science:

- POLI110 Introduction to American Government and Politics 4
- POLI241 Introduction to International Relations 4
- POLI367 Congress and the Presidency 4

Methods and Research:

- POLI202 Soph Seminar Political Research and Statistics 3
- HIST296 Historical Methods 2

- HIST497 Senior Seminar in History 2

Minor or Concentration - Complete one of the following:

Academic Minor: Select an approved minor, to be completed with a minimum of 20 credits as listed in the catalog. The Academic Minor may not be History or Political Science. Complete Social Science Cognates.

Secondary Teaching Concentration: Complete Professional Education Sequence and Education Cognates - See [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be CHIN151-CHIN152 or CHIN251-CHIN252; FREN151-FREN152 or FREN251-FREN252 or SPAN161-SPAN162. One-half year of two different languages will not meet this requirement.

Academic Minor Option: A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major and Minor as well as in your General Education Requirements.

Secondary Teaching Concentration option: A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Aquaponics Entrepreneurship

The associate of applied science degree in Aquaponics Entrepreneurship covers content in aquaponics, engineering/automation and business; three essential needs areas for the aquaponics industry. Aquaponics includes an understanding of how to keep plants and aquatic organisms alive, including basic biology, water quality, nutrition, and an introduction to system designs. The engineering component addresses system automation, as well as an independent study to understand aquaponics systems, pumps, power tools, etc. The business component includes accounting and marketing skills, as well as an independent study/internship in entrepreneurship, skills that are essential to a successful aquaponics business.

Program Learning Outcomes:

At the end of the program, students will be able to recall and apply principles of:

The basic biology and water quality (chemistry and microbiology) of aquaponics especially as applied to the production of healthy plants.

Operation and maintenance of the equipment, and sustainable energy design components of aquaponics systems.

Operating an economically sustainable aquaponics business through an understanding of business planning, marketing, and accounting.

Degree Requirements

Degree Requirements (57 credits):

- ACTG132 Principles of Accounting I 4
 - BIOL104 Survey of General Biology 4
- or**

- BIOL132 General Biology II: Organisms 4
- BIOL232 Introduction to Aquaponics 4
- BIOL235 Introduction to Protected Horticulture 3
- BIOL290 Independent Study in Aquaponics 4
- BUSN121 Introduction to Business 3
- BUSN299 Internship in Entrepreneurship (SAS) 2
- BUSN389 Entrepreneurship 3
- BUSN Business Elective 3
- CHEM108 Applied Chemistry 3
- CHEM109 Applied Chemistry Lab 1
- CSCI105 Introduction to Computer Programming 3
- CSCI163 Troubleshooting and Repair of Personal Computers 3
- EGRS215 Introduction to Robotics 2
- EGNR261 Energy Systems/Sustainability 3
- MATH111 College Algebra 3
- MRKT281 Marketing Principles and Strategy 3

Free Electives to total 62 credits

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Cannabis Science

The associate in Cannabis Science equips graduates with the skills necessary to gain employment in the emerging cannabis markets in Michigan, the United States, and beyond. Cannabis Science graduates earn over 400 hours of hands-on laboratory experience to prepare them for a career as technician in the cannabis field. Cannabis science technicians perform laboratory extractions, preparations and analytical testing. This degree may also lead to a BS in Cannabis Chemistry. The chemistry program at Lake Superior State University is approved by the American Chemical Society.

Program Learning Outcomes:

Interpret and discuss basic cannabis chemistry.

Demonstrate lab knowledge and skills.

Employ chemical instrumentation skills.

Practice communication skills.

Apply information retrieval skills.

Embrace and use safe chemical practices.

Degree Requirements

Chemistry (26 credits)

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CCHM120 Cannabis Chemistry I 1

- CHEM208 Survey Organic Chemistry 4
- CHEM231 Quantitative Analysis 4
- CCHM240 Cannabis Plant Sample Prep 2
- CCHM245 Cannabis Chemistry II 1
- CHEM332 Instrumental Analysis 4

Support Courses (7 credits)

- USEM101 University Seminar Foundation Success 1
- MATH111 College Algebra 3
- BUSN211 Business Statistics 3
- or**
- MATH207 Principles of Statistical Methods 3

Biology Courses (15 credits)

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL204 General Microbiology 4
- BIOL235 Intro to Protected Horticulture 3

Free Electives (5 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Chemistry

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.

This degree program may also lead to a BS in Chemistry, Environmental Chemistry, Forensic Chemistry, Biochemistry Pre-Professional, or Environmental Science that may be certified by the American Chemical Society.

Program Learning Outcomes:

The Chemistry Associate Degree Graduate will demonstrate proficiency in their discipline.

The Chemistry Associate Degree Graduate will demonstrate readiness for advanced coursework in chemistry.

The Chemistry Associate Degree Graduate will demonstrate an operational knowledge of basic chemical instrumentation as used in chemical analysis.

Degree Requirements

Chemistry (26 credits)

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5

- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4
- CHEM326 Organic Chemistry II 4
- CHEM332 Instrumental Analysis 4

Other Departments (19 credits)

- BUSN211 Business Statistics 3
- or**
- MATH207 Principles of Statistical Methods 3
- MATH151 Calculus I 4
- MATH152 Calculus II 4
- Two semesters of College Physics (8 cr min)

Free Electives (8 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Computer Science

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 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.

Program Learning Outcomes:

Design and develop computer programs to meet specifications given to them. (*Design*)

Assist in analyzing, implementing, and integrating appropriate solutions for networking, database, and coding to applications and systems frameworks. (*Implementation*)

Use current software technologies and accepted best practices in software and systems design to help solve business and industrial problems. (*Best Practices*)

Communicate technical information relative to problems and solutions to professionals in the field. (*Communication*)

Degree Requirements

Departmental Courses (33 credits)

- CSCI103 Survey of Computer Science 3
- CSCI105 Intro. to Computer Programming 3
- CSCI121 Principles of Programming 4
- CSCI163 Troubleshooting/Repair of Personal PCs 3
- or**
- CSCI415 Computer Organization and Architecture 3
- CSCI201 Data Structures and Algorithms 4
- CSCI211 Database Applications 3

- CSCI221 Computer Networks 3
- CSCI291 Computer Science Project 4
- MATH111* College Algebra 3
- MATH207 Principles of Statistical Methods 3

Support Courses (3 credits)

- BUSN121 Introduction to Business 3

Free Electives (8 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your General Education Requirements. A gpa of 2.50 or higher is required in the Major.

**May be used for general education credit.*

Criminal Justice-Corrections

The associate degree in corrections will prepare you to work in correctional facilities as corrections officers. Students who have 15 credits in Corrections, Criminal Justice, Psychology, Sociology, Educational Psychology, Family Relations, Guidance and Counseling, Pastoral Counseling, Social Work or Law Enforcement meet the education requirements for a corrections officer with the Michigan Department of Corrections.

Associate 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.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (27 credits)

- CJUS101 Intro. to Criminal Justice 3
- CJUS110 Introduction to Corrections 3

- CJUS220 Institutional Corrections 3
- CJUS240 Community Based Corrections 3
- CJUS319 Substantive Criminal Law 3
- CJUS321 Ethical Issues in Public Safety 3
- POLI120 Introduction to Legal Process 3
- PSYC240 Behavior Management 3

Select one of the following two:

- CJUS140 Criminological Theory and Correctional Client Growth 3
- or**
- SOCY214 Criminology 3

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Criminal Justice-Homeland Security

This emphasis provides students with the knowledge and information related to careers in law enforcement and investigation with agencies such as Customs and Border Protection (CBP), Department of Homeland Security (DHS), Immigration and Customs Enforcement (ICE), municipal, county and/or state emergency management, Environmental Protection Agency (EPA), Internal Revenue Service, Transportation Security Administration (TSA), US Secret Service and numerous other agencies. Students are strongly encouraged to continue their studies to complete a Bachelor's degree to be successful in today's competitive labor market.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Departmental Requirements (18 credits)

- CJUS101 Introduction to Criminal Justice 3
- CJUS103 Introduction to Terrorism and Homeland Security 3
- CJUS203 Cyberterrorism 3
- CJUS204 Domestic and International Terrorism 3

- CJUS243 Investigation 3
- FIRE101 Introduction to Fire Science 3

Complete one of the following two options:

Generalist Concentration (21 Credits) chosen from list. Must include at least 6 credits in Criminal Justice:

- CJUS302 Hate Crimes 3
- CJUS303 Critical Infrastructure Protection 3
- CJUS313 Crisis Intervention and Deviant Behavior 3
- CJUS319 Substantive Criminal Law 3
- CJUS321 Ethical Issues in Public Safety 3
- CJUS325 Homeland Security and Emergency Services 3
- CJUS384 International and Comparative Criminal Justice Systems 3
- CJUS484 Futures Research 4
- EVRN131 Introduction to GIS & GPS 3
- FIRE102 Wildlife and Rural Fire Control 3
- FIRE111 Hazardous Materials 3
- FIRE312 Hazardous Materials Management 4
- FIRE315 Company Level Supervision and Management 3
- NSCI102 Introduction to Geology 4
- NSCI103/104 Environmental Science and Lab 4
- POLI120 Introduction to Legal Processes 3
- POLI130 Introduction to State and Local Government 4
- POLI201 Introduction to Public Administration 3
- POLI241 Introduction to International Relations 4
- PSYC259 Abnormal Psychology 3

Certification Concentration (19 Credits) Note: Requires Admission to MCOLES academy - courses are taken in final spring and summer:

- CJUS197 Physical Fitness for Public Safety 1 (Fall)
- CJUS197 Physical Fitness for Public Safety 1 (Spring)
- CJUS201 Firearms Training 1
- CJUS301 Advanced Firearms 1
- CJUS409 Procedural Criminal Law 3
- CJUS411 Police Operations 5
- CJUS444 Criminalistics 4
- CJUS450 Skills Academy 2
- EMED189 Medical First Responder 3

MCOLES Academy Admissions Requirements:

- Age 21 minimum
- U.S. Citizen
- Resident of Michigan
- Valid MI Drivers Licenses
- Complete and pass Reading and Writing test as prescribed by MCOLES (National Standardized screening test)
- Meet MCOLES physical fitness entrance standards within 120 prior to start
- Meet MCOLES health and vision minimum standards
- Successfully pass the entrance interview and background screen
- No Felony convictions
- Honorable discharge from Military with 2 years full-time duty service as a

military police officer within 2 years of discharge with a minimum placement at the B-Band on the MCOLES reading and writing pre-screening test or meet the MCOLES minimum education standard of Associates degree (62 semester credits minimum)

Students apply for admission in the fall for the academy sequence that runs from January-June.

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Criminal Justice-Law Enforcement

The associate degree in law enforcement will prepare you for work in local law enforcement agencies provided you attend a police academy after graduation. This associate degree is also compatible with the bachelor of science degree in criminal justice/law enforcement. Graduates may also find positions with private security agencies.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (13 credits)

- CJUS101 Intro. to Criminal Justice 3
- CJUS102 Police Process 3
- CJUS201 Firearms Training 1
- CJUS206 Law Enforcement/Loss Control Internship 3
- CJUS243 Investigation 3

Complete one of the following two options:

Generalist Concentration (21 Credits):

- CJUS203 Cyberterrorism 3
- CJUS212 Loss Control 3

- CJUS313 Crisis Intervention Deviant Behavior 3
- CJUS Electives 6
- POLI120 Introduction to Legal Process 3
- CJUS140 Criminological Theory and Correctional Client Growth 3
or
- SOCY214 Criminology 3

Certification Concentration (19 Credits) Note: Requires Admission to MCOLES academy - courses are taken in final spring and summer:

- [CJUS197](#) Physical Fitness for Public Safety 1 (Fall)
- CJUS197 Physical Fitness for Public Safety 1 (Spring)
- [CJUS201](#) Firearms Training 1
- CJUS301 Advanced Firearms 1
- [CJUS409](#) Procedural Criminal Law 3
- [CJUS411](#) Police Operations 5
- [CJUS444](#) Criminalistics 4
- CJUS450 Skills Academy 2
- [EMED189](#) Medical First Responder 3

MCOLES Academy Admissions Requirements:

- Age 21 minimum
- U.S. Citizen
- Resident of Michigan
- Valid MI Drivers Licenses
- Complete and pass Reading and Writing test as prescribed by MCOLES (National Standardized screening test)
- Meet MCOLES physical fitness entrance standards within 120 prior to start
- Meet MCOLES health and vision minimum standards
- Successfully pass the entrance interview and background screen
- No Felony convictions
- Honorable discharge from Military with 2 years full-time duty service as a military police officer within 2 years of discharge with a minimum placement at the B-Band on the MCOLES reading and writing pre-screening test or meet the MCOLES minimum education standard of Associates degree (62 semester credits minimum)

Students apply for admission in the fall for the academy sequence that runs from January-June.

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Early Childhood Education

Lake Superior State University offers an associate degree in early childhood education for students wishing to meet the state standards for highly qualified paraprofessionals for public schools, assistant teachers for state-funded preschools and federally-funded HeadStart programs, and for caregivers in infant-toddler Early HeadStart. Field experience integrated with coursework provide opportunities for more in-depth learning and understanding of developmentally appropriate practices and effective interactions with young children. Students earning an associate

degree in early childhood education can easily transition to the bachelor degree program when they are interested in expanding their qualifications.

Program Learning Outcomes:

Candidates demonstrate their content area knowledge in the design, implementation, and evaluation of experiences that result in developmental and learning outcomes for each child.

Candidates apply their knowledge and understanding of young children's developmental needs to create healthy, respectful, supportive, and challenging learning environments for each child.

Candidates demonstrate knowledge of systematic observations, documentation, and assessment strategies through the effective use of these techniques to promote positive outcomes for each child.

Candidates value the important and complex characteristics of children's families in their development of respectful, reciprocal relationships and the involvement of families in their children's development and learning.

Candidates demonstrate professional dispositions throughout coursework, field experience, and practicums.

Candidates integrate knowledge of ethical standards and other early childhood professional guidelines in advocating for sound educational practices and policies.

Degree Requirements

Degree Requirements (36 credits)

- CHLD101 Foundation of Early Childhood Education 4
- CHLD103 Learning Environments for the Young Child 4
- CHLD150 Observation and Assessment 4
- CHLD210 Infants and Toddlers 4
- CHLD225 Emergent Literacy 3
- CHLD241 STEM Foundations for the Young Child 4
- CHLD242 Creativity & Humanities 4
- CHLD245 Early Childhood Curriculum 3
- CHLD260 Practicum I 4
- CHLD270 Administration of Early Childhood Programs 2

Cognate Requirements (12 credits):

- EDUC101 Self as Learner 1
- BIOL105 Function of the Human Body 4
- EMED181 First Aid 1
- HLTH104 Nutrition for Early Childhood 3
- SOCY103 Cultural Diversity 3

Free Electives (minimum 3 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Electrical Engineering Technology

LSSU's Electrical Engineering Technology (EET) Associate's program integrates knowledge from areas of study such as science, math, computers, and electrical engineering to prepare you for an engineering technology career.

The EET program includes topics such as C programming, robotics, digital and microcontroller fundamentals. Most technical classes in the curriculum include a laboratory along with the lecture.

Program Learning Outcomes:

Apply written communication in technical environments

Describe and analyze circuits and other electrical systems and explain their use

Use computers, electronic instrumentation and coding to analyze, synthesize and solve problems in engineering

Degree Requirements

Engineering and Engineering Technology Courses (26 credits)

- EGEE125 Digital Fundamentals (C or better required) 4
- EGEE250 Microcontroller Fundamentals 4
- EGET110 Applied Electricity (C or better required) 4
- EGET175 Applied Electronics (C or better required) 4
- EGME141 Solid Modeling 3
- EGNR101 Introduction to Engineering 2
- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGNR265 C Programming 3

Mathematics and Science Courses (22 credits)

- CHEM108 Applied Chemistry 3
- CHEM109 Applied Chemistry Lab 1
- MATH111 College Algebra (C or better required) 3
- MATH112 Calculus for Business and Life Science 4
- MATH131 College Trigonometry 3
- PHYS221 Elements of Physics I (C or better required) 4
- PHYS222 Elements of Physics II 4

Free Elective * (5 credits)

General Education: All LSSU Associate's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

** General Education approved Humanities, Social Science, or Cultural Diversity elective is recommended for those students intending to pursue a BS-EET degree.*

Fire Science

The associate degree in fire science 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.

Program Learning Outcomes:

Students successfully completing this program will be able to:

Demonstrate professional-level knowledge, skills and abilities needed to perform as an emergency response practitioner.

Identify and employ appropriate professional ethical standards in the field.

Use professional-level critical thinking, technical writing, and verbal communication skills associated with public and private fire service interactions.

Degree Requirements

Major Requirements (24 credits)

- CJUS341 Fire Cause & Arson Investigation 3
- FIRE101 Introduction to Fire Science 3
- FIRE111 Hazardous Materials 3
- FIRE201 Fire Protection Construction Concepts 3
- FIRE204 Fire Protection Hydraulics & Pumps 3
- FIRE206 Fire Protection Systems Equipment and Industrial Fire Protection 3
- FIRE211 Tactics & Strategy 3
- FIRE315 Company Level Supervision and Management 3

Support Courses (8 credits)

- EMED190 Prehospital Emergency Care & Crisis Intervention I 4
- EMED191 Prehospital Emergency Care & Crisis Intervention II 4

Electives to total 62 credits

(FIRE197, FIRE219 and FIRE220 required for MFFTC certification)

General Education: All LSSU Associate’s degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

General Engineering

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.

Program Learning Outcomes:

Communicate in a technical environment

Analyze electrical and/or mechanical systems by applying math, science, and/or engineering equations and techniques

Use technical tools to solve engineering problems

Degree Requirements

Departmental Requirements

Engineering Courses (21 credits)

- EGEE210 Circuit Analysis 4
- EGEM220 Statics 3
- EGNR101 Intro. to Engineering 2
- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGNR265 "C" Programming 3
- EGNR340 Advanced Numerical Methods for Engineers 1
- Approved Technical Electives (see advisor for details) 6

Mathematics and Science Courses (28 credits)

- CHEM115 General Chemistry I 5
- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH251 Calculus III 4
- MATH310 Differential Equations 3
- PHYS231 Applied Physics for Engineers and Scientists I 4
- PHYS232 Applied Physics for Engineers and Scientists II 4

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

**Engineering course qualifies as General Education course*

General Engineering Technology

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.

Program Learning Outcomes:

Communicate in a technical environment

Analyze electrical and/or mechanical systems by applying math, science, and/or engineering equations and techniques

Use technical tools to solve engineering problems

Degree Requirements

Departmental Requirements

Engineering and Engineering Technology Courses (25 credits)

- EGME141 Solid Modeling 3
- EGNR101 Introduction to Engineering 2

- EGET110 Applied Electricity 4
- Technical Electives 16

Choose at least nine credits of additional EGxx Courses. Choose seven additional Technical Electives from PHYS222 Elements of Physics II, any MATH course, MATH151 or higher.

Mathematics and Science Courses (21 credits)

- CHEM108 Applied Chemistry 3
- CHEM109 Applied Chemistry Lab 1
- MATH111 College Algebra 3
- MATH112 Calculus for Business and Life Science 4
- MATH131 Trigonometry 3
- MATH207 Principles of Statistical Methods 3
- PHYS221 Elements of Physics I 4

Support Course

- CSCI101 Intro. to Microcomputer Applications 3

Electives (4 credits)

General Education: All LSSU Associate's degree candidates must complete the [LSSU General Education Requirements](#).

(General Education Electives met by CHEM108, CHEM109, and PHYS221 listed above)

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

General Studies

The Associate of General Studies degree (AGS) is a progressive and innovative degree program designed as the foundation to many bachelor's degree programs at the University. Attainment of the degree indicates proficiency in the broad range of knowledge and skills which are foundational to continued postsecondary education. Graduates of this degree will have developed broad competencies through a series of foundation courses comprising the University general education curriculum which is the basis of this degree, as well as the basis of the bachelor's degree.

Graduates will have satisfied the requirements for the Michigan Transfer Agreement (MTA) to facilitate transfer students who begin their program at LSSU, but wish to complete academic programs at other Michigan Universities in disciplines not available at LSSU. Finally, graduates will also demonstrate appropriate depth of knowledge through additional courses in a selected academic concentration suitable for continued study leading to a bachelor's degree.

Completion of educational milestones is known to correlate strongly to student success and achievement of long-term educational goals. Examples of milestones include completion of one year of college-level credits, completing the general education requirements and earning a certificate or degree. The Associate of General Studies is confirmation of the graduate's achievements in the first two years of university, preparing the individual for immediate employment through broad exposure to the liberal arts and sciences, and building toward the bachelor's degree for those who seek to continue their education.

Program Learning Outcomes:

Formal Communication: Students will be able to clearly express ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will be able to gather and process evidence to answer questions or solve problems within the content of their chosen studies.

Analysis and Synthesis: Students will be able to synthesize evidence, ideas, or works of imagination to answer questions or create an appropriate end-product within their chosen studies.

Professional Responsibility: Students will be able to apply ethical concepts and intercultural awareness when answering questions, solving problems, or completing assigned tasks related to their chosen studies.

Degree Requirements

General Education Requirements. Complete the Bachelors degree General Education Requirements.

Concentration: Complete at least 20 credits in a defined academic concentration. Concentrations must include at least 10 credits in LSSU courses. A minimum of a C or higher is required in each course.

Academic Concentrations:

- Behavioral Sciences - Courses with SOCY, PSYC and SOWK prefixes
- Business - Courses with ACTG, BUSN, ECON, FINC, INTB, MGMT and MRKT prefixes
- Communication - Courses with COMM prefixes
- Computational Sciences - Courses with MATH and CSCI prefixes
- Education - Courses with CHLD, EDUC and EDSE prefixes
- Emergency Services - Courses with CJUS, FIRE and EMED prefixes
- Engineering - Courses with EGEE, EGET, EGME, EGEM, EGMT, EGNR and EGRS prefixes
- Fine Art - Courses with ARTS, DANC, FINE, MUSC and THEA prefixes
- Health Assoc - Courses with EMED, HLTH, KINS, NURS, PNUR and RECS prefixes
- Humanities and Philosophy - Courses with HUMN and PHIL prefixes
- Modern Language and Literature - Courses with ENGL, FREN and SPAN prefixes
- Natural Science - Courses with BIOL, CHEM, EVRN, GEOL, NSCI and PHYS prefixes
- Social Sciences - Courses with ECON, GEOG, HIST and POLI prefixes

General Education: All LSSU Associate's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Geospatial Technology

Completion of this program will provide students with a credential that is in high demand in many different disciplines/industries. The program provides a well-rounded suite of skills including: field-based primary data collection using a variety of survey and global positioning devices; hands-on experience with a variety of geographic information systems including ESRI's suite of tools; the basics of geospatial analysis; and advanced skill development in interpretation of remote

sensing data and aerial photographs, spatial statistics, and geospatial programming. Students may pursue this program in the context of their major by completing discipline specific projects in the GIS courses and a required minor.

Program Learning Outcomes:

Students completing Associates Degree in Geospatial Technology will be able to:

Collect primary data in the field using ground-based and remote sensing methods, and compile and integrate secondary data for spatial analysis.

Manage spatial data from various sources utilizing tools, models, and programming code to develop spatial analysis workflows in the investigation of real-world problems.

Utilize state of the art geospatial tools to perform spatial analyses and visualizations that effectively, concisely, and ethically represent geospatial data.

Map natural and human-induced spatial processes and interpret statistically driven cause-and-effect relationships to complete individual and collaborative geospatial projects.

Effectively communicate methodologies and outcomes of data and literature-based geospatial projects through oral, written, and graphic media.

Degree Requirements

Geospatial Technology Core Requirements (28-32 credits):

- EVRN131 Introduction to GIS and GPS 2
- EVRN225 Intermediate GIS 3
- EVRN325 Geospatial Analysis 3
- EVRN355 GIS Programming and Applications 4
- EVRN365 Applied Geospatial Technologies 4
- EVRN445 Remote Sensing and Spatial Statistics 4
- CSCI105 Introduction to Computer Programming 3

Complete one course from the following four:

- NRES284 Principles of Forest Conservation 4
- EVRN211 Field Data Methods 1
- GEOL308 Structural Geology Systems 4
- RECS365 Expedition Management 3

Complete one course from the following four:

- BIOL280 Biostatistics 3
- BUSN211 Business Statistics 3
- MATH207 Principles of Statistical Methods 3
- PSYC210 Statistics 3

Complete one of the following Minors:

- Biology
- Computer Science
- Environmental Policy
- Environmental Science
- General Business

- Geography
- Geology
- Homeland Security
- International Business
- Marketing
- Marine & Freshwater Science
- Political Science
- Public Administration
- Sociology

Other minors approved by student's Geospatial Technology advisor.

Free Electives to total 62 credits

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Health/Fitness Specialist

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 Health/Fitness Instructor. Students develop fitness assessment skills with current technologies employed for anthropometric, cardiovascular and metabolic functioning.

Program Learning Outcomes:

Physical Activity in Health, Wellness, and Quality of Life: Graduates will design individual level programs that promote physical activity, health, and improve quality of life.

Scientific Foundations of Kinesiology: Graduates will critically utilize scholarly material and apply an evidence based solution to a current problem in Kinesiology.

Cultural, Historical, Philosophical Dimensions of Kinesiology: Graduates will critically evaluate and organize scholarly material to present philosophical dimensions of physical activity.

Professional Development in Kinesiology: Graduates will analyze the discipline and sub-disciplines of Kinesiology selecting and describing an area of concentration.

Technical Competency in Kinesiology: Graduates will be able to demonstrate technical competency in the evaluation of exercise and physical activity.

Degree Requirements

Program Requirements (27 Credits)

- KINS101 Foundations in Kinesiology 3
- KINS105 Program Development and Leadership 3
- KINS140 Health and Fitness 3
- KINS141 Introduction to Movement 3

- KINS262 Exercise Physiology 3
- KINS265 Personal Fitness Training 3
- KINS268 Fitness Evaluation I: Func Assessment 3
- KINS275 Nutrition for Sport and Exercise Performance 3
- KINS295 Facility & Program Operations 3

Cognate Requirements (16 Credits)

- BIOL121 Human Anatomy & Physiology I 4
- BIOL122 Human Anatomy & Physiology II 4
- CHEM108 Applied Chemistry 3
- CHEM109 Applied Chemistry Lab 1
- PSYC101 Introduction to Psychology 4

General Electives (10 Credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Core Requirements.

Internet/Network Specialist

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.

Program Learning Outcomes:

Assist in the analysis of security monitoring, intrusion detection, and troubleshooting techniques and methodologies in a networked operating environment. (*Security and Monitoring*)

Use current hardware and OS technologies and accepted best practices in network design to help solve business and industrial problems. (*Best Practices*)

Communicate technical information relative to problems and solutions to professionals in the field. (*Communication*)

Degree Requirements

Departmental Courses (31 credits)

- CSCI103 Survey of Computer Science 3
- CSCI105 Intro. to Computer Programming 3
- CSCI106 Web Page Design and Development 3
- CSCI163 Troubleshooting and Repair of Personal Computers 3
- CSCI211 Database Applications 3

- CSCI221 Computer Networks 3
- CSCI248 Network Operating Systems I 3
- CSCI263 Managing Computer Security 3
- CSCI281 Intro. to UNIX and Network Programming 3
- CSCI292 Computer Networking Project 4

Support Courses (6 credits)

- BUSN121 Introduction to Business 3
- BUSN231 Business Communications 3

Free Electives (7 credits)

General Education: All LSSU Associate’s degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Liberal Arts

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

Program Learning Outcomes:

Formal Communication: Students will be able to clearly express ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will be able to gather and process evidence to answer questions or solve problems within the content of their chosen studies.

Analysis and Synthesis: Students will be able to synthesize evidence, ideas, or works of imagination to answer questions or create an appropriate end-product within their chosen studies.

Professional Responsibility: Students will be able to apply ethical concepts and intercultural awareness when answering questions, solving problems, or completing assigned tasks related to their chosen studies.

Degree Requirements

General Education Requirements: Complete the Bachelor's degree General Education Requirements.

Minor: Complete minor chosen from approved [LSSU minors](#). The department offering your minor will both advise you and conduct your degree audit before graduation.

General Education: All LSSU Associate’s degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Manufacturing Engineering Technology

The manufacturing engineering technology associate’s degree program prepares

you to work with traditional and modern manufacturing equipment and methods in today's high-tech manufacturing environment. Graduates will have theoretical and practical knowledge in traditional manufacturing processes such as turning, milling, foundry and welding along with newer technologies such as robotics, CAD (computer-aided drafting), and CAM (computer-aided manufacturing).

Throughout the program, students acquire cross-disciplinary skills in manufacturing, computer applications, electronics and mechanical technology that are in high demand in industry.

Program Learning Outcomes:

Communicate in a technical environment

Analyze mechanical systems by applying math, science, and/or engineering equations and techniques

Use technical tools to solve engineering problems

Degree Requirements

Departmental Requirements (52 Credits)

Engineering and Engineering Technology Courses (35 credits)

- EGEE125 Digital Fundamentals 4
- EGNR101 Introduction to Engineering 2
- EGNR265 "C" Programming 3
- EGET110 Applied Electricity 4
- EGET175 Applied Electronics 4
- EGME110 Manufacturing Processes I 3
- EGME141 Solid Modeling 3
- EGME240 Assembly Modeling and GD&T 3
- EGMT225 Statics and Strength of Materials 4
- Technical Elective 2
- Electives 3

Mathematics and Science Courses (17 credits)

- MATH111 College Algebra 3
- MATH131 College Trigonometry 3
- CHEM108 Applied Chemistry 3
- CHEM109 Applied Chemistry Lab 1
- MATH207 Principles of Statistical Methods* 3
- PHYS221 Elements of Physics I* 4

Electives (3 credits)**

Technical Electives:

- EGEE250 Microcontroller Fundamentals 4
- EGME310 Vehicle Development and Testing 2
- EGNR250 Cooperative Education 2
- EGRS215 Introduction to Robotics 2

**The math, chemistry and physics courses satisfy the general education and departmental requirements.*

***A social science course is recommended for those students intending to continue for the B.S. degree in Manufacturing Engineering Technology.*

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Natural Resources Technology

The natural resources technology program stresses the acquisition of field skills necessary for success in a natural resources agency or organization, as well as the theoretical foundations for these skills. This practical knowledge is enriched by course materials which emphasize communication skills along with the links between society, economics, policy and the natural resource base. This program can be taken as a stand alone two-year program, can constitute the first half of the bachelor of science in parks and recreation management, or it can be used in conjunction with a three-year criminal justice program to prepare a student for a career in conservation law.

All natural resource technology students are strongly encouraged to participate in at least one summer of work or volunteer experience in the natural resource field to gain the professional experience and contacts they will need to begin their careers.

Continuing education to bachelor's degree program — The high degree of competition in the natural resource field makes the pursuit of a bachelor's degree highly desirable. Programs which join well with the NRT degree are the parks and recreation management degree, the fisheries & wildlife degree and the 2+3 criminal justice degree programs or the conservation biology major. These programs lead to careers such as conservation officer, park naturalist, expedition leader, guide or recreation specialist.

Program Learning Outcomes:

Knowledge - NRT Graduates have working knowledge of basic tenets of natural resource management.

Skills - NRT Graduates are able to demonstrate competency in skills necessary to collect natural resource information.

Degree Requirements

Core Requirements:

- BIOL132 General Biology: Organisms 4
- NRES203 Fund of Natural Resources 3
- EVRN131 Introduction to GIS and GPS 2
- MATH111 College Algebra 3
- NSCI103 Environmental Science 3
- NSCI104 Environmental Science Lab 1
- RECS101 Introduction to Recreation & Leisure Service 3

Complete one course from the following two:

- GEOL121 Physical Geology 4
- NSCI102 Great Lakes Region: Geology & Resources 4

Complete one course from the following two:

- CHEM108 Applied Chemistry 3 and CHEM109 Applied Chemistry Lab 4
- CHEM115 General Chemistry I 5

Resource Management - 9 Credits from the following:

- NRES230 Introduction to Soil Science 4
- NRES284 Principles Forest Conservation 4
- NRES286 Principles of Watersheds 3
- NRES287 Conservation Biology 3
- NRES345 Limnology 4
- EVRN311 Environmental Law 3
- EVRN315 Geoenvironmental Systems 4
- GEOL122 Historical Geology 4
- GEOL223 Earth Materials 4
- GEOL322 Geochemical Systems 4
- GEOL411 Hydrologic Systems 4
- RECS362 Land Management Recreation Purposes 3

Skills/Certification - 9 credits from the following:

- NRES107 Field Biology: Fish & Wildlife Ecology & ID 3
- BIOL202 Plant Science: Identification & Diversity 3
- BIOL280 Biostatistics 3
- NRES310 Ichthyology 3
- NRES311 Mammalogy 3
- NRES312 Ornithology 3
- EVRN225 Intermediate GIS 3
- EVRN317 Environmental Health Applications 3
- EVRN389 Environmental Research Methods 3
- FIRE102 Wildland/Rural Fire Control 3
- GEOL308 Structural Geology Systems 4
- GEOL315 Geoenvironmental Systems 5
- GEOL380 Introduction to Field Geology 3
- GEOL431 Geophysical Systems 5

Complete one course from the following two:

- EMED188 Wilderness First Responder 2
- EMED189 Medical First Responder 3

Free Electives to total 62 credits

General Education: All LSSU Associate's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Paramedic Technology

Paramedics are trained to aggressively manage all types of emergency situations by providing scene control, emergency medical care and patient transport to a medical facility or trauma center. The paramedic is an integral part of the health care team, serving as an extension of the hospital emergency department. Paramedics provide a variety of skilled functions in the pre-hospital phase of patient care, often the most critical period of care. The professional paramedic is highly motivated and qualified

by education and certification to provide pre-hospital care under the supervision of a physician director of the Emergency Medical Service System.

This associate of applied science degree is designed to allow current fire science and public safety students to earn a minor and obtain their paramedic certification; it also allows students to obtain paramedic certification without committing to a four-year degree. Students can be certified as an Emergency Medical Technician-Basic after the first year with little or no previous training; and as a Paramedic at the end of the second year. Graduates will be eligible to challenge state and/or national licensure examination for both EMT-Basic and paramedic license.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Paramedic Technology (44 credits)

- EMED190 Prehospital Emergency Care I 4
- EMED191 Prehospital Emergency Care II 4
- EMED211 Emergency Pharmacology I 2
- EMED212 Emergency Pharmacology II 2
- EMED251 Advanced Emergency Care I 4
- EMED252 Advanced Emergency Care II 4
- EMED261 Emergency Cardiology I 2
- EMED262 Emergency Cardiology II 2
- EMED271 Care of Special Populations 2
- EMED284 Advanced Skills and Situations I 3
- EMED285 Advanced Skills and Situations II 3
- EMED286 Paramedic Operations 2
- EMED297 Paramedic Clinical I 2
- EMED298 Paramedic Clinical II 2
- EMED301 National Registry Certification Prep 2
- EMED302 Paramedic Field Internship 4

Paramedic Support Courses (13 credits)

- BIOL121 Human Anatomy & Physiology I 4
- BIOL122 Human Anatomy & Physiology II 4
- HLTH101 Introduction to Medical Terminology 2

- HLTH328 Multicultural Approach Health Care 3

General Education: All LSSU Associate's degree candidates must complete the [LSSU General Education Requirements](#).

A minimum of 67 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Pre-Professional Sciences

The associate degree in Pre-Professional Sciences prepares students for working in a health-related field such as medical, dental, optometry, podiatry, chiropractic, veterinary, pharmacy, and physician assistant. The degree combines theory and science concepts building on a core of biology and chemistry classes, along with hands-on experiences in our state-of-the-art laboratories. The program is an excellent preparation for students who wish to seek employment as a laboratory technician, consultant, or a science researcher. It is also excellent preparation for students who intend on applying to professional and graduate school and includes coursework that is required and/or highly desired by those programs.

Program Learning Outcomes:

Have practical and theoretical knowledge of biology and chemistry.

Have lab experience and competence in use of basic instrumentation and safe practices.

Research and synthesize the scientific literature for information relevant to a current scientific investigation.

Design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Degree Requirements

Biology & Chemistry (38 credits)

- BIOL121 Human Anatomy & Physiology I 4
- BIOL122 Human Anatomy & Physiology II 4
- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: General Biology: Organisms 4
- BIOL204 General Microbiology 4
- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM326 Organic Chemistry II 4

Support Courses (27 credits)

- ENGL110 First-Year Composition I 3
- ENGL111 First-Year Composition II 3
- COMM101 Fund/Speech Communication 3
- MATH111 College Algebra 3
- MATH207 Principles of Statistical Methods 3
- PHYS221 Principles of Physics I 4
- And**
- PHYS222 Principles of Physics II 4
- Or**

- PHYS231 Applied Phys Engineer/Scientist I 4
And
- PHYS232 Applied Phys Engineer/Scientist II 4

Select one Social Science Elective (4 credits)

- PSYC101 Introduction to Psychology 4
- SOCY101 Introduction to Sociology 4

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Small Business Administration

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.

Program Learning Outcomes:

Management Functions - Describe the functions of management and apply them appropriately in the workplace.

Communication - Apply oral and written communication skills appropriate for a business environment.

Technology - Effectively utilize technology within the functional areas of business.

Degree Requirements

Departmental Requirements (35 credits)

- ACTG132 Principles of Accounting I 4
- BUSN101 Freshman Seminar 1
- BUSN121 Introduction to Business 3
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3
or
- BUSN355 Business Law II 3
- BUSN389 Entrepreneurship 3
- ECON202 Principles of Microeconomics 3
- FINC245 Principles of Finance 3
- MGMT280 Intro Management Information Systems 3
- MGMT360 Management Concepts & Applications 3
- MGMT365 Human Resource Management 3
- MRKT281 Marketing Principles and Strategy 3

Free Electives to reach 62 credits

General Education: All LSSU Associate's degree candidates must complete the [LSSU General Education Requirements](#).

62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Social Work

Workers in this field help people improve their lives, work to alleviate human suffering and promote social justice. In direct service delivery programs you will be working with people who are caught in the grips of social problems and/or struggling with personal adjustment issues. This program provides beginning level skills and knowledge to enable you to help people in these circumstances.

You will learn about the field of social work, current issues in social work, introductory level clinical diagnosis and practice and will acquire skills in one-on-one counseling. Behavioral and social science perspectives on human behavior as well as basic human biology are included in this program. An extensive internship experience in one or more agency settings will provide you with an opportunity to apply, in a supervised setting, knowledge and skills gained in the classroom. The internship may be completed in the local area or outside the local area.

If you are seeking the Associate Degree in Social Work you are strongly encouraged to continue your studies to complete a Bachelor's degree to be successful in today's competitive labor market. You may find the expanded understanding of human behavior provided by the Sociology major or Psychology major to be particularly useful for work in social work programs. Both of these majors also help you develop critical thinking ability, improve writing skills and learn about research through first-hand experience developing and conducting a research project. These abilities are valued by employers in social work and human service agencies.

Although most students combine the Associate Degree in Social Work with a bachelor degree in Psychology or Sociology, some choose other bachelor programs to best prepare them to achieve their particular career goals. Advisors will help you make these decisions.

Program Learning Outcomes:

Students will be able to discuss the field of social work, current issues in social work and basic human biology.

Students will demonstrate skills in one-on-one counseling.

Students will demonstrate mastery of skills necessary to work in social services agencies.

Degree Requirements

Required Courses (21 credits)

- SOWK110 Introduction to Social Work 3
- PSYC201 Communication Skills in Counseling 3
- SOWK250 Social Work Practicum 9
- SOWK310 Clinical Diagnosis and Treatment 3
- SOWK344 Social Welfare Systems 3

Cognates- Required (3 credits)

Select one additional social work course, not taken above, from the following:

- SOCY301 Social Research Methods 3
- PSYC291 Group Counseling 3
- SOCY338 Deviance 3
- SOWK341 Addiction 3
- PSYC391 Family Therapy 3

Other Departments (12-13 credits)

- BIOL105 Function of the Human Body 4
- PSYC101 Introduction to Psychology 4
or
- SOCY101 Introduction to Sociology 4
- SOCY102 Social Problems 4
or
- PSYC155 Lifespan Development 3

Electives (8 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Substance Abuse Prevention and Treatment

This program provides the basic knowledge and skills for entry level substance abuse work. Included are social, psychological and biological bases of substance abuse, with special attention to alcoholism, and skills training in counseling. You will also improve your communication skills and expand your knowledge about cultural diversity and psychological and social foundations of human behavior. You will apply knowledge and skills acquired in an extensive internship working under close supervision in a substance abuse program. Placements include residential and out-patient rehabilitation settings, detoxification programs, and prevention programs. You may complete your internship locally or outside the local area.

If you are seeking the Associate Degree in Substance Abuse Prevention and Treatment you are strongly encouraged to continue your studies to complete a Bachelor's degree to be successful in today's competitive labor market. You may find the expanded understanding of human behavior provided by the Psychology major or Sociology major to be particularly useful for work in social work programs. Both of these majors also help you develop critical thinking ability, improve writing skills and learn about research through first-hand experience developing and conducting a research project. These abilities are valued by employers in this field.

Although most students combine the Associate Degree in Social Work with a bachelor degree in Sociology or Psychology, some choose other bachelor programs to best prepare them to achieve their particular career goals. Advisors will help you make these decisions.

Program Learning Outcomes:

Students will demonstrate clear and concise written and oral communication skills in an internship setting.

Students will demonstrate problem solving and critical thinking in substance abuse coursework and counseling settings.

Students will apply job-specific technical skills in their capstone internship.

Degree Requirements

Required Courses (39 credits)

- BIOL105 Function of the Human Body 4
- HMSV204 Fundamentals of Drug Abuse 3
- HMSV250 Human Services Practicum 9
- HMSV292 Alcohol Abuse Prevention & Treatment 3
- PSYC101 Introduction to Psychology 4
- PSYC201 Communication Skills in Counseling 3
- PSYC259 Abnormal Psychology 3
- SOCY102 Social Problems 4
- SOWK341 Addiction 3
- SOWK344 Social Welfare Systems 3

Cognates- Required (6 credits)

- PSYC291 Group Counseling 3
or
- PSYC391 Family Therapy 3
- SOCY225 Native Cultures of North America 3
or
- SOCY103 Cultural Diversity 3

Electives (7 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Technical Accounting

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.

Program Learning Outcomes:

Accounting Principles - Apply generally accepted accounting principles to record and report accounting information relevant to internal and external users.

Communication - Apply oral and written communication skills appropriate for a business environment.

Taxation - Apply the individual income tax laws of the Internal Revenue Code.

Degree Requirements

Departmental Requirements (39-40 credits)

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4

- ACTG232 Intermediate Accounting I 4
- ACTG233 Intermediate Accounting II 4
- ACTG332 Cost Accounting I 4
- ACTG421 Federal Taxation Accounting I 3
- BUSN101 Freshman Seminar 1
- BUSN231 Business Communication 3
- BUSN350 Business Law I 3
- ECON201 Principles of Macroeconomics 3
or
- ECON202 Principles of Microeconomics 3
- FINC245 Principles of Finance 3-4
or
- FINC341 Managerial Finance 3-4
- MGMT280 Introduction Management Information Systems 3

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Certificate: Cannabis Production

The Cannabis Production certificate provides graduates with a foundational skillset necessary to promote employment in the cannabis markets in Michigan, the United States, and beyond.

Program Learning Outcomes:

Graduates will be able to:

Interpret and discuss basic cannabis chemistry.

Explore lab knowledge and skills.

Practice communication skills.

Apply information retrieval skills.

Embrace safe chemical practices.

Explore Cannabis legal and business status.

Degree Requirements

Chemistry Requirements

- CHEM108 Applied Chemistry 3
- CHEM109 Applied Chemistry Lab 1
- CCHM120 Cannabis Chemistry I 1
- CCHM240 Cannabis Plant Sample Prep Chem Analysis 2
- CCHM245 Cannabis Chemistry II 1
- CCHM250 Cannabis Production 1

Business Requirements

- CBUS122 Survey of Cannabis Business 2

- CBUS360 Cannabis Law and Policy 1

A minimum of 12 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

Certificate: Culinary Arts Chef

The Culinary Arts Chef Certificate prepares individuals to work as professional chefs, sous chefs, and culinary experts in a variety of settings, including restaurants, boutique eateries, and speciality restaurants. With a focus on farm-to-table practices, good nutrition, and quality preparation and presentation, the program provides an exceptional basis for the practicing chef.

Program Learning Outcomes:

Demonstrate a repertoire of the basic principles behind the methods and techniques of preparing food for a commercial food and beverage operation.

Meet the expectations of patrons and regulatory agencies regarding sanitation and safety in a food and beverage operation.

Implement a service plan to ensure assigned goals and expectations are met.

Explain and apply basic management principles of the food and beverage industry.

Demonstrate a repertoire of advanced culinary techniques in the food and beverage industry. This includes yeast breads, desserts, charcuterie, ethnic cuisines, salt water fish and shellfish.

Apply basic front of house concepts and common practices to varying styles of service.

Describe basic bartending techniques and recipes.

Explain the basic requirements of what it takes to give quality hospitality and service.

Explain the principles behind what a nutritionally balanced diet is.

Explain how to apply nutritionally balanced principles to the implementation of any food and beverage menu.

List the common dietary concerns of which chefs and restaurateurs need to be aware.

Apply the skill and knowledge learned in the chef trade to the real time and fast paced environment of the restaurant industry.

Note: [Financial Aid Student Disclosure](#)

Degree Requirements

Department Requirements

- CULN111 Beginning Culinary Skills 8
- CULN113 Kitchen Safety and Sanitation 2
- CULN115 Food and Beverage Management 2
- CULN121 Advanced Culinary Skills 8
- CULN123 Service Operations 2
- CULN125 Nutrition for Chefs 2

- CULN130 Food Service Internship 6

A minimum of 30 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

Certificate: E-Marketing

The E-Marketing Certificate is designed to master the essential disciplines in digital, social, and mobile marketing, including search engine optimization (SEO), social media, pay-per-click (PPC), conversion optimization, web analytics, content marketing, email and mobile marketing. E-marketing is one of the world's fastest growing disciplines, and this certification will raise students value in the marketplace and prepare students for a career in e-marketing.

The E-Marketing Certificate is a 9 credit program that encompasses a mix of courses relating to Digital, Social, and Mobile marketing.

Program Learning Outcomes:

Decision Making - Research, synthesize, analyze and accurately interpret quantitative and qualitative information to drive effective marketing decision making.

Marketing Technology - Use technology to assist with the synthesis and analysis of data, oral and written communications, and group collaboration.

Communication - Communicate effectively, orally and in writing, marketing observations, findings, research, and recommendations to a large audience.

Degree Requirements

Department Requirements

- MRKT383 Digital Marketing 3
- MRKT384 Social Marketing 3
- MRKT386 Mobile Marketing 3

A minimum of 9 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

Certificate: Geographic Information Systems

This certificate program will provide students with a credential that is in high demand in many different disciplines/industries. The program provides a well-rounded suite of skills including: primary data collection using a variety of global positioning devices; hands-on experience with a variety of geographic information systems including ESRI's suite of tools; the basics of geospatial analysis; and a choice of advanced skill development. Students may pursue the certificate in the context of their major by completing discipline specific projects in the GIS courses.

Program Learning Outcomes:

Students earning the GIS certificate will be able to:

Collect and process primary geospatial data.

Compile, integrate, and manage spatial data from various sources and develop workflows to complete individual and collaborative geospatial projects.

Utilize state of the art geospatial tools to perform spatial analysis and visualization

that effectively, concisely, and ethically represents geospatial data.

Effectively communicate methodologies and outcomes of data and literature-based geospatial projects through oral, written, and graphic media.

Degree Requirements

Department Requirements

- EVRN131 Introduction to GIS and GPS 3
- EVRN225 Intermediate GIS 3
- EVRN325 Geospatial Analysis 3

Complete one course from the following three:

- EVRN355 GIS Programming & Applications 4
- EVRN365 Applied Geospatial Technologies 4
- EVRN445 Remote Sensing and Spatial Statistics 4

A grade of C or better is required in each EVRN course. A minimum of 13 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

Certificate: International Business

The International Business Certificate is intended to benefit those students seeking to broaden their understanding of international business and foster the development of their global mindset. The certificate program is open to all undergraduate students from any major and/or adult learners with the approval of the program directors.

The International Business Certificate is a 12 credit program that encompasses a mix of courses relating to international business and management, courses designed to broaden a student's functional knowledge and cultural competencies.

Certificate programs can help you gain knowledge in key areas and demonstrate dedication and professional commitment. They can also provide a competitive edge and help you stay current on changes in your industry. This lets you refresh your current skills, deepen your understanding or branch out and discover new areas.

Program Learning Outcomes:

Apply international business knowledge in the areas of management, marketing, economics, and business law.

Analyze how cultural, economic, geographical and political paradigms impact ethical issues in various international business decision processes

Function effectively in situations characterized by cultural diversity. This includes awareness of own cultural intelligence and awareness of the cultural intelligence of others.

Degree Requirements

Department Requirements

- INTB289 Competing in the Global Marketplace 3
- INTB375 International Business Law 3
- ECON408 International Economics 3

Elective: Choose one of the following courses:

- INTB420 International Comparative Management 3
- INTB486 International Marketing 3

A minimum of 12 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

Certificate: International Studies

This program can be completed in three ways:

- Concurrently with a B.S. or B.A. degree program
- Post-baccalaureate program
- Minor

The purpose of the certificate program is to better prepare a person to work with a more diverse work force. The program is designed to begin preparing students for potential foreign work assignments and improved multicultural relations.

The international studies certificate/minor is an interdisciplinary program. Course substitutions to meet your objectives in international studies may be approved by your academic advisor. As an example, Canadian or American courses might be approved as a substitute for students from countries other than Canada or the U.S. Also, special topics courses listed in the certificate curriculum may change with future development and additional international courses.

The listed courses may be taken throughout a student's baccalaureate program or as a one-year, post graduate certificate. This program features opportunities for students to study in foreign countries and in classes at Lake Superior State University with international faculty.

Program Learning Outcomes:

Students will present and defend international perspectives when discussing concepts in business, economics, politics, history, humanity, sociology, and geography.

Students will explore a world language and demonstrate knowledge of basic vocabulary in that language and basic use of that language.

Degree Requirements

Choose at least one course from six of the following categories to total a minimum of 32 credits.

Category 7, Foreign Language is required.

1. Cultural Diversity

- SOCY103 Cultural Diversity 3
- BUSN308 Managing Cultural Differences 3

2. Business and Economics

- ECON408 International Economics 3
- INTB486 International Marketing 3
- BUSN400 Special Topics:

3. Geography

- GEOG302 Economics Geography 4

- GEOG306 Cultural Geography 3

4. Political Science

- POLI411 U.S. Foreign Policy 3
- POLI420 Politics of the World Economy 4
- POLI331 Comparative Politics of Western Europe and Russia 4
- POLI334 Middle East Politics 3

5. History

- HIST310 Russia 4
- HIST316 Europe in the 20th Century 4
- HIST361 Latin America 4
- HIST371 Far East Civilization 4
- HIST442 Diplomatic History of the U.S. 4

6. Humanities

- HUMN261 World Literature I 3
- HUMN262 World Literature II 3
- FREN353 Business French I 3
- FREN354 Business French II 3
- FREN360 French Cultural Perspectives 3-4
- JAPN105 Intensive Introductory Japanese Language I 10
- JAPN106 Intensive Introductory Japanese Language II 10
- JAPN201 Culture and Society of Japan I 3
- JAPN202 Culture and Society of Japan II 3
- JAPN301 Japanese Art and Culture I 4
- JAPN302 Japanese Art and Culture II 4

7. Foreign Language

- A minimum of two semesters of a modern foreign language 8

Special Topics: Study in a foreign country may be used for up to eight credits of the Humanities and/or Foreign Language credits.

A minimum of 32 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

Certificate: MCOLES

A certificate program addressing the skills and competencies needed for certification through the Michigan Commission on Law Enforcement Standards (MCOLES).

Prerequisite: Admission to MCOLES academy, an earned associate degree or higher in any field or honorable discharge from any branch of U. S. Military Service, Michigan Residency.

MCOLES Academy Admissions Requirements:

- Age 21 minimum
- U.S. Citizen
- Resident of Michigan
- Valid MI Drivers Licenses
- Complete and pass Reading and Writing test as prescribed by MCOLES (National Standardized screening test)

- Meet MCOLES physical fitness entrance standards within 120 prior to start
- Meet MCOLES health and vision minimum standards
- Successfully pass the entrance interview and background screen
- No Felony convictions
- Honorable discharge from Military with 2 years full-time duty service as a military police officer within 2 years of discharge with a minimum placement at the B-Band on the MCOLES reading and writing pre-screening test or meet the MCOLES minimum education standard of Associates degree (62 semester credits minimum)

Students apply for admission in the fall for the academy sequence that runs from January-June.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Department Requirements:

- CJUS197 Physical Fitness Public Safety 1
- CJUS201 Firearms Training 1
- CJUS409 Procedural Criminal Law 3
- CJUS411 Police Operations 5
- CJUS444 Criminalistics 4
- CJUS450 Skills Academy 2
- EMED189 Medical First Responder 3

A minimum of 19 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

Certificate: Paramedic Training

This program provides advanced life support skills to assess and treat the sick and injured. It will allow graduates to qualify to write the state licensing examination for paramedic and possess advanced life support skills to assess and treat the sick and injured.

Admission requirements are:

- 18 years of age by September of year entering program.
- evidence of high school diploma or equivalent.

- evidence of valid, current Michigan driver's license.
- evidence of valid, current Michigan EMT-basic certification or National Registry EMT certification.
- evidence of current CPR or CPR instructor certification.
- evidence of completion of ENGL110 First-Year Composition I, three credits.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Note: [Financial Aid Student Disclosure](#)

Degree Requirements

Department Requirements

- EMED211 Emergency Pharmacology I 2
- EMED212 Emergency Pharmacology II 2
- EMED251 Advanced Emergency Care I 4
- EMED252 Advanced Emergency Care II 4
- EMED261 Advanced Cardiology I 2
- EMED262 Advanced Cardiology II 2
- EMED271 Prehospital Emergency Pediatrics 2
- EMED284 Advanced Skills and Situations I 3
- EMED285 Advanced Skills and Situations II 3
- EMED286 Paramedic Operations 2
- EMED297 Paramedic Clinical I 2
- EMED298 Paramedic Clinical II 2
- EMED301 National Registry Certification Prep 2
- EMED302 Paramedic Field Internship 4

Support Courses

- BIOL121 Anatomy and Physiology I 4
- BIOL122 Anatomy and Physiology II 4

A minimum of 44 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

Accounting — Finance

Degree Requirements

Total Credits Required: 24

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- ACTG232 Intermediate Accounting I 4
- FINC341 Managerial Finance 4

Choose One From:

- FINC443 Insurance 4
- FINC446 Financial Analysis and Policy 4
- FINC448 Investment Strategy 4

ACTG or FINC Electives 4

Aquaculture

Degree Requirements

Total Credits Required: 20

Required Courses:

- MRKT281 Marketing Principles and Strategy 3
- NRES310 Ichthyology 3
- NRES345 Limnology 4
- NRES372 Freshwater Fish Culture 3
- NRES389 Internship in (Aquaculture) 3

Select one of following:

- ACTG132 Principles of Accounting I 4
- ECON202 Principles of Microeconomics 3

Select one of following:

- BIOL389 Internship in (Fish Health) 3
- NRES450 Apprenticeship in (Fish Culture) 1

Aquaponic Production

Degree Requirements

Total Credits Required: 34

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL204 General Microbiology 4
- BIOL232 Introduction to Aquaponics 4
- BIOL235 Introduction to Protected Horticulture 3

- BIOL315 Plant Sciences: Structure and Function 4
- CHEM115 General Chemistry I 5
- NSCI103 Environmental Science 3

Complete one course from the following two:

- BIOL389 Internship in Aquaponics 3
- BIOL490 Independent Study in Aquaponics 3

Biology

Degree Requirements

Total Credits Required: 21

- BIOL131 General Biology: Cells 4
- BIOL132 General Biology: Organisms 4
- BIOL204 General Microbiology 4
- BIOL337 General Ecology 3
- BIOL Electives 6 (3 credits at least 200 level or higher and 3 credits at least 300 level or higher)

Biochemistry

Degree Requirements

Total Credits Required: 25

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM326 Organic Chemistry II 4
- CHEM351 Introductory Biochemistry 4

And complete one of the following:

- BIOL421 Advanced Cell & Molecular Biology 4
- CHEM353 Introductory Toxicology 3
- CHEM452 Advanced Biochemical & Molecular Tech 4

Chemistry

Degree Requirements

Total Credits Required: 24

- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM225 Organic Chemistry I 4
- CHEM231 Quantitative Analysis 4

At least 6 credits from the following choices:

- CHEM310 Applied Spectroscopy 4

- CHEM326 Organic Chemistry II 4
- CHEM332 Instrumental Analysis 4
- CHEM341 Environmental Chemistry 4
- CHEM351 Introductory Biochemistry 4
- CHEM361 Physical Chemistry 4
- CHEM362 Physical Chemistry II 3
- CHEM445 Forensic Science 4
- CHEM461 Advanced Inorganic Chemistry 3

Chemistry-Secondary Teaching

Degree Requirements

Total Credits Required: 25

- CHEM110 Applied Organic & Biochemistry 4
- CHEM115 General Chemistry I 5
- CHEM116 General Chemistry II 5
- CHEM231 Quantitative Analysis 4
- CHEM332 Instrumental Analysis 4
- EDUC443 Science Methods-Secondary 3
or
- EDUC453 Directed Study: Science Methods 3

Students must earn a grade of C or better in each course. A minimum gpa of 2.70 or higher is required for this minor.

Coaching

Degree Requirements

Total Credits Required: 24

- KINS105 Program Development and Leadership 3
- KINS262 Exercise Physiology 3
- KINS270 Sports Management 3
- KINS275 Nutrition Sport Exercise Performance 3
- KINS344 Kinesiology 3
- KINS428 Psychology Exercise/Rehabilitation 3
- KINS450 Philosophy Human Performance/Leisure 3
- KINS482 Administration of Recreation Services 3

Communication

Degree Requirements

Total Credits Required: 21

- COMM201 Small Group Communication 3
or
- COMM225 Interpersonal Communication 3
- COMM211 Advanced Public Speaking 3

or

- COMM210 Business & Professional Speaking 3
- COMM302 Argumentation & Advocacy 3
- COMM307 Classical/Contemporary Rhetoric 3

or

- ENGL321 Rhetoric & Composition Theory 3
- COMM308 Communication Theory 3
- COMM325 Organizational Communication 3
- COMM416 Communication in Leadership 3

Students must complete 21 semester hours of credit in addition to basic requirements of composition and speech (COMM101).

Computer Science

Degree Requirements

Total Credits Required: 23-24

- CSCI105 Intro. to Computer Programming 3
- CSCI121 Principles of Programming 4
- CSCI201 Data Structures and Algorithms 4
- CSCI211 Database Applications 3
- CSCI221 Computer Networks 3
- CSCI415 Computer Organization and Architecture 3
- Plus 3 or 4 additional CSCI credits at the 300- or 400-level 3-4

Corrections

Degree Requirements

Total Credits Required: 21

- CJUS110 Introduction to Corrections 3
- CJUS140 Criminological Theory and Correctional Client Growth 3
- CJUS220 Institutional Corrections 3
- CJUS240 Community Based Corrections 3
- CJUS319 Substantive Criminal Law 3
- CJUS321 Ethical Issues in Public Safety
- CJUS355 Juvenile Justice 3

The Corrections minor cannot be applied to the Associate degree in Criminal Justice Corrections.

Counseling

Degree Requirements

Total Credits Required: 21

- PSYC155 Lifespan Development 3
- PSYC201 Communication Skills in Counseling 3
- PSYC396 Tests and Measurements* 3
- SOWK344 Social Welfare Systems 3
- SOWK250 Human Services Practicum 3
- BIOL105 Function of the Human Body** 4
- PSYC259 Abnormal Psychology*** 3

or

- SOCY338 Deviance*** 3
- PSYC291 Group Counseling 3

or

- PSYC391 Family Therapy 3
- PSYC240 Behavioral Management 3

or

- PSYC385 Health Psychology 3

**Note: PSYC396 has a prerequisite of one of these statistics courses: MATH207, PSYC210 or SOCY302.*

***May count toward general education.*

****May count toward SOCY/PSYC minor.*

Creative Writing

Degree Requirements

Total Credits Required: 24

- ENGL180 Introduction to Literary Studies 3
 - ENGL221 Introduction to Creative Writing 3
 - ENGL223 Creative Writing II 3
 - ENGL231 American Literature I 3
- and**
- ENGL232 American Literature II 3
- or**
- ENGL233 English Literature I 3
- and**
- ENGL234 English Literature II 3
 - ENGL409 Adv. Creative Writing Workshop 3

Select two from the following:

- ENGL301 Creative Prose Writing 3
- ENGL302 Poetry Writing 3
- ENGL303 Performance Writing 3

Early Childhood Education - Teaching

Degree Requirements

To be eligible for this minor, students must be in an Elementary Education program or hold an Elementary Teaching Certificate.

Total Credits Required: 28

- CHLD150 Observation and Assessment 4
- CHLD210 Infants and Toddlers 4
- CHLD225 Emergent Literacy 3
- CHLD245 Early Childhood Curriculum 3
- CHLD270 Administration of Early Childhood Programs 2
- CHLD310 Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- CHLD440 Family and Community Partnerships 3
- CHLD480 Directed Teaching Seminar 1

- CHLD492 Directed Teaching: Early Childhood 5

Students must earn a grade of C or higher in each course. A minimum gpa of 2.700 or higher is required for this minor.

Successful completion of this minor and a passing score on the Michigan Test for Teacher Certification Early Childhood Education subject test meet the requirements for the Early Childhood (General and Special) Education endorsement (ZS) on a Michigan elementary teaching certificate.

Economics - Finance

Degree Requirements

Total Credits Required: 28

- ACTG132 Principles of Accounting I 4
- ACTG133 Principles of Accounting II 4
- ECON201 Prin. of Macroeconomics 3
- ECON202 Prin. of Microeconomics 3
- FINC341 Managerial Finance 4
- ECON or FINC Electives 10*

*At least 3 credits must be from 300/400 level ECON or FINC courses

Electrical Engineering

Degree Requirements

Total Credits Required: 26

- EGNR101 Introduction to Engineering 2
or
- CSCI105 Introduction to Computer Programming 3
- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGEE125 Digital Fundamentals* 4
- EGEE210 Circuit Analysis* 4
- EGEE250 Microcontroller Fundamentals 4
- MATH152 Calculus II 4

Elective Courses (6 credits minimum):

- EGEE300 or higher or EGET300 or higher 6

***C or better grade**

****At least one elective course must not count toward any other major or minor.**

English Language and Literature - Secondary Teaching

Degree Requirements

Total Credits Required: 30

English Requirements:

- ENGL180 Introduction to Literary Studies 3

- ENGL222 English Grammar & Language in Context 3
- ENGL231 American Literature I 3
- ENGL232 American Literature II 3
- ENGL320 Responding to Writing 3
- ENGL336 Young Adult Literature and Culture 3
- ENGL345 Studies in Classic Texts 3
- ENGL435 Studies in Visual Texts 3

Education Requirements:

- EDUC440 Reading in the Content Area 3
- EDUC441 Eng Lang Arts Meth Sec Teachers 3

English Teaching - Elementary Language Arts

Degree Requirements

Total Credits Required: 24

English Requirements:

- ENGL180 Introduction to Literary Studies 3
- ENGL221 Introduction to Creative Writing 3
- ENGL222 English Grammar 3
- ENGL231 American Literature I 3
- ENGL232 American Literature II 3
- ENGL320 Responding to Writing 3
- ENGL335 Children's Literature 3
- THEA112 Acting for Beginners 3

Environmental Policy

Degree Requirements

Total Credits Required: 21-23

Requirements:

- BIOL304 The Human Environment 3
- EVRN311 Environmental Law 3
- NSCI103 Environmental Science 3
- POLI342 International Environmental Policy 3

Select one of the following:

- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3

Select one of the following:

- POLI110 Introduction to American Government & Politics 3
- POLI160 Introduction to Canadian Government & Politics 3

Select one of the following:

- ECON307 Environmental Economics 3
- EVRN315 Human Impacts on Environment 4

- POLI301 Policy Analysis and Evaluation 4
- POLI413 The International Legal Order 4
- POLI420 Politics of the World Economy 4

Environmental Science

Degree Requirements

Total Credits Required: 22

- BIOL131 General Biology: Cells 4
or
- BIOL132 General Biology: Organisms 4
- CHEM115 General Chemistry I 5
- NSCI103 Environmental Science 3

One of the Following:

- NSCI102 Introduction to Geology 4
- GEOL121 Physical Geology 4
- NSCI116 Introduction to Oceanography 4

At least 3 additional credits of EVRN course(s) at the 300 level or higher

One of the following (minimum 3 credits):

- NRES304 The Human Environment 4
- BIOL337 General Ecology 3
- NRES345 Limnology 3
- BIOL420 Evolutionary Analysis 3
- NRES470 Restoration Ecology 3
- NRES475 Aquatic Entomology 3
- ECON307 Environmental Economics 3
- GEOG306 Cultural Geography 4
- POLI342 International Environmental Policy 3
- GEOL334 Hydrologic Systems: Sur/Ground Water 4
- Any EVRN course at the 300 level or higher

A minimum gpa of 2.00 or higher is required for this minor.

General Business

Degree Requirements

Total Credits Required: 22-23

Required Courses:

- ACTG132 Principles of Accounting I 4
- MGMT360 Management Concepts & Apps. 3
- MRKT281 Marketing Principles & Strategy 3
- ECON202 Principles of Microeconomics 3
- FINC245 Principles of Finance 3
or
- FINC341 Managerial Finance 4
- BUSN231 Business Communications 3
- BUSN350 Business Law I 3

Geographic Information Science

Degree Requirements

Total Credits Required: 20

GIS Core Requirements:

- EVRN131 Introduction to GIS and GPS 3
- EVRN225 Intermediate GIS 3
- EVRN325 Geospatial Analysis 3

Select two from the following:

- EVRN355 GIS Programming and Applications 4
- EVRN365 Applied Geospatial Technologies 4
- EVRN445 Remote Sensing & Spatial Statistics 4

Select two from the following:

- EVRN211 Field Data Methods 1
- NRES284 Principles of Forest Conservation 4
- GEOL308 Structural Geology Systems 4
- RECS365 Expedition Management 3

Select one of the following:

- CSCI105 Introduction to Computer Programming 3
- BIOL280 Biostatistics 3
- BUSN211 Business Statistics 3
- MATH207 Principles of Statistical Methods 3
- PSYC210 Statistics

Minimum grade of C (2.00) in every EVRN course.

Geography

Degree Requirements

Total Credits Required: 20

Geography (9-11 credits)

- GEOG106 Physical Geography: Landforms 4
or
- GEOL121 Physical and Historical Geology I 4
- GEOG108 Physical Geography: Meteorology and Climatology 4
- GEOG302 Economic Geography 4
- GEOG306 Cultural Geography 3
- GEOG492 Individualized Studies in Geography 2-4

Geography electives to total 20 credits:

- GEOG201 World Regional Geography 4
- GEOG321 Geography of Europe and Great Britain 4
- GEOG322 Geography of South America, Central America and the Caribbean Region 4
- GEOG323 Geography of East and Southeast Asia 4
- GEOG325 Regional Geography of North America 4

- GEOG360 Historical Geography of Eastern North America 4

It is strongly suggested that students pursuing professional careers complete MATH207 Principles of Statistical Methods.

Geology

Degree Requirements

Total Required Courses: 20

- GEOL121 Physical Geology 4
- GEOL122 Historical Geology 4
- GEOL223 Earth Materials 4
- GEOL308 Structural Geology Systems 4

A minimum of 4 additional GEOL credits at 3XX or 4XX Level.

Gerontology

Degree Requirements

Total Credits Required: 23

Required Courses:

- BIOL105 Function of the Human Body 4
or
- BIOL122 Human Anatomy and Physiology II 4
- PSYC155 Lifespan Development 3
- RECS105 Program Development & Leadership 3
- RECS295 Practicum 1
- RECS370 Recreation for the Elderly 3
- HLTH352 Health Issues of Aging Populations 3
- SOCY326 The Sociology of Aging and the Aged 3
- SOCY327 The Sociology of Dying and Death 3

History

Degree Requirements

Total Credits Required: 21

- HIST101 History of World Civilization I 4
and
- HIST102 History of World Civilization II 4
or
- HIST131 United States History I 4
and
- HIST132 United States History II 4
- HIST296 Historical Methods 2
- HIST 200 Level History Elective 3
- HIST 300/400 Level History Elective 8

Homeland Security

Degree Requirements

Total Credits Required: 21

Required Courses:

- CJUS101 Introduction to Criminal Justice 3
- CJUS103 Introduction to Terrorism and Homeland Security 3
- CJUS203 Cyberterrorism 3
- CJUS303 Critical Infrastructure Protection 3

Select two courses from:

- CJUS204 Domestic and International Terrorism 3
- CJUS325 Homeland Security and Emergency Services 3
- CJUS384 International and Comparative Criminal Justice Systems 3

Select one course from:

- CJUS306 Security Systems 3
- CJUS313 Crisis Intervention and Deviant Behavior 3
- CJUS444 Criminalistics 4
- FIRE312 Hazardous Materials Management 3

The Homeland Security Minor cannot be applied to the Associate Degree Criminal Justice Homeland Security, the Bachelor's degree in Criminal Justice with a Homeland Security Concentration or equivalent.

Human Nutrition

Degree Requirements

Total Credits Required: 23

- BIOL122 Anatomy and Physiology II 4
- CHEM105 Life Chemistry II 4
- HLTH104 Nutrition for Early Childhood 3
- HLTH208 Principles of Human Nutrition 3
- EXER275 Nutrition for Sport and Exercise Performance 2
- HLTH330 Applied Nutrition 2
- HLTH452 Contemporary Issues in Nutrition 3
- HLTH490 Independent Study in Health 2
- or**
- EXER496 Selected Research Topics 2

Human Resource Management

Degree Requirements

Total Credits Required: 31

- BUSN350 Business Law I 3
- ECON201 Principles of Macroeconomics 3
- ECON202 Principles of Microeconomics 3
- MGMT360 Management Concepts & Apps. 3
- MGMT365 Human Resource Management 3
- MGMT451 Labor Law 4

- MGMT464 Organizational Behavior 3
- MGMT469 Collective Bargaining 3
- PSYC201 Communication Skills in Counseling 3
- PSYC396 Tests and Measurements 3

Human Services Administration

Degree Requirements

Total Credits Required: 22

- SOWK344 Social Welfare Systems 3
- MGMT365 Human Resource Management 3
- DATA Elective 3
- POLI201 Intro. to Public Administration 3
- or**
- PSYC228 Organizational Behavior 3
- HMSV250 Human Services Practicum 3
- ACTG230 Fundamentals of Accounting 4
- MRKT281 Marketing Principles and Strategy 3

Humanities

Degree Requirements

Total Credits Required: 24

Required Courses:

- HUMN251 Humanities I 4
- HUMN252 Humanities II 4

Select at least 10 credits from Group A:

HUMN203 Survey of Chinese Culture 3
 HUMN240 Native Art and Culture 3
 HUMN255 World Mythology 4
 HUMN256 Intro Film: Images of Culture 3
 HUMN261 World Literature I 3
 HUMN262 World Literature II 3
 PHIL204 Introduction to Philosophy 3
 PHIL210 Existentialism 3
 PHIL215 Ethical Theory and Practice 3
 PHIL250 Philosophy of Religion 3
 PHIL302 Ancient Western Philosophy 3
 PHIL305 Modern Contemporary Philosophy 3

Select at least 6 credits from Group B:

ARTS109 Principles of Design and Color 3
 ARTS110 Fundamentals of Drawing 3
 ARTS250 Art History & Appreciation I 4
 ARTS251 Art History & Appreciation II 4
 SPAN261 Second Year Spanish I 3
 SPAN262 Second Year Spanish II 3
 FREN251 Second Year French I 4
 FREN252 Second Year French II 4
 THEA251 History of Drama and Theatre I 3

THEA252 History of Drama and Theatre II 3
DANC305 Dance History 3
ENGL236 Literature and Culture 3
MUSC220 History Appreciation Music I 4
MUSC221 History Appreciation Music II 4

At least 6 of the 24 credits need to be at the 300 level.

Institutional Loss Control

Degree Requirements

Total Credits Required: 21

- CJUS212 Loss Control 3
- CJUS341 Fire Cause & Arson Investigation 3
- FIRE101 Introduction to Fire Science 3
- FIRE111 Hazardous Materials 3
- FIRE206 Fire Protection Systems Equipment and Industrial Fire Prevention 3
- FIRE301 Code Enforcement Inspection and Fire Prevention 3

Select one of the following two:

- CJUS303 Critical Infrastructure Protection 3
- or**
- CJUS306 Security Systems 3

This minor may not be used for fire science majors.

International Business

Degree Requirements

Total Credits Required: 21

Required Courses:

- INTB375 International Business Law 3
- INTB389 Competing in the Global Marketplace 3
- INTB420 Comparative International Management 3
- INTB486 International Marketing 3
- MGMT360 Management Concepts 3
- MRKT281 Principles of Marketing 3
- Approved International Experience Elective (3)

Select one of the following courses for the International Experience Elective:

- BUSN399 Internship in Discipline 3
- INTD310 Foreign Study 3
- INTD410 Internship in Department 3

International Studies

Degree Requirements

Total Credits Required: 32

Choose at least one course from six of the following categories to total a

minimum of 32 credits.

Category 7, foreign language, is required.

1. Cultural Diversity

- SOCY103 Cultural Diversity 3
- BUSN308 Managing Cultural Differences 3

2. Business and Economics

- ECON408 International Economics 3
- INTB486 International Marketing 3
- BUSN400 Special Topics 3

3. Geography

- GEOG302 Economics Geography 4
- GEOG306 Cultural Geography 3

4. Political Science

- POLI411 U.S. Foreign Policy 3
- POLI420 Politics of the World Economy 4
- POLI331 Comparative Politics of Western Europe and Russia 4
- POLI334 Middle East Politics 3

5. History

- HIST310 Russia: From Under-developed State to Superpower 4
- HIST316 Europe in the 20th Century 4
- HIST361 Latin America 4
- HIST371 Far East Civilization: 1850 to Present 4
- HIST442 Diplomatic History of the U.S. I 4

6. Humanities

- HUMN261 World Literature I 3
- HUMN262 World Literature II 3
- FREN353 Business French I 3
- FREN354 Business French II 3
- FREN360 French Cultural Perspectives 3-4
- JAPN105 Intensive Introductory Japanese Language I 10
- JAPN106 Intensive Introductory Japanese Language II 10
- JAPN201 Culture and Society of Japan I 3
- JAPN202 Culture and Society of Japan II 3
- JAPN301 Japanese Art and Culture I 4
- JAPN302 Japanese Art and Culture II 4

7. Foreign Language

- A minimum of two semesters of a modern foreign language 8

Special Topics — study in a foreign country may be used for up to eight credits of the humanities and foreign language credits.

Kinesiology

Degree Requirements

Total Credits Required: 24

- KINS101 Foundations in Kinesiology 3
- KINS140 Health and Fitness 3
- KINS265 Personal Fitness Training 3
- KINS275 Nutrition Sport Exercise Performance 3
- KINS332 Health Promotions 3
- KINS428 Psychology Exercise/Rehabilitation 3
- KINS434 Neurological Basics Motor Learning 3
- KINS444 Exercise Prescription 3

Law Enforcement

Degree Requirements

Total Credits Required: 21

Required Courses:

- CJUS101 Intro. to Criminal Justice 3
- CJUS102 Police Process 3

Minimum of 15 credits from (at least 6 credits must be at 300/400 level):

- CJUS203 Cyberterrorism 3
- CJUS206 Law Enforcement/Loss Control Internship 3
- CJUS243 Investigation 3
- CJUS313 Crisis Intervention and Deviant Behavior 3
- CJUS319 Substantive Criminal Law 3
- CJUS321 Ethical Issues in Public Safety 3
- CJUS409 Procedural Criminal Law 3
- CJUS444 Criminalistics 4
- CJUS Elective 200 Level or higher (up to 6 credits)

The Law Enforcement Minor cannot be applied to the Associate Degree Criminal Justice Law enforcement, the Bachelor's degree in Criminal Justice with a Law Enforcement concentration, or equivalent.

Literature

Degree Requirements

Total Credits Required: 21

Methods, Genre, and Theory (6 credits)

- ENGL180 Introduction to Literary Studies 3
- ENGL380 History of Literary Criticism 3

Literature (12 credits)

Choose four courses not required for major with at least one course at the 400 level. The four courses may come from any category:

American and British Literatures

- ENGL231 American Literature I 3
- ENGL232 American Literature II 3
- ENGL233 English Literature I 3
- ENGL234 English Literature II 3

Diversity and Culture

- ENGL235 Survey of Native Literature of North America 3
- ENGL236 Literature and Culture 3

Textual Criticism

- ENGL345 Studies in Classic Texts 3
- ENGL435 Studies in Visual Texts 3

Advanced Studies

- ENGL440 Advanced Studies in British Literature 3
- ENGL442 Advanced Studies in American Literature 3

Professional Skills (3 credits - Choose one course not required for major)

- ENGL221 Introduction to Creative Writing 3
- ENGL222 English Grammar 3
- ENGL320 Responding to Writing 3

Marine and Freshwater Sciences

Degree Requirements

Total Credits Required: 24-26

- NSCI116 Introduction to Oceanography 4
- BIOL286 Principles of Watershed 3
- BIOL310 Ichthyology 3
- BIOL345 Limnology 4
- BIOL389 Internship in Biology 3
- BIOL450 Lab Apprentice* 1

Select two of the following (must represent different disciplines):

- BIOL289 Aquatic Research Sampling Methods* 3
- BIOL302 Invertebrate Zoology 3
- BIOL333 Fish Ecology 3
- BIOL475 Aquatic Entomology 3
- EVRN341 Environmental Chemistry I 4
- GEOL121 Physical & Historical Geology I 4
- GEOL411 Hydrological Systems 4

***Cross-listed as EVRN**

Marketing

Degree Requirements

Total Credits Required: 21

- ECON202 Principles of Microeconomics 3
- INTB486 International Marketing 3
- MRKT281 Marketing Principles & Strategy 3
- MRKT283 Personal Selling 3
- MRKT381 Consumer Behavior 3
- MRKT Electives (300 level or above) 6

Mathematics

Degree Requirements

Total Credits Required: 21

Required Courses:

- MATH151 Calculus I 4
- MATH152 Calculus II 4
- MATH207 Principles of Statistical Methods 3
- or**
- MATH308 Probability and Mathematical Statistics 3

Plus additional mathematics courses numbered MATH215 or higher for a minimum of 21 credits with a minimum of 6 credits at the 300/400 level.

Mathematics - Elementary Teaching

Degree Requirements

Total Credits Required: 26

Courses Required:

- MATH103 Number Systems and Problem Solving 4
- MATH104 Geometry & Measurement 4
- MATH112 Calculus for Business & Life Sciences 4
- or**
- MATH151 Calculus I 4
- MATH207 Principles of Statistical Methods 3
- MATH215 Fundamental Concepts of Mathematics 3
- MATH321 History of Mathematics 3
- EDUC420 Math Methods for Elementary Teachers 2
- MATH300/400 Elective 3

Mathematics - Secondary Teaching

Degree Requirements

Total Credits Required: 26

- MATH151 Calculus I 4
- MATH152 Calculus II 4

- MATH215 Fundamental Concepts of Mathematics 3
- MATH216 Discrete Mathematics and Problem Solving 3
- MATH207 Principles of Statistical Methods 3
- MATH321 History of Mathematics 3
- MATH325 College Geometry 3
- EDUC442 Math Methods for Secondary Teachers 3

Mechanical Engineering

Degree Requirements

Total Credits Required: 21

- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGEM220 Statics 3
- EGME110 Manufacturing Processes 3
- EGME141 Solid Modeling 3
- EGME225 Mechanics of Materials 3
- EGME or EGEM listed courses at the 300/400 level 7

Not for mechanical engineering students.

Natural Resources

Degree Requirements

Total Credits Required: 25 - 27

Required Courses (16 credits):

- BIOL132 General Biology: Organisms 4
- EVRN311 Environmental Law 3
- NRES107 Field Biology Fish Wildlife Eco/Iden 3
- NRES203 Fund of Natural Resources 3
- NSCI103 Environmental Science 3

Two of the following (6 - 8 credits):

- NRES230 Introduction to Soil Science 4
- NRES240 Natural History of the Vertebrate 3
- NRES250 Quantitative Biology 3
- NRES284 Principles Forest Conservation 4
- NRES286 Principles of Watersheds 3
- NRES287 Conservation Biology 3

NRES Elective- One NRES course at the 300-400 Level (3-4 credits)

(Note: NRES199, NRES299, NRES398, NRES399, NRES495, NRES497, NRES499 can not be used to fulfill the 300-400 level elective requirement.)

Outdoor Leader

Degree Requirements

Total Credits Required: 23

- RECS101 Introduction to Recreation and Leisure Services 3
- RECS262 Outdoor Recreation 3
- RECS360 Facilitation and Interpretation 3

- RECS365 Expedition Management 3
- RECS390 Recreation Leader Apprenticeship 1
- RECS390 Recreation Leader Apprenticeship 1
- EMED188 Wilderness First Responder 2
- EVRN131 Introduction to GIS and GPS 3

Complete four from the following five courses:

- RECA106 Backpacking 1
- RECA107 Canoe Techniques 1
- RECA109 Rock Climbing and Rappelling 1
- RECA119 Cross-Country Skiing 1
- RECA120 Downhill Skiing and Snowboarding 1

Paramedic Technology

Degree Requirements

Current licensure as a Michigan Basic EMT and all course prerequisites must be met by the student prior to beginning this program.

Total Credits Required: 44

Paramedic Technology (36 credits)

- EMED211 Emergency Pharmacology I 2
- EMED212 Emergency Pharmacology II 2
- EMED251 Advanced Emergency Care I 4
- EMED252 Advanced Emergency Care II 4
- EMED261 Emergency Cardiology I 2
- EMED262 Emergency Cardiology II 2
- EMED271 Prehospital Emergency Pediatrics 2
- EMED284 Advanced Skills and Situations I 3
- EMED285 Advanced Skills and Situations II 3
- EMED286 Paramedic Operations 2
- EMED297 Paramedic Clinical I 2
- EMED298 Paramedic Clinical II 2
- EMED301 National Registry Certification Preparation 2
- EMED302 Paramedic Field Internship 4

Support Courses (8 credits)

- BIOL121 Anatomy and Physiology I 4
- BIOL122 Anatomy and Physiology II 4

Philosophy

Degree Requirements

Total Credits Required: 20-21

Required Courses (12 credits):

- PHIL205 Logic 3
- PHIL215 Ethical Theory and Practice 3
- PHIL302 Ancient Western Philosophy 3
- PHIL305 Modern and Contemporary Philosophy 3

Elective Courses (8-9 credits)

- PHIL100 Special Topics (if offered) 1-4
- PHIL200 Special Topics (if offered) 1-4
- PHIL204 Introduction to Philosophy 3
- PHIL210 Existentialism 3
- PHIL220 Biomedical Ethics 3
- PHIL250 Philosophy of Religion 3
- PHIL300 Special Topics (if offered) 1-4
- PHIL400 Special Topics (if offered) 1-4
- PHIL490 Directed Study in Philosophy 1-4
- HUMN261 World Literature I 3
- HUMN262 World Literature II 3

Political Science

Degree Requirements

Total Credits Required: 28

Required Courses:

- POLI110 Intro. to American Government & Politics 4
- or**
- POLI160 Intro. to Canadian Government & Politics 4
- POLI202 Sophomore Seminar Political Research & Stats 3
- POLI351 Political Philosophy 4

A minimum of one course in each of the following three fields: (9-12 credits)

- American Politics: POLI301, POLI325, POLI367, POLI467
- Comparative Politics: POLI234, POLI331, POLI334, POLI335
- International Relations: POLI241, POLI245, POLI342, POLI411, POLI413, POLI420

Additional political science electives must be taken to reach 22 credits. A minimum of 12 credits must be at the 300/400 level.

Pre-law

Degree Requirements

Total Credits Required: 22-23

Required Courses:

- LAWS102 Legal Research and Case Analysis 3
- LAWS202 Legal Writing and Analysis 3
- POLI120 Introduction to the Legal Process 3
- POLI222 Introduction to the Legal Profession 3
- POLI467 Constitutional Law and Civil Liberties 4

Select two courses in different disciplines from the following:

- BUSN350 Business Law I 3
- BUSN355 Business Law II 3
- CJUS250 Correctional Law 3
- CJUS319 Substantive Criminal Law 3
- CJUS409 Procedural Criminal Law
- EVRN311 Environmental Law 3
- INTB375 International Business Law 3
- MGMT451 Labor Law 4
- POLI301 Policy Analysis and Evaluation 4
- POLI342 International Environmental Policy 3
- POLI499 Political Science/Public Administration Internship 3

Professional Communication

Degree Requirements

Total Credits Required: 21-22

Required Courses:

- COMM308 Communication Theory 3
- CSCI106 Web Page Design and Development 3
- ENGL222 English Grammar 3
- ENGL306 Technical Writing 3
- COMM399 Internship (1-4)

Elective Courses: (6-7 credits)

- COMM210 Business & Professional Speaking 3
- or**
- BUSN231 Business Communications 3
- COMM211 Advanced Public Speaking 3
- COMM302 Argumentation and Advocacy 3
- COMM320 Public Relations 3
- COMM325 Organizational Communication 3
- ENGL221 Creative Writing 3
- ENGL320 Responding to Writing 3
- JOUR220 Photojournalism 3
- SOWK480 Grantwriting 3
- MRKT281 Marketing Principles & Strategy 3
- MRKT387 Advertising Theory and Practice 3

Psychology

Degree Requirements

Total Credits Required: 22

- PSYC101 Introduction to Psychological Science 3
- PSYC210 Statistics 3
- PSYC212 Experimental Psychology 4
- PSYC Electives 6
- PSYC Elective at 300+ level 3
- PSYC357 Personality Theory 3

- or**
- PSYC396 Tests & Measurements 3
- or**
- PSYC457 Cognition 4
- or**
- PSYC459 Behavioral Neuroscience 4

Public Administration

Degree Requirements

Total Credits Required: 27

- POLI110 Intro. to American Government & Politics 4
- POLI130 Intro. to State and Local Government 4
- POLI201 Intro. to Public Administration 3
- POLI301 Policy Analysis & Evaluation 3
- POLI401 Prin. of Public Administration 3
- POLI499 Political Science/Public Administration Internship 3
- ECON201 Prin. of Macroeconomics 3
- POLI211 Political Science Research & Statistics 4

Public Health

Degree Requirements

Total Credits Required: 22

Required Courses (10 credits):

- HLTH150 Introduction to Public Health 3
- SOCY266 Medical Sociology 4
- KINS332 Health Promotions 3

Choose *Three* courses within *one* of the concentrations below:

Drug Abuse Prevention:

- SOWK204 Fundamentals of Drug Abuse 3
- SOWK292 Substance Abuse Prevention and Treatment 3
- SOWK341 Addiction 3
- SOCY420 Sociology of Cannabis 3

Environmental Health:

- HLTH210 Intro to Health Care Concepts and Issues 3
- SOCY227 Population and Ecology 3
- EVRN317 Environmental Health Applications 3
- POLI342 International Environmental Policy 3
- BIOL385 Public Health Statistics and Epidemiology 3

Health Education:

- KINS140 Health and Fitness 3
- HLTH208 Principles of Human Nutrition 3
- or**
- KINS275 Nutrition Sports Exercise Performance 3
- NURS/ HLTH328 Multicultural Approaches to Health Care 3

- PSYC385 Health Psychology 3

Choose one additional elective course from any [of the courses] listed above or one course from any special topics course offered within the course areas listed above (3 credits).

Public Relations

Degree Requirements

Total Credits Required: 21

Required Courses: (13 credits)

- COMM210 Business & Professional Speaking 3
or
- COMM211 Advanced Public Speaking 3
- COMM302 Argumentation and Advocacy 3
- COMM308 Communication Theory 3
- COMM320 Public Relations 4

Elective Courses: (8 credits)

- BUSN231 Business Communications 3
- COMM280 Understanding Mass Media 3
- COMM307 Classical/Contemporary Rhetoric 3
- COMM325 Organizational Communication 3
- COMM399 Internship in Public Relations 1-4
- CSCI106 Web Design and Development 3
- CSCI107 Web Graphic Design and Development 3
- MRKT281 Marketing Principles and Strategy 3
- MRKT387 Advertising Theory and Practice 3
- POLI325 Politics and Media 3

Recreation Studies

Degree Requirements

Total Credits Required: 24

Required Courses: (16 credits)

- EXER140 Health and Fitness 3
- RECS101 Intro. to Recreation and Leisure Services 3
- RECS105 Program Development and Leadership 3
- RECS295 Practicum 2
- RECS390 Recreation Leader Apprenticeship 1
- RECS482 Administration of Recreation and Leisure Services 4

Departmental Elective: (8 credits)

(six credits from 300- and 400-level classes)

- HMSV480 Grantwriting 3
- RECA210 Lifeguarding 2
- RECA211 Water Safety & Lifeguard Instructor 2
- RECS212 Instructional Methods in Adapted Aquatics 2
- RECS220 Methods in Arts & Crafts 3
- RECS262 Outdoor Recreation 3
- RECS270 Sports Management 3
- RECS280 Readiness in Games, Activities and Sports 3
- RECS320 Dance & Rhythmic Activities for Recreation 3
- RECS344 Adapted Sports and Recreation 3
- RECS362 Land Management for Recreational Purposes 3
- RECS365 Expedition Management 3
- RECS367 National Parks, National Monuments and National Culture 3
- RECS370 Recreation for the Elderly 3
- RECS375 Commercial Recreation 3
- RECS397 Recreation Studies Junior Research Seminar 1
- RECS437 Recreation Studies Senior Research Seminar 1
- RECS435 Research in Recreation and 3
- RECS450 Philosophy of Human Performance and Leisure 3
- RECS496 Selected Research Topics 1

Robotics Technology

Degree Requirements

Total Credits Required: 24 - 27

Required Courses: 12 credits

- EGRS215 Robotics Technology I 2
- EGRS380 Robotics Technology II 2
- EGRS381 Robotics Technology Lab 1
- EGRS365 Programmable Logic Controllers 3
- EGRS480 Manufacturing Automation 3
- EGRS481 Manufacturing Automation Lab 1

Complete all courses from either of the following two sequences:

Engineering Technology Sequence

- EGNR140 Linear Algebra and Numerical Methods for Engineers 2
- EGNR245 Calculus Applications in Technology 3
- EGNR265 "C" Programming 3
- EGRS430 Systems Integration and Machine Vision 4
- EGNR496 Senior Directed Project 3

Computer Science Sequence

- CSCI121 Principles of Programming 3
- CSCI221 Computer Networks 3
- CSCI461 Decision Support and Expert Systems 3
- or**
- CSCI490 Individual Research Topics Computer Science 3
- CSCI or MATH 300-level or above 3

Social Work

Degree Requirements

Total Credits Required: 21

Required Courses:

- SOWK110 Introduction to Social Work 3
- PSYC201 Communication Skills in Counseling 3
- SOWK250 Social Work Practicum 6-9
- SOWK310 Clinical Practice and Diagnosis 3
- SOWK344 Social Welfare Systems 3

One elective course from the following:

- SOCY301 Social Research Methods 3
- PSYC291 Group Counseling 3
- SOWK301 Alternative Dispute Resolution and Conflict Management 3
- SOWK305 Tribal Law and Government 3
- SOCY338 Deviance 3
- SOWK341 Addiction 3
- PSYC391 Family Therapy 3
- SOWK480 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.

Society and Environment

Degree Requirements

Total Credits Required: 25

- BIOL304 The Human Environment 3
- ECON202 Principles of Microeconomics 3
- ECON307 Environmental Economics 3
- INTD490 Senior Directed Study 3
- NSCI103 Environmental Science 3
- POLI342 International Environmental Policy 3
- SOCY102 Social Problems 4
- SOCY227 Population and Ecology 3

Sociology

Degree Requirements

Total Credits Required: 23

- SOCY101 Introduction to Sociology 4
- SOCY238 Social Psychology 4
- **or**
- SOCY214 Criminology 3
- **or**
- SOCY227 Population and Ecology 3

- SOCY310 Development of Sociological Theory 3
or
- SOCY311 Contemporary Sociological Theory 3
or
- SOCY301 Research Methods 3

One elective course from the following:

- SOCY314 Social Change 3
- SOWK480 Grantwriting 3
- SOCY497 Community Action Project 3

Additional sociology courses (9-10 credits) to total a minimum of 23 credits.

Sports Marketing

Degree Requirements

Total Credits Required: 28

Required Courses:

- BUSN231 Business Communications 3
- MRKT281 Marketing Principles and Strategy 3
- MRKT379 Sports and Events Marketing 3
- RECS270 Sports Management 3
- RECS295 Practicum 2
- RECS496 Selected Research Topics 2

Select 12 credit hours from the following electives:

- COMM320 Public Relations 4
- INTB486 International Marketing 3
- MRKT283 Principles of Selling 3
- MRKT381 Consumer Behavior 3
- MRKT383 E-Marketing 3
- MRKT385 Services Marketing 3
- MRKT387 Advertising Theory and Behavior 3
- MRKT388 Retail Management 3
- MRKT480 Marketing Research 3

Substance Abuse Counseling

Degree Requirements

Total Credits Required: 27

- SOWK204 Fundamentals of Drug Abuse 3
- SOWK250 Social Work Practicum 3
- SOWK292 Substance Abuse Prevention and Treatment 3
- SOWK341 Addiction 3
- PSYC201 Communication Skills in Counseling 3
- PSYC240 Behavior Management 3
- PSYC396 Tests and Measurements* 3
- PSYC291 Group Counseling 3
or
- PSYC391 Family Therapy 3

- PSYC259 Abnormal Psychology** 3
or
- SOCY338 Deviance** 3

*Note: PSYC396 has a prerequisite of one of these statistics courses: MATH207, PSYC210 or SOCY302.

**May count toward SOCY/PSYC minor.

Sustainability

Degree Requirements

Total Credits Required: 21

Required Courses (3 credits)

- NSCI103 Environmental Science 3

Law and Policy: 3 credits - one of the following two:

- EVRN311 Environmental Law 3
- POLI342 International Environmental Policy 3

Science & Technology: Minimum 6 credits from the following:

- BIOL235 Introduction Protected Horticulture 3
- EGNR261 Energy Systems/Sustainability 3
- EGNR361 Energy Systems/Sustainability Lab 1
- EVRN315 Human Impacts on Environment 4
- EVRN317 Environmental Health Apps 4
- EVRN435 Environmental Systems 3
- GEOG108 Physical Geography: Meteorology/Climatology 4
- GEOL334 Hydrologic Systems Surface & Ground water 4
- NRES287 Conservation Biology 3
- NRES304 The Human Environment 3

Economics: Minimum 6 credits from the following:

- ECON201 Principles Macroeconomics 3
- ECON202 Principles Microeconomics 3
- ECON307 Environmental Economics 3
- POLI420 Politics of the World Economy 4

Sociology & Human Behavior: Minimum 3 credits from the following:

- BUSN403 Business, Government & Society 3
- PSYC217 Social Psychology 3
- SOCY102 Social Problems 4
- SOCY227 Population & Ecology 3

Minimum of 6 credits at the 300/400 level required.

Theatre

Degree Requirements

Total Credits Required: 24

- THEA112 Acting for Beginners 3
- THEA212 Improvisational Acting 3
- THEA251 Theatre History 3
- THEA309 Survey of Great Playwrights 3
- THEA312 Acting Shakespeare 3
- THEA333 Play Analysis 3
- THEA412 Acting Studio 3

Required Practicum (3 credits):

- THEA162 Practicum-Acting in Practice 1
- THEA163 Practicum-Production Team 1
- THEA164 Practicum-Healthcare Simulation 1

Emeriti Faculty

Allan, Thomas A., Associate Professor of Biology (1984-2017); AS 1971, Northwestern Michigan College; BS 1973, Central Michigan University; MS 1978, Michigan Technological University; PhD 1984, University of Maine, Orono

Anderson, Melvin L., Professor of Chemistry (1969-1993); BS 1953, MS 1955, Michigan Technological University; PhD 1965, Michigan State University (deceased)

Andary, Carol, Professor of Legal Studies (1983-2016); BS 1977 Western Michigan University; JD 1980 Wayne State University; Licensed to practice law in State of Michigan 1980

Anderson, Roland A., Associate Professor of Office Administration (1969-1986); BA 1953, Wisconsin State University-Whitewater; MA 1961, Northern Colorado University-Greeley

Arbic, Bernard J., Professor of Mathematics (1967-2000); BS 1962, Massachusetts Institute of Technology; MA 1967, Bowdoin College; PhD 1972, University of Wyoming

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Blashill, James R., Associate Professor of Criminal Justice and Fire Science (1995-2008); BS 1963, Wayne State University; MS 1976, Michigan State University

Boger, Thomas M., Associate Professor of Mathematics and Computer Science (1981-2015); BS 1973, MS 1974, Michigan State University

Brown, Lewis M., Professor, Geology and Physics (1979-2012); BA 1965, Cornell College; MS 1967, University of Iowa; PhD 1973, University of New Mexico

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 (deceased)

Carlson, Arthur F., Associate Professor of Physics (1947-1970); BS 1935, University of Minnesota. (deceased)

Carlson, Delphine, Associate Professor of Mathematics (1947-1969); BA 1934, MA 1938, University of Michigan (deceased)

Campagna, Carol A., Associate Professor of Nursing (1984-2001); BSN 1964, D'Youville College; MSN 1969, University of Colorado

Castor, William N., Professor of Political Science (1971-1994); BA 1951, Middlebury College; MA 1952, Columbia University; PhD 1975, University of Denver (deceased)

Chandra, Purna, Professor of Microbiology (1967-1994); BS 1949, MS 1951, Agra University; PhD 1958, Oregon State University (deceased)

Chelberg, Raymond R., Professor of Chemistry (1946-1970); BS 1926, Gustavus Adolphus College; MS 1931, University of Minnesota (deceased)

Cole, Wallace, Associate Professor of Mathematics (1955-1969); BS 1926, MA 1928, University of Wisconsin (deceased)

Conboy, Richard T., Professor, Political Science/Coordinator of the Center for Social Research (1988-2011); BA 1967, MPA 1969, University of Dayton; PhD 1984, The American University

Connaughton, M. Carole, Professor of Nursing (1984-1999); BSN 1956, Saint Mary's College; MSN 1967 and PhD 1974, Indiana University

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 (deceased)

Coullard, Collette R., Professor of Mathematics and Computer Science (2004-2018); BS 1980, Lake Superior State College; MS 1981, PhD 1985, Northwestern University

Cullen, John C., Professor of Spanish (1967-2001); BA 1963, MA 1965, Michigan State University; PhD 1973, Interamerican University (deceased)

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 (deceased)

Delaney-Lehman, Maureen J., Associate Professor/Librarian (1989-2009); BM 1975, Western Michigan University; MS 1980, Michigan State University; MLS 1988, University of Kentucky

Dobbertin, Leslie A., Professor of Sociology/Chair, Social Sciences (1972-2013); BA 1965, Central Michigan University; MA 1972, Iowa State University; PhD 1989, Michigan State University

Dorrity, Daniel T., Professor of History/Dean, College of Arts, Letters and Social Sciences (1970-2014); BA 1966, MA 1967, Wayne State University; PhD 1973, University of Michigan (deceased)

Duesing, Paul R., Professor of Mechanical Engineering (1984-2013); BSME 1971, MSME 1973, University of Michigan; Licensed professional engineer for Michigan and Ohio

Duesing, Sherilyn R., Associate Professor of Mathematics (1993-2013); AS 1971, North Central Michigan College; BS 1976, Central Michigan University; MS 1998, Northern Michigan University

Duwe, Arthur E., Professor of Biological Science (1968-1991); BS 1949, Alma College;

MS 1950, PhD 1953, Ohio State University (deceased)

Erkkila, John E., Professor of Business and Economics (1990-2009); BS 1970, Lake Superior State College; MA 1971, University of Windsor; PhD 1988, University of Western Ontario

Fabbri, Anthony J., Associate Professor of Computer Science (1996-2008); BA 1965, MS 1967, Indiana State University; EdD 1995, University of Louisville

Flynn, Michael, Professor of English (1961-1986); BA 1954, Central Michigan University; MA 1964, Northern Michigan University (deceased)

Francisco, Wayne H., Assistant Professor of Criminal Justice (1973-1983); BS 1950, Eastern Michigan University; MA 1967, MS 1971, Michigan State University (deceased)

Gaertner, Georgegeen P., Associate Professor of English (1965-2000); BA 1959, Michigan State University; MA 1963, University of Michigan (deceased)

Gaertner, Robert C., Associate Professor of Finance (1965-2000); BBA 1964, University of Notre Dame; MBA 1965, Michigan State University (deceased)

Gimpel-Kabke, Lynn M., Assistant Professor of Nursing (1992-2016); BSN 1989, Lake Superior State University; MSM 1994, Northern Michigan 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 (deceased)

Gleason, Gilbert J., Professor of Biology (1961-1988); BS 1958, MA 1960, Central Michigan University (deceased)

Gregory, H. Lorraine, Assistant Professor of Mathematics, Education (2003-2018); BSc 1972, BEd 1984, University of Saskatchewan; MEd 1997, EdD 2001, Duquesne University

Gutowski, Mieczyslaw, Associate Professor of Mathematics (1984-2004); MS 1965, University of Lodz, Poland; PhD 1973, University of Gdansk, Poland

Haag, William L., Professor of Chemistry (1984-2001); BS 1961, Loras College; MS 1965, PhD 1971, University of Nebraska

Halsey, Alice I., Associate Professor of Nursing (1963-2000), BSN 1962, University of Michigan; MSN 1977, Wayne State University

Harris, Earle B., Associate Professor of English (1976-1987); AB 1946, University of Michigan; BD 1947, ThM 1964, Princeton Theological Seminary (deceased)

Harrison, Galen H., Assistant Professor of Mathematics (1963-1996); BS 1960, MA 1963, Michigan Technological University

Heyns, Terry, Professor of Fire Science (1989-2015); AB 1965, Saint Louis University; MA 1967, University of Kansas; Ph.D. 1989, Kansas State University

Howe, Margaret, Associate Professor of Humanities (1969-1981); AB 1932, Northwestern University; MA 1965, Northern Michigan University (deceased)

Hudson, John S., Associate Professor of Accounting (1970-2002); BA 1963, MA 1965, Michigan State University; MBA 1967, Western Michigan University

Jemison, Eugene F., Associate Professor of Humanities (1969-1986); BA 1946, Washburn University; MFA 1948, Kansas City Art Institute (deceased)

Jennings, Richard P., Professor of Speech (1970-December 1998); BA 1950, University of Michigan; Master of Divinity 1953, Virginia Theological University; MA 1970, Central Michigan University (deceased)

Johnson, Gary R., Professor, Political Science (1978-2015); BA 1972, Augustana College; MA 1975, PhD 1979, University of Cincinnati

Jones, Charles W., Professor of Chemistry (1970-2001); AB 1954, Western State College of Colorado; MS 1957, PhD 1973, Oklahoma State University

Keller, Barbara J., Professor of Chemistry (1999-2020); BS 1977, BS 1978, Idaho State University; BS 1986 Idaho State University, Pocatello, Idaho; PhD 1995, Montana State University, Bozeman, Montana

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); Honorary Title "Dean Emeritus" of Lake Superior State University; BS 1949, Michigan Technological University (deceased)

Kennedy, Robert E., Associate Professor of Engineering (1948-1971); BS 1932, MS 1939, University of Michigan (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 (deceased)

Land, Roger, Assistant Professor of Fire Science (1996-2015); BS 1972, Brigham Young University; MS 1974, University of Utah

Lehman, John W., Professor of Chemistry (1966-2001); BS 1960, McPherson College; PhD 1969, University of Colorado

Linderoth, Leon W., Professor of English (1968-2000), BA/BS 1958, Central Michigan University; MA 1960 and PhD 1966, Florida State University (deceased)

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Marken, Marzale, Associate Professor of Engineering Technology (1955-1984); BS 1948; MA 1956, University of Minnesota (deceased)

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McDonald, David M., Professor of Engineering (1973-2017); BSEE 1969, MSEE 1971, Michigan Technological University

McPherson-Doyle, Debra, Associate Professor of Recreation Studies and Exercise Science (1976-2016); BS 1974, Northern Michigan University, MA 1983, Northern Michigan University

Meehan, Mary Jo, Assistant Professor/Counselor (1982-2019); BS 1977, MA 1981, Northern Michigan University

Mickewich, Thomas, Professor of Mathematics (1967-2002); BA 1964, MA 1967, University of Maine

Money, Robert M., Professor of History (1969-2010); BA 1953, Northern Michigan University; MA 1958, University of Michigan (deceased)

Moody, James, Professor of History (1971-2010), Instructor of History (2010-2017); BA 1959, Greenville College; MA 1960, Michigan State University (deceased)

Mullin, C. Randolph (Randy), Professor of Physics/Coordinator of the Planetarium (1969-2009); BS 1959, St. Vincent College; PhD 1964, University of Notre Dame

Neveu, Ruth, Assistant Professor/Librarian (1977-2016); BA 1977, Lake Superior State College, MA 1984, University of Michigan

Otis, Franklin F., Professor of Mathematics (1948-1978); B.Ed., River Falls State, 1937; MS 1948, Wisconsin (deceased)

Person, Steven J., Professor of Biology (1973-2004); B.S. 1966, MS 1968, Iowa State University; PhD 1976, University of Alaska (deceased)

Poisson, Joseph A., Associate Professor of Physical Education (1963-1976); SS 1940, Northern Michigan University; MA 1957, University of Michigan (deceased)

Ratwik, Susan H., Professor of Psychology (1977-2013); BA 1969, University of Minnesota; MS 1975, PhD 1978, University of Notre Dame

Reilly, Raymond, E., Professor of Biology and Chemistry, (1966-1990); BS 1951, MS 1951, MS 1963, PhD 1970, Michigan State University (deceased)

Samson, 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 (deceased)

Sawyer, Timothy J., Professor of Psychology (1976-1989); BA 1972, Northern Michigan University; MA 1974, PhD 1976, University of Nevada

Schirer, Thomas E., Professor, Humanities and Philosophy/Department Head, Arts and Letters (1984-2014); BA 1973, MA 1976, University of California; PhD 1983, Friedrich-Alexander-University

Schmitigal-Snyder, Linda, Professor of Management (1989-2015); BS 1982, Lake Superior State College; M.Ed. 1990, Central Michigan University; MBA 1993, Central Michigan University; Ed.D. 2010, Central Michigan University

Schoenemann, Shirley, Associate Professor of Education (1983-2012); BA 1966, Western Michigan University; MAT 1986, Oakland University

Schwiderson, Keith E., Assistant Professor, Engineering and Technology (1976-2011); BS 1979, Lake Superior State University; MS 1981, Northern Michigan University

Shannon, MaryAnne P., Associate Dean/Professor, Nursing (1988-2011); BSN 1975, University of Michigan; MSN 1979, Wayne State University; PhD 2005, Michigan State University; Advanced Practice Nurse, Board Certified in Gerontological Nursing since 1991

Sherman, Karl J., Associate Professor of Accounting (1971-2000); BS 1965, Northern Michigan University; MS 1967, Southern Illinois 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

Speer Kirkpatrick, Nancy, Professor of Biology (1995-2016), Academic Dean-Schools of Biological Sciences, Mathematics and Computer Science, and Physical Sciences (2015-2016); BS 1972, MS 1979, and Ph.D. 1993, Miami University

Stai, Deborah K., Professor, Biological Sciences (1991-2011); BS 1974, BS 1978, Mankato State University; MA 1980, PhD 1989, Union Institute (deceased)

Stough, Bessie, Associate Professor of Mathematics (1947-1963); BA 1923, MA 1929, University of Michigan (deceased)

Suggitt, Randall G., Assistant Professor of Mathematics and Computer Science (1983-2012); BS 1976, Lake Superior State College; MA 1979, University of Montana

Thesing, Gary L., Professor of Mathematics (1971-1999), BA 1969, Saint Mary of the Plains College; MS 1964, University of Notre Dame; EdD 1971, Oklahoma State University

Thomsen, Viggo, Associate Professor of Biological Sciences (1947-1973); BA 1932, University of Michigan (deceased)

Toffolo, E. Gary, Professor of Humanities (1970-2001); BS 1958, Northwestern University; MA 1961, University of Chicago

Truckey, John, Associate Professor of Counseling (1966-1986); BS 1958, MA 1964, Northern Michigan University (deceased)

Vialpando, Edeltraute, Professor of Foreign Languages (1967-1988); PhD 1944, Charles University, Prague, Czechoslovakia (deceased)

Ward, Louis R., Professor of English (1961-1981); BA 1939, MA 1940, University of Colorado; PhD 1959, Purdue University (deceased)

Weber, Charles L., Associate Professor of Electrical Engineering (1970-1999), BS 1964 and MSEE 1970, Michigan Technological University

Wilson, Paul W., Professor of Mathematics (1963-2000), BS 19621 and MA 1963, Central Michigan University

Youngs, Stephen P., Professor and Psychometrist (1947-1968); BS 1930, Northern Michigan University; MEd 1941, Colorado. (deceased)

Emeriti Staff

Adams, Ray, Dean, College of Engineering and Mathematics; BS 1975, MS 1978, Nicholls State College

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Bugbee, Thomas R., Vice President for Student Affairs/Secretary to the Board of Trustees; BA 1973, Michigan State University; MA 1974, Eastern Michigan University (deceased)

DePlonty, Stella R., Assistant to the Provost for Academic Records (1960-2011)

Fenlon, Paul T., Director of Employment Services; BS 1964, Western Michigan University

Harger, Bruce T., Vice President for Academic Affairs and Provost (1967-2007); BA 1966, MA 1967, PhD 1991, Michigan State University

Markstrom, Mae E., Dean of the School of Health and Human Services (1968-1997); Nursing Diploma 1959, Grace Hospital of Nursing; BA 1970, Lake Superior State University; MSN 1977, Wayne State University; PhD 1991, Michigan State University

McLain, Tony L., President (2009-2014); BS 1969, MA 1971, Western Michigan University; PhD 1986, Michigan State University

Michels, Fredrick A., Dean of Academic Services (1976-2011); BS, University of Wisconsin; MLS, EdD, Western Michigan University

Mitchell, Peter T., President (2017-2018); A.B. 1967, Albion College; MA 1968, University of Michigan; EdS 1972, Indiana University; EdD 1981, Northwestern University; LHD 2007, Albion College

Munsell, William T., Financial Aid Director (1967-1998)

Pike, Harry E., Vice President for Student Programs and Services (1969-1997); BA 1957, University of Washington; PhD 1969, Michigan State University

Tomlinson, Earl C., Director of Financial Planning and Investments (1972-1980; 1984-1997); BS, Ferris State College; MA, Central Michigan University

White, Beverly E., Director of Human Resources (1976-2011); BS, Lake Superior State College; MBA, Lake Superior State University

Youngblood, Betty J., President (2002-2007); BA 1965, Oakland University; MA 1966, PhD 1970, University of Minnesota

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1970-1978

Mr. Jack Rombouts (Deceased)
1984-1992

Mr. Daniel Rose (Deceased)
1974-1982

Mr. Charles Schmidt
2002-2010

Mr. Cory Somes
1970-1980

Mr. E. Gary Toffolo
2006-2014

Mr. Devereaux Trepp
1992-2006

Mr. Thomas Weiss
1990-1998

Dr. Ruthann Williams
1984-1992

Dr. Gary Wolfram
2000-2008

Dr. James Woodruff
1976-1984

Officers of Administration

[Website](#)

Dr. Rodney S. Hanley
President
Lake Superior State University



Senior Management Team

Ms. Wendy Beach
Director of Human Resources, Safety and Risk



Dr. Michael Beazley
Dean of Student Affairs



Mr. Steven Betz
Government Relations Officer



Mr. Thomas Coates
Executive Director of the Foundation



Dr. Lynn Gillette
Provost & Vice President for Academic Affairs



Dr. Rodney S. Hanley, Ph.D.
President



Dr. David Paitson
Director of Athletics



Mr. Fred Pierce III
Dean of Admissions & Marketing



Mr. Morrie Walworth
Vice President for Finance and Operations



ACTG132
Principles of Accounting I
(4,0) 4

An introduction to the principles and procedures of accounting as applied to proprietorships and corporations. Areas of study include the accounting, internal control and the asset, liability and equity sections of the balance sheet. Prerequisite: Two years of high school algebra and equivalent/satisfactory score on ACT/SAT or Placement Exam or MATH102 with a grade of C or better.

ACTG133
Principles of Accounting II
(4,0) 4

This course emphasizes the role of managerial accounting information within a firm. Topics include budgeting, responsibility accounting, cost allocations, cost behavior, decision models, product costing, cost control, performance evaluation, capital budgeting, cash flows and methods of financial analysis. Prerequisite: Grade of C or higher in ACTG132.

ACTG232

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: ACTG132 and ACTG133.

ACTG233

Intermediate Accounting II

(4,0) 4

Continuation of ACTG232 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: Grade of C or higher in ACTG232.

ACTG332

Cost Management I

(4,0) 4

An advanced study of managerial accounting as it applies to management practices. Topics include job order and process costing systems, value chain management, activity based costing and management, joint product costing, CVP analysis, cost allocations, budgeting, and financial planning models, and allocation of support activity costs. Prerequisite: ACTG133.

ACTG333

Cost Management II

(4,0) 4

A continuation of ACTG332. Topics include strategic decision making, strategic issues in capital investment decisions, standard costing and variance analysis, performance evaluation and the balanced scorecard, responsibility accounting, investment centers and transfer pricing, target costing, theory of constraints, and strategic pricing, managing and controlling quality, management compensation, and business valuation. Prerequisite: ACTG332.

ACTG334

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: ACTG233, ACTG332, and introductory data processing course.

ACTG350

Income Tax Practicum

(0,2) 1

Field instruction and practical experience in federal and state income tax preparation. Prerequisite: ACTG421. Repeat up to two times for a maximum of 2 credits.

ACTG421
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: ACTG133 and Junior standing or approval of the department.

ACTG422
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: ACTG421.

ACTG427
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: ACTG233 and 333.

ACTG432
Advanced Accounting: Consolidations
(4,0) 4

This course involves a study of corporate business combinations and the preparation of related consolidated financial statements. International accounting issues related to the hedging of foreign currency transactions, translation of foreign financial statements and the application/comparison of international accounting standards will also be presented. Prerequisite: ACTG233 with a grade of C or higher.

ACTG433
Advanced Accounting: Governmental
(4,0) 4

An introduction to governmental and nonprofit accounting as applied to state and local governments and other nongovernmental not-for-profit entities including colleges and universities, and health care organizations. Areas of study include both the source of GASB standards and statements and the application of this theory to the governmental accounting cycle. Students will also be exposed to and apply a variety of financial performance measures unique to this sector of the economy. Students will prepare a monthly transaction analysis and complete a governmental practice set. Prerequisite: ACTG233 with a grade of C or higher.

ACTG450
CPA Exam Preparation - Financial Accounting and Reporting
(3,0) 3

This course prepares students for the financial accounting and reporting section of the CPA exam. Students will complete a comprehensive review of financial accounting concepts, standards and reporting requirements used by business, not-for-profit and state and local government entities. Students will also become familiar with the format and administration of this exam section. Students will complete this course as an independent study with guidance from a faculty member. Prerequisite: Senior status and permission of instructor.

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ARTS250

Art History and Appreciation I

(4,0) 4

The study of art beginning with the prehistoric caves in France through the religious presentations in Mesopotamia and Egypt. The humanistic-centered art of Greece and Rome follows. Powerful expressions of faith dominate art in the Christian and Islamic styles that evolved after the fall of the Roman Empire. The early renaissance offers a religious art that combines the elements of faith with a renewed interest in the art of classical Greece and Rome. Students from all academic disciplines can benefit from this course.

ARTS251

Art History and Appreciation II

(4,0) 4

A study of European art from the High Renaissance to the present day. Beginning with Leonardo and Michelangelo, this class will examine the evolution of western art in the works of Rembrandt, Bernini, David, and Delacroix to mention only a few. Of particular importance is the universal Romantic style that inspired artists in America. This class will examine how the industrial revolution and the invention of the camera forced artists to seek new ways of presentation. Modern styles such as Impressionism, Cubism, Surrealism and Abstract Expressionism follow. Art in the 20th and 21st centuries will be studied in relation to science, two world wars, and the societal changes that characterize the contemporary world.

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BIOL104

Survey of General Biology

(3,3) 4

This course is a non-majors biology course that will cover the major units of general biology: (1) cells and energy; (2) genetics; (3) evolution; (4) organismal biology; (5) ecology. Developing a solid understanding of the fundamentals of general biology is vital to being an informed citizen about advances in the medical and food sciences, foundational and new information about the organization of life, and current issues of environmental and ecological concern. Course content is tied to the State of Michigan's benchmarks for training elementary school teachers, but any students interested in the life sciences are encouraged to take this class. The laboratory is designed to illustrate the course content as well as illustrate the principles of inquiry. Prerequisites: MATH088 and READ091 or equivalent test scores. Pre or Corequisite ENGL110.

BIOL105

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: Pre or Corequisite ENGL110.

BIOL106

Boat Handling and Navigation

(2,3) 3

Topics related to the art of seamanship are covered, including the basics of boating and safety. Piloting and navigation are emphasized with an understanding of weather, waves, and wind, as well as the use of board electronic equipment. Pre- or corequisites: MATH102.

BIOL121

Human Anatomy and 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 complement the lecture topics. This course may not be used as a general education natural science elective nor does this sequence apply toward a major or minor in biological science. Prerequisites: High school chemistry, MATH088 or equivalent satisfactory score on ACT/SAT or Placement Exam, Pre or Corequisite ENGL110.

BIOL122

Human Anatomy and 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: BIOL121.

BIOL131

General Biology: Cells

(3,3) 4

This course is an introduction to the cellular aspects of general biology. This course will provide an overview of cellular biology and serve as a framework for further biological studies. Topics to be covered include basic chemistry of the cell, function of cellular organelles, cellular metabolism including respiration and photosynthesis, the cell cycle, mitosis, meiosis, simple transmission genetics, introduction to molecular and developmental biology. The laboratory introduces the student to inquiry based scientific method. Prerequisites: MATH088 or equivalent scores on the math placement exams; Pre or Corequisite ENGL110.

BIOL132

General Biology:Organisms

(3,3) 4

An introduction to the diversity of life, including the morphology, physiology, reproduction, general habitats and taxonomy of organisms. Adaptation to environment and modern concepts of evolution are stressed as unifying themes

throughout the course. Prerequisites: MATH088 or equivalent scores on the math placement exams; Pre or Corequisite ENGL110.

BIOL199

Freshman Seminar

(1,0) 1

A partial focus for this course will be on academic skills and the transition from high school to college. Topics will include time management, use of campus resources, development of critical thinking, and strengthening study skills. At other times students will meet in discipline-based groups in conjunction with BIOL299, BIOL399 and BIOL499. These meetings will include discussion of literature relevant to the discipline and progress reports from upper-class students engaged in scholarly projects.

BIOL202

Plant Science: Ident/Diversity

(2,3) 3

Identification of plants, with emphasis on local flora; systematics and overview of the biodiversity across plant families, with emphasis on seed plants; ecological, cultural and economic concerns of select plant species. Prerequisite: BIOL132

BIOL204

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: BIOL131 and CHEM115.

BIOL206

Medical Laboratory Practices

(2,0) 2

Covers fundamental principles of medical laboratory science including safety, specimen handling, measurement, common calculations, organization of the medical laboratory, automation, and quality control. Prerequisites: MATH111, CHEM115, BIOL131.

BIOL208

Principles of Animal Biology and Health

(3,0) 3

The course provides a comprehensive overview of the biology of animals that are in close association with humans, including food animals, companion animals and zoo animals. The main topics will emphasize fundamental concepts of animal anatomy and physiology, animal nutrition and growth, animal breeding and selection, animal health and management, ecology and behavior, diversity and evolution, as well as applications in care and use of specific animal species and phyla. Prerequisite: BIOL131 and BIOL132.

BIOL220

Genetics

(3,3) 4

This course covers the three major subdivisions of the study of genetics - Mendelian or transmission genetics, molecular biology, and population genetics. Transmission genetics topics will include traditional genetics problems and modes of inheritance; mitosis, meiosis and control of the cell cycle; chromosomal structure and recombination. Molecular topics will include information on DNA structure and replication, transcription, translation, gene cloning, genomics, and current research in DNA technology. Topics in population genetics will include aspects of the Hardy-Weinberg theory. The laboratory will include exercises in both traditional and molecular genetics. Prerequisites: BIOL131 and CHEM115.

BIOL223

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: CHEM105 or CHEM110 and BIOL122. Does not apply towards a major or minor in biology.

BIOL232

Introduction to Aquaponics

(3,3) 4

The course will cover the main topics of aquaponics including an overview of the concept; coupled versus uncoupled systems; microbiology (friendly microbes and pathogens), water chemistry and nitrogen-cycling, plant growth and nutrition, aquatic animal growth and nutrition, automation and system monitoring, sustainable energy options. Pre-requisite BIOL132 or BIOL104 and CHEM115 or CHEM108 and CHEM109.

BIOL235

Introduction to Protected Horticulture

(2,3) 3

An introduction to growing crop plants in hoopouses, greenhouses or other protective structures. Topics include infrastructure considerations, management of growth conditions and disease/pests specific to growing indoors, variety selection, monitoring and adaptive management, and cost management. Prerequisites: BIOL 104 or both BIOL 131 and BIOL 132.

BIOL243

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: BIOL132 and sophomore standing.

BIOL280

Biostatistics

(2,2) 3

A course in the design and analysis of biological experiments. The focus of the course is the development of a systematic method for determining an appropriate statistical technique and the interpretation of results in terms of biological science. Prerequisites: BIOL131, BIOL132, and MATH111 or Calculus.

BIOL290

Independent Study in (Discipline)

(1-4,0) 1-4

Special studies and/or research in biology for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of department and college dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no 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 Natural Science.

BIOL299

Sophomore Seminar

(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BIOL199, 399 and 499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Sophomores will assist with ongoing projects and will be guided by faculty and juniors enrolled in BIOL399 to conduct a comprehensive, annotated literature search in their area of interest. Prerequisite: BIOL199 and ENGL111.

BIOL302

Invertebrate Zoology

(2,3) 3

A study of the invertebrate groups with emphasis on morphology, phylogeny and life cycles. Prerequisite: BIOL132.

BIOL303

General Entomology

(2,3) 3

An introduction to the biology, ecology and systematics of the insects. This course covers fundamentals of insect taxonomy and physiology; and the varied roles insects play in the natural world and in human history and culture. Prerequisite: BIOL132.

BIOL306

Mycology

(2,2) 3

Covers fungal structure, reproduction, and classification, fungal infections and toxicoses of humans and plants, food uses of fungi, fungal identification, and fungal cultural. Laboratory covers techniques for fungal cultural, identification, and laboratory diagnosis of mycoses. Prerequisite: BIOL132 and BIOL204.

BIOL307

US Food System

(3,0) 3

An overview of how food is produced, sold, bought and used in the US. The class will analyze the ecological, economical, social, cultural, political and ethical implications of the conventional operation of the US food systems and investigate emerging alternatives designed to address these issues. Prerequisites: ENGL111, Junior status.

BIOL315

Plant Sciences: Structure and Function

(3,3) 4

Organization of the plant body, photosynthesis, water relations, mineral nutrition, growth and reproduction, plant responses to stress, ecological and economic importance of secondary metabolites. Prerequisites: BIOL131, BIOL132, CHEM115.

BIOL330

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: BIOL131, BIOL132 and CHEM116.

BIOL332

Embryology

(2,2) 3 Alternate Years

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: BIOL131 and BIOL132. (BIOL243 is highly recommended.)

BIOL335

Principles of Animal Nutrition

(3,0) 3 Alternate Years

A scientific approach to the nutritional role of water, carbohydrates, proteins, lipids, minerals, and vitamins. The course will emphasize comparative aspects of gastrointestinal anatomy and physiology for livestock, wildlife, and fish. Prerequisites: CHEM116.

BIOL337

General Ecology

(2,3) 3

A survey of concepts and applications of plant and animal physiological, morphological, behavioral, population, community, and systems ecology. Prerequisites: BIOL131, BIOL132 and MATH111.

BIOL380

Clinical Hematology and Hemostasis

(3,3) 4 Alternate Years

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: CHEM351 and BIOL330 as a pre- or corequisite.

BIOL385

Public Health Statistics and Epidemiology

(3,0) 3

Principles, purpose and methods of descriptive and analytic epidemiology with emphasis on environmental health. Prerequisite: BIOL280 or PSYC210 or SOCY302 or MATH207.

BIOL389

Internship in (Discipline)

(3-4) 3-4

A variable credit practicum course in which the students will perform research and/or gain work experience under the direction of a faculty mentor and a qualified supervisor. Students are expected to spend a minimum of 45 hours in an approved work setting for each credit earned. The course may be repeated once for a maximum of eight credits. Student interns will be required to write weekly updates or journal entries to be submitted to their LSSU faculty mentor for evaluation of what the student has learned. Prerequisites: 2.50 GPA in major and permission of faculty mentor or department chair.

BIOL399

Planning Research Project

(1,0) 1

A one credit practicum course in which students meet weekly with a faculty mentor to develop a senior research project, complete a formal research proposal, and present the research proposal to peers and faculty. Students and mentors will also meet in larger groups to discuss relevant literature and provide constructive feedback of student projects from BIOL499 and BIOL399. Prerequisites: BIOL280, BIOL299 and COMM101.

BIOL405

Animal Behavior

(3,0) 3 Alternate Years

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 BIOL330 or 337. Offered even-numbered fall semesters.

BIOL406

Immunohematology

(2,3) 3 Alternate-Year Course

Fundamentals of blood banking in the ABO, Rh and other blood group systems; blood component preparation and utilization; transfusion complications; quality control and problem solving. Laboratories include techniques used in immunology/serology; blood grouping; compatibility testing; and antibody identification. Offered even-numbered springs. Prerequisites: BIOL220. Pre- or co-requisite: BIOL423.

BIOL420

Evolutionary Analysis

(3,0) 3

This course explores the fundamental mechanisms of evolutionary process and

speciation, and illustrates the use of evolutionary analysis as a problem-solving tool. Issues of current interest in ecology, conservation, animal behavior, human medicine and a variety of other fields are addressed from the evolutionary perspective to explain biological phenomena and community interactions. Prerequisite: BIOL220.

BIOL421

Advanced Cell & Molecular Biology

(3,3) 4

This course will examine cellular structure and function with emphasis on organelle ultrastructure, cell membranes and permeability, cellular interactions, and the molecular foundations of genetic mechanisms and cell energetics. Prerequisites: BIOL220 and CHEM351.

BIOL422

Parasitology

(2,2) 3

A study of the morphology, taxonomy, habitats, pathology and life cycles of parasites. Prerequisites: BIOL131 and 132.

BIOL423

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: BIOL131, BIOL132, BIOL204 and CHEM351.

BIOL425

Virology

(2,3) 3

The basic concepts of virology are discussed. Lab will cover some traditional virology methods but will emphasize recent molecular approaches to viral identification. Prerequisite: BIOL204 and BIOL220.

BIOL426

Animal Disease and Zoonoses

(3,0) 3

The course covers the environmental conditions that favor disease outbreaks, and the affects of diseases on the functional dynamics of both terrestrial and aquatic ecosystems, including human public health. Basic concepts of the ecology of infectious diseases and management strategies for functional ecosystems will be discussed. Prerequisite: BIOL337.

BIOL433

Histology and Histopathology

(3,3) 4 Alternate Years

A systems approach is used to study the microscopic anatomy of mammalian tissues and organs. Related physiological processes are integrated with the anatomical studies. The course includes an intensive laboratory experience where students will learn to visually identify diseased tissue. They will also learn methods of sample preparation including sectioning and staining for microscopic identification of

pathogens. Prerequisites: BIOL330.

BIOL437
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: BIOL202, BIOL337 and MATH207.

BIOL450
Laboratory Apprenticeship (Discipline)
(0,3) 1

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. This is a credit/no credit course.

BIOL455
Clinical Chemistry and Body Fluids Analysis
(3,2) 4 Alternate Year Course

Covers molecular analytes that are measured in blood, urine, and body fluids: the physiologic and pathologic processes that affect the levels of these analytes, correlations of analyte levels with disease, methods and instruments used to measure them, and principles and practices of quality control. Offered fall of even-numbered years. Prerequisites: MATH207, CHEM332. Pre- or co-requisite: CHEM351. It is highly recommended that students take BIOL330, Animal Physiology, before taking BIOL455.

BIOL460
Clinical Internship
3 or 9

A six-month internship experience in a clinical laboratory. This course is open only to students in the Medical Laboratory Science Major, Clinical Concentration. Students will be placed at one of LSSU's affiliate clinical sites. There they will perform routine analyses of clinical specimens under the supervision of clinical site personnel. Students will be trained in chemical, hematological, microbiological, coagulation, and blood bank analyses. Prerequisites: BIOL380, BIOL406, BIOL423, BIOL455, BIOL480 and Permission of Course Director. Variable credits, 3 or 9; must be repeated once for a maximum of 12 credits.

BIOL480
Advanced Clinical Microbiology
(3,3) 4 Alternate Years

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: BIOL204 and CHEM326.

BIOL490
Independent Study in (Discipline)
(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 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 Natural Science.

BIOL495

Senior Project

(0,6) 2

A practicum under the guidance of a faculty member. The student will conduct a scholarly project based on the proposal submitted by the student in BIOL399 (or an appropriate substitute). Prerequisite: BIOL399.

BIOL499

Senior Symposium

1

A one credit practicum course in which students meet weekly with a faculty mentor to complete the formal senior thesis paper, and prepare both oral and poster presentations for the senior symposia. Students and mentors will also meet in larger groups to discuss relevant literature and provide constructive feedback of student projects from BIOL499 and BIOL399. Prerequisites: BIOL280, BIOL299 and COMM101.

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BUSN101

Freshman Seminar

(1,0) 1

This course will enable Business students to improve their academic skills, knowledge and utilization of Lake Superior State University (LSSU) services, familiarity with the unique local community of Sault Ste. Marie, understanding of the field of business, and individual professionalism in representing themselves as future businesspeople and LSSU advocates.

BUSN121

Introduction to Business

(3,0) 3

This course is intended to provide students a broad overview of the complex and dynamic contemporary world of business. The course will illustrate how human resources management, marketing, production, and finance are major functions that work together to help owners, employees and customers reach their objectives. Business must operate within economic, social, natural, technological, international, legal, and political environments.

BUSN211

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: MATH111.

BUSN231
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: ENGL111.

BUSN299
Internship in [Discipline]
(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 achieve the school approved learning objectives/outcomes established for the internship. Students are expected to spend a minimum of 45 hours (1 credit), 90 hours (2 credits), 135 hours (3 credits), or 180 hours (4 credits) in an appropriate work setting. This course may be repeated once for a maximum of four total credits. Prerequisites: 2.5 GPA, and approval of the Dean.

BUSN308
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.

BUSN350
Business Law I
(3,0) 3

This portion of business law covers the law applicable to contracts, sales, personal property and bailments.

BUSN355
Business Law II
(3,0) 3

This portion of business law covers the law applicable to commercial paper, corporations, partnerships, agency and employment.

BUSN389
Entrepreneurship
(3,0) 3

A study of individual small firms: start-up, on-going management, challenges, and requirements for success. Students will apply both strategic planning and the knowledge acquired from other business courses to (a) demonstrate understanding and competence in using S.A.P. in small business decision-making and operations, (b) develop a viable business plan for a new small business, and (c) utilize problem-solving for other local small businesses, where required, in an advisory capacity. Prerequisites: BUSN121, ACTG132 or ACTG230, MRKT281.

BUSN399

Internship in [Discipline]

(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 achieve the school approved learning objectives/outcomes established for the internship. Students are expected to spend a minimum of 45 hours (1 credit), 90 hours (2 credits), 135 hours (3 credits), or 180 hours (4 credits) in an appropriate work setting. This course may be repeated once for a maximum of four total credits. Prerequisite: 2.5 GPA, junior standing or higher, employee and instructor approval of the Dean.

BUSN403

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: ECON202 and junior standing.

BUSN405

Business Ethics and Social Responsibility

(3,0) 3

Business ethics in organizations requires value-based leadership and purposeful actions that include planning and implementation of standards of appropriate conduct. This course will prepare students to be good corporate citizens through the study of business ethics, social responsibility, ethical decision making, corporate codes of ethical conduct, and how ethical behavior relates to organizational performance. Prerequisite: MGMT360 or MGMT365.

BUSN466

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. Prerequisites: Senior status and FINC341.

BUSN491

Research Reading in Business and Economics

(1-4,0) 1-4

Independent study and seminar; individual student guidance by faculty for selected research topics in business. This course may be repeated for a maximum of eight total credits. Prerequisite: Senior status.

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CBUS122

Survey of Cannabis Business

(2,0) 2

The purpose of this course is to provide an overview of the history of cannabis from 2900 BC to modern day. Covering the use of cannabis and hemp and their historical agricultural and cultural importance, the prohibition of cannabis and subsequent cannabis law reform, and the inconsistencies in cannabis policy. The course will develop an understanding of Cannabis Industry, including an introduction to the types of businesses and products related to cannabis and hemp.

CBUS203

Cannabis Economics

(3,0) 3

The principles of economic reasoning as it applies to the Cannabis industry. Supply and demand, production and cost and the effect of price controls and public policy implications as it relates to the cannabis industry today. Prerequisites: Two years of high school algebra and equivalent/satisfactory score on ACT, SAT or Placement Exam or MATH102 with a grade of C or better.

CBUS305

Business of Cannabis Cultivation and Dispensary Operations

(3,0) 3

An introduction into the business side of various cultivation, harvesting and distribution methods. Costs, yield and labor requirements as well as benchmarking for the various methods will teach students how to increase the viability of a cannabis operation. Prerequisite: ACTG133.

CBUS360

Cannabis Law and Policy

(1,0) 1

This course is designed to teach students how state and federal laws are reformed in the United States. The course investigates the recent reform in State laws related to cannabis, how it was passed, and the effectiveness of the legislation. This course will examine the burgeoning field of law surrounding the use, management, sale and production of cannabis.

CBUS389

Cannabis Entrepreneurship

(3,0) 3

A study of individual small firms: start-up, on-going management, challenges, and requirements for success. Students will apply both strategic planning and the knowledge acquired from other business courses to (a) demonstrate understanding and competence in using S.A.P. in small business decision-making and operations, (b) develop a viable business plan for a new small cannabis business, and (c) utilize problem-solving for other local small businesses, where required, in an advisory capacity. Prerequisites: ACTG132 or ACTG230, BUSN 121 and MRKT281. This course is dual-listed with BUSN389.

CBUS466

Cannabis 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. A business plan for a cannabis enterprise will be developed as a capstone experience. Prerequisites: Senior Status and FINC341. This course is dual-listed with BUSN466.

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CCHM120
Cannabis Chemistry I
(1,0) 1

A course designed to introduce scientific literature regarding cannabis and explore the basic principles of cannabis chemistry.

CCHM240
Cannabis Plant Sample Preparation
(1,3) 2

A course in cannabis plant preparation for analytical chemical analysis, covering plant dehydration, digestion, and extraction of pertinent organic and inorganic chemical analytes for analysis on modern chemical instrumentation. Prerequisite: CCHM 120 and either CHEM 108/CHEM 109 or CHEM 115.

CCHM245
Cannabis Chemistry II
(1,0) 1

A course providing an advanced understanding of cannabis chemistry through discussion of current scientific literature and modern methods of chemical analysis. Prerequisite: CHEM 120.

CCHM250
Cannabis Production
(1,0) 1

An introduction to commercial growing of cannabis. Topics include commercial cannabis growth including genetics and hybridization and the operational components of a cannabis grow. Prerequisite: CCHM240.

CCHM350
Cannabis Chemistry III
(1,0) 1

An advanced course in cannabis chemistry in which students will utilize their understanding of chemical principles to comprehend, discuss, and present advances in cannabis chemistry identified in current scientific literature. Prerequisites: CCHM245 and CHEM225.

CCHM440
Cannabis Separations Chemistry
(3,3) 4

An analytical chemistry course in cannabis separations chemistry, this course will

cover various types of chromatography, including GCMS, LC, and LCMS and their application to cannabis analysis. The course will also cover the operation and maintenance of the modern chemical chromatography instrumentation. Prerequisite: CHEM 332 and CHEM 245.

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CHEM091

Basic Chemistry

(2,0) 2

Thorough exposure to elementary chemistry designed to prepare students for college-level chemistry. Emphasis on drill to enhance problem-solving skills. Prerequisite: MATH088 or equivalent. Students must receive a C (2.0) or better in this course to qualify for CHEM104, CHEM108 or CHEM115. Credit in this course does not apply toward graduation.

CHEM108

Applied Chemistry

(3,0) 3

An introduction to selected principles of chemistry with emphasis on technological applications. Credit in this course does not apply toward a major or minor in chemistry. Prerequisites: Pre- or corequisite of MATH102.

CHEM109

Applied Chemistry Lab

(0,3) 1

Laboratory experience for CHEM108 Applied Chemistry (must complete both lecture and laboratory to qualify for general education credit). Corequisite: CHEM108.

CHEM110

Applied Organic & Biochemistry

(3,2) 4

A continuation of concepts presented in CHEM108 with an emphasis on the fundamentals of organic and biochemistry. The interrelationships between the metabolic processes of living systems are discussed along with their underlying chemical reactions. Prerequisite: CHEM108 or equivalent, with a grade of C- or better.

CHEM115

General Chemistry I

(4,2) 5

Fundamental principles of chemistry with emphasis such as scientific method, basic chemical reactions and acid base equilibria, stoichiometry, periodic trends of elements, an introduction to the energy of reactions, atomic structure, simple bonding models, molecular structure, and intermolecular forces. Pre- or corequisite of MATH111 or higher and ENGL091 or equivalent. Pre- or corequisite of MATH111.

CHEM116

General Chemistry II

(4,3) 5

Fundamental principles of chemistry with emphasis on physical chemical concepts such as solids and solutions, kinetics, thermodynamics, equilibrium, including acid-base reactions, electron transfer processes and nuclear chemistry. Prerequisite: CHEM115 with a grade of C- or better.

CHEM208

Survey of Organic Chemistry with Biological Applications

(3,3) 4

A survey course in organic chemistry covering the nomenclature, structure, reactivity, synthesis, and spectroscopic analysis of important organic compounds with an emphasis on biological applications. This course will introduce students to the chemistry of bio-organic compounds and persistent organic pollutants. The laboratory will introduce basic organic laboratory techniques and will include experiments in organic synthesis, separations, and analysis. Prerequisite: CHEM116.

CHEM225

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: CHEM116 with a grade of C- or better.

CHEM231

Quantitative Analysis

(3,3) 4

Evaluation of analytical data and study of gravimetric and titrimetric methods of analysis. Prerequisites: CHEM116 with a grade of C- or better and MATH111 with a grade of C.

CHEM261

Inorganic Chemistry

(3,3) 4

This course will provide a foundation in Inorganic Chemistry with a focus on understanding the properties of the elements, bonding and geometries of small molecules and their chemical reactivities. Survey of main group and transition metal chemistry and applications to bio-inorganic chemistry. The laboratory component will provide students with opportunities to observe and measure the changes that accompany inorganic reactions and to make predictions regarding these inorganic reactions. Prerequisite: CHEM116 with a grade of C- or better.

CHEM290

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 Natural Resources office.

CHEM310
Applied Spectroscopy
(3,3) 4

General principles of spectroscopy will be explored including underlying principles and theory, data acquisition and processing coupled with spectral interpretation. Different spectroscopic methods used for the structural determination of organic molecules and in chemical research are described including mass spectrometry (MS), ultraviolet and visible spectroscopy (UV-Vis), infra-red spectroscopy (IR), atomic spectroscopy, fluorescence spectroscopy, and both one-dimensional and two-dimensional ¹H and ¹³C nuclear magnetic resonance (NMR) spectroscopy. Prerequisite: CHEM231 and CHEM326. (Alternate Years)

CHEM326
Organic Chemistry II
(3,3) 4

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 advance 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: CHEM225 with a grade of C- or better.

CHEM332
Instrumental Analysis
(3,3) 4

Continuation of CHEM231. 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: CHEM231 with a grade of C- or better. Recommended either PHYS222 or PHYS232.

CHEM351
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, vitamins, 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: CHEM225.

CHEM353
Introductory Toxicology
(3,0) 3 Alternate Years

An introduction to toxicology, including its history, types of poisons, their mode of operation and the biochemistry of detoxification. Environmental problems caused by toxic contaminants will be discussed. Prerequisite: CHEM351

CHEM355
Medicinal Chemistry
(3,0) 3

Principles of medicinal chemistry and the role of drugs in disease treatment will be explored in this course. This course examines biological target identification, methods of drug discovery and development, and drug pharmacokinetics.

Prerequisite: CHEM 326, CHEM 351

CHEM361

Physical Chemistry I

(4,0) 4

Chemical thermodynamics with applications to both phase and chemical equilibria.

Prerequisites: CHEM116, one year of physics, and either MATH112 or MATH152.

Corequisite: CHEM363.

CHEM362

Physical Chemistry II

(3,0) 3

Traditional quantum chemistry topics will be discussed that help explain chemical phenomena and provide descriptions and applications for spectroscopy.

Prerequisite: CHEM361.

CHEM363

Physical Chemistry Laboratory: Kinetics and Reaction Dynamics

(0,3) 1

An advanced laboratory exploring reaction kinetics and dynamics with an emphasis on modern methods of physical chemistry measurement. Prerequisite: CHEM116 and one semester of calculus.

CHEM395

Junior Seminar

(1,0) 1

Literature searching, scientific writing, and oral presentation of scientific data.

Students will be expected to listen to presentation of peers enrolled in CHEM/EVRN499 and develop a topic for their senior thesis. Prerequisite: Junior standing. Note: Also listed as EVRN395.

CHEM399

Internship in Chemistry

(1-4) 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. Work hours and activities must be documented daily and approved by both the on-site supervisor and the instructor to receive credit. The course may be repeated for a maximum of four credits.

Prerequisite: 2.5 GPA in major, Junior standing and permission of chair at least one semester in advance of registering for the course.

CHEM445

Forensic Science

(3,3) 4

This is a capstone class for the forensic chemistry degree. It will focus on standard and non-standard methods in forensic science. Lecture and laboratory concentrate

on quantitative and qualitative drug analyses, fingerprint visualization techniques, ballistics, DNA analyses, and chemical analyses of evidence. Gas chromatography, atomic absorption spectrometry, and infrared spectroscopy techniques will be used to differentiate evidence. In this course much time will be spent on mechanisms of the analyses facilitating critical thinking skills. Prerequisites: CHEM332 and CJUS444. Note: Also listed as CJUS445.

CHEM450

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 CHEM electives. This is a credit/no credit course.

CHEM452

Advanced Biochemical and Molecular Techniques

(2,4) 4 Alternate Years

A course covering advanced laboratory techniques for manipulating and analyzing bio-polymers such as proteins and nucleic acids. A brief discussion of bioinformatics will be presented. Protein expression vectors, PCR, and modern molecular techniques will be explored with potential applications for chemistry, biology, toxicology, forensic, and clinical lab science. Prerequisite: CHEM351.

CHEM461

Advanced Inorganic Chemistry

(3,0) 3 Alternate Years

This is an every-other-year course. This course will meet for three hours per week. Advanced concepts of inorganic chemistry will be examined, including atomic structure, ionic and covalent substances, acids and bases, main group elements, and transition metal elements. Prerequisite: CHEM261.

CHEM462

Advanced Inorganic Chemistry Laboratory

(0,3) 1 Alternate Years

This is an every-other-year course. This laboratory will meet for three hours per week. Advanced concepts of inorganic chemistry will be examined in a laboratory setting. Pre- or corequisites: CHEM461 and either CHEM310 or CHEM332.

CHEM490

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 Environmental and Physical Sciences office.

CHEM495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. This course will be required for a degree certified by the American Chemical Society. This course may not be repeated for credit. Prerequisites: CHEM395 (also listed as EVRN395) and permission of instructor. Dual listed as EVRN495.

CHEM499

Senior Seminar

(1,0) 1

Required for seniors majoring in chemistry/environmental science. Students will present the results of their scholarly research. Students who have completed CHEM/EVRN495 will be required to give poster and oral presentations to the University community as part of this class. Pre- or corequisite: CHEM395 (also listed as EVRN395). Dual listed as EVRN499.

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CHIN151

First-Year Chinese I

(4,0) 4

An introductory course designed to develop the four basic language skills in listening, speaking, reading, and writing in the target language as well as the acquisition of basic Chinese grammar and vocabulary. A communicative approach based on real-life situations. Relevant Chinese cultural aspects discussed. English used as necessary in classroom instruction.

CHIN152

First-Year Chinese II

(4,0) 4

Further development of basic language skills in listening, speaking, reading and writing with a strong emphasis on speaking and reading fluency. Relevant cultural aspects briefly discussed and the target language used progressively in instruction when it fits. Prerequisite: CHIN151 or equivalent.

CHIN251

Second-Year Chinese I

(3,0) 3

An intermediate-level course aiming at expanding the learner's ability to communicate in everyday life situations in the target language. Continued focus on language proficiency in listening, speaking, reading, and writing as well as further development of vocabulary knowledge and consolidation of grammatical knowledge. Social and cultural norms and conventions discussed when appropriate. Communicative approach used in instruction. Prerequisite: CHIN151, CHIN152 or equivalent.

CHIN252

Second-Year Chinese II

(4,0) 4

An intermediate-level course aiming at expanding the learner's ability to

communicate in everyday life situations in the target language. Continued focus on language proficiency in listening, speaking, reading, and writing as well as further development of vocabulary knowledge and consolidation of grammatical knowledge. Social and cultural norms and conventions discussed when appropriate. Communicative approach used in instruction. Prerequisite: CHIN251 or equivalent.

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CHLD101

Introduction to Early Childhood Education

(4,0) 4

This course provides an introduction to the field of early childhood. Topics include typical and atypical developmental milestones in the social, emotional, physical, intellectual and moral development of children from birth to age 8. In addition, the history of early childhood education, types of programs and issues in the field of childcare will be addressed. Field experience is required.

CHLD103

Learning Environments for the Young Child

(4,0) 4

This course explores the contributions of child development theorists, and the multiple integrated influences of family and community, to the design and implementation of early childhood learning environments. The use of space, materials, and routines in providing inclusive, safe environments is considered, as well as philosophical approaches to supporting young learners. Field experience is required. Prerequisite: CHLD101.

CHLD150

Observation and Assessment

(4,0) 4

This course provides experience with the practices and tools for observation, documentation, and assessment of young children from birth through age eight. Discussion will include the use of results of assessment for planning continued developmental and learning experiences, as well as for appropriate classroom management and guidance strategies. Field experience is required.

CHLD210

Infants and Toddlers

(4,0) 4

This course examines the design and evaluation of developmentally appropriate teaching, caregiving, and guidance practices for children from birth to 36 months. Addresses environments that provide challenging and developmentally appropriate expectations to stimulate development toward the long-term goals of autonomy, and cognitive and social-emotional growth of infants and toddlers. Field experience is required. Prerequisite: CHLD150.

CHLD225

Emergent Literacy

(3,0) 3

This course focuses on literacy acquisition theory and language development milestones for children from birth through age 8. Factors that affect reading

acquisition and techniques that assist children in developing listening, speaking, reading and writing skills are also explored. Consideration of the unique needs of English Language Learners is included. Prerequisite: CHLD210.

CHLD241

STEM Foundations for the Young Child

(4,0) 4

This course explores basic concepts and skills in science, mathematics, engineering, and technology appropriate to early childhood education. Field experience is required. Prerequisites: MATH110 or higher; BIOL105.

CHLD242

Creativity & Humanities

(4,0) 4

This course examines literature, visual and performing arts, and social studies topics appropriate to early childhood education. Field experience is required. Prerequisites: ENGL111, SOCY103.

CHLD245

Early Childhood Curriculum

(3,0) 3

This course focuses on the design of developmentally appropriate practices and curriculum for young children. Emphasis is placed on planning learning activities that support positive developmental outcomes, as well as on differentiating instructional strategies for the individual child. Field experience is required. Prerequisite: CHLD150.

CHLD260

Practicum I

4

The student will complete at least 140 hours in an early childhood setting culminating in experience as a lead teacher. Seminar meetings are included. Grading will be CR/NC. Prerequisites: CHLD150 and permission of instructor.

CHLD270

Administration of Early Childhood Programs

(2,0) 2

This course focuses on the financial, legal, supervisory and administrative procedures used in operating early childhood programs, including applicable local, state, and national standards. Prerequisite: CHLD150.

CHLD310

Inclusion of Young Children with Special Needs in Early Childhood Settings

(3,0) 3

This course provides resources and models for designing and implementing quality inclusive learning environments for young children who demonstrate developmental diversity birth to age 5. Includes identification of common delays, impairments and disabilities, as well as assistive technologies appropriate for supporting continued development. Field experience is required. Prerequisite: CHLD210.

CHLD330

Philosophical Foundations of Early Childhood Education

(2,0) 2

This course expands on basic knowledge of early childhood education practices to examine and evaluate contemporary early childhood program models and philosophical foundations. Prerequisite: CHLD260

CHLD350

Early Childhood Facilities Management

(2,0) 2

This course develops an advanced level of knowledge and skills necessary for effective management of child development centers, preschools, and other facilities. Effective leadership styles are considered. Prerequisite: CHLD270.

CHLD410

Practicum II

4

Students complete at least 140 hours in an early childhood setting, with primary emphasis on curriculum and administrative responsibilities. Seminar meetings are included. Grading will be CR/NC. Prerequisites: CHLD350 and Permission of Instructor.

CHLD440

Family and Community Partnerships

(3,0) 3

This course explores the multiple integrated influences that impact the development of young children, and provides opportunities for students to develop collaborative and cooperative skills that are essential to building partnerships focused on supporting that development. The various roles of the early childhood educator as an advocate for individual children and for the community is addressed. Field experience is required. Prerequisite: CHLD310.

CHLD480

Directed Teaching: Seminar

(1,0) 1

This seminar provides a forum for students in the CHLD Directed Teaching experience to discuss issues in early childhood education, classroom management, teaching of all students and professional development. Co-requisite: CHLD492.

CHLD492

Directed Teaching: Early Childhood

5

This course is a full-time teaching practicum under the direction and mentoring of a cooperating teacher at the pre-primary level. Evolution from observation and facilitation of small group activities, to whole-class instruction of a full-teaching load in an area center. Emphasis is placed on full range of responsibilities, including family involvement and administrative responsibilities. Grading will be CR/NC. Prerequisite: Admission to student teaching internship. Corequisite: CHLD480.

CHLD495

Senior Project 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. Requires field research and oral presentation. Prerequisite: Senior Status and Instructor's approval.

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CJUS101

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.

CJUS102

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.

CJUS103

Introduction to Terrorism and Homeland Security

(3,0) 3

This course will provide learners with historical view of terrorism, its origins, methodology, and ideology. It will also provide the learner with knowledge of specific events of the 20th century related to terrorism that have formed modern terrorism. Finally it will discuss the worldwide effort on deterring and discovering terrorist activities.

CJUS110

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.

CJUS130

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.

CJUS140

Criminological Theory and Correctional Client Growth

(3,0) 3

Emphasis on needs, identities and development of recipients of correctional services; to assist students in gaining insight into development of sensitivity to behavior and motivations of corrections clients. Specific problems of prisoners and intervention strategies are reviewed.

CJUS197

Physical Fitness for Public Safety

(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Law enforcement students (MCOLES) take course both semesters of their senior year.

CJUS201

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. Prerequisite: Criminal justice student, sophomore standing or permission of instructor. Course may be repeated twice for credit, to a maximum of 3 credits.

CJUS203

Cyberterrorism

(3,0) 3

This course will examine the problem of both domestic and global Cyberterrorism/Cybercrimes. The recognition of various types of crimes committed using computers, the Internet, and other Electronic Devices. Learners will learn investigative techniques and legal issues as related to the investigation of Cybercrimes.

CJUS204

Domestic and International Terrorism

(3,0) 3

This course will examine the history and modern trends of Domestic, International and Transnational Terrorism. This will include the profile of terrorist recruits, the structure and dynamics of terrorist organizations, and government sponsored terrorism. The motivation of various organizations and their methods of terrorist violence, as well as, their justification of violent acts will be discussed. Antiterrorism and Counterterrorism measures will be analyzed.

CJUS206

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.

CJUS212

Loss Control

(3,0) 3

Study of security, including historical, legal and philosophical framework for various phases of security operations in our society today.

CJUS220

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.

CJUS240

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.

CJUS243

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: CJUS101.

CJUS250

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.

CJUS301

Advanced Firearms

(0,2) 1

Emphasis will be on maintaining safe firearm handling, the reinforcing of the fundamentals of good marksmanship, and proper methods of cleaning and maintaining firearms. This course will expound on concepts, techniques, and knowledge learned in the CJUS201 Firearms course to include close quarter combat firing and weapon retention, advanced firearm cleaning and multiple target evaluation and courses of firing. Prerequisite: CJUS201 with a "C" or better grade or approval of MCOLES Director.

CJUS302

Hate Crimes

(3,0) 3

The course explores the history of racism, xenophobia, hate crimes, and extremism from a criminal justice perspective. A restorative justice model shall be utilized in examining hate crimes from a law enforcement, theoretical, political and legal context. Prerequisites: CJUS101, CJUS102, CJUS140 and Junior standing or permission of the instructor.

CJUS303

Critical Infrastructure Protection

(3,0) 3

This course will examine the historical development of the United States modern infrastructures. The course will provide an in depth knowledge of the critical infrastructures and the current protection methods. The learner will then learn advanced protection techniques and vulnerability analysis skills utilized to protect the assets.

CJUS306

Security Systems

(3,0) 3

Overview of specialized areas of security in specific facilities with special attention given to management of security information. Prerequisite: CJUS212.

CJUS313

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: CJUS101 and CJUS102.

CJUS319

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: CJUS101.

CJUS321

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: CJUS101 and CJUS102.

CJUS325

Homeland Security and Emergency Services

(3,0) 3

This course will prepare all graduates from a variety of majors to understand how homeland security impacts the US political system as a whole, but especially from the standpoint of emergency response and preparedness. Investigates the impact of the federal homeland security apparatus on emergency response organizations at the state and local level. Includes a historical review of homeland security measures beginning in WWI and through WWII and the Korean War. Especially reviews the security situation during the Cold War. The course deals with the federal agencies usually not associated with homeland security, such as DEA, ATF, the military departments, FAA, CDC, the National Guard Bureau, and the DOD. Prerequisite: Junior standing. Students from other majors are encouraged to enroll with permission from instructor. Also listed as FIRE325.

CJUS330

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: CJUS220, CJUS240, and junior or senior standing.

CJUS341

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.

CJUS345

Statistics and Design for Public Safety

(3,2) 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 MATH088 or equivalent/satisfactory score on ACT or Placement exam.

CJUS355

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: CJUS101 and SOCY214.

CJUS384

International and Comparative Criminal Justice Systems

(3,0) 3

A survey of selected world criminal justice systems including police, courts, and corrections. Cross-national and cross-cultural criminality from several perspectives will be examined as will the globalization of crime.

CJUS401

Senior Seminar

(3,0) 3

Seminar and independent study course with individual student guidance by faculty on selected research topics in criminal justice. Prerequisite CJUS345 and Senior standing.

CJUS402

Criminal Justice Internship

3-9

Criminal justice internship with an agency. Credit is based on the equivalent of 45 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. Course may be repeated for a maximum of 9 credits.

CJUS409

Procedural Criminal Law

(3,0) 3

Principles, duties and mechanics of criminal procedures as applied to important areas of arrest, search and seizure. Prerequisite: CJUS319; or permission of MCOLES Director.

CJUS411

Police Operations

(5,0) 5

A capstone course for Michigan Commission on Law Enforcement Standards (MCOLES) Criminal Justice certification students. Court functions, domestic violence law and procedures, ethical issues, civil disputes, interpersonal relations, juvenile offenders and other related topics. Prerequisite: Permission of MCOLES Director.

CJUS425

Women and Criminal Justice

(3,0) 3 Alternate years

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: CJUS101, and junior or senior standing.

CJUS444

Criminalistics

(3,3) 4

Criminalistics 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 MCOLES mandated hours. Prerequisite: CJUS243 or permission of MCOLES Director.

CJUS445

Forensic Science

(3,3) 4

This is a capstone class for the forensic chemistry degree. It will focus on standard and non-standard methods in forensic science. Lecture and laboratory concentrate on quantitative and qualitative drug analyses, fingerprint visualization techniques, ballistics, DNA analyses, and chemical analyses of evidence. Gas chromatography, atomic absorption spectrometry, and infrared spectroscopy techniques will be used to differentiate evidence. In this course much time will be spent on mechanisms of the analyses facilitating critical thinking skills. Prerequisites: CHEM332 and CJUS444. Also listed as CHEM445.

CJUS450

Skills Academy

2

A practicum course addressing the skills and competencies needed for certification through the Michigan Commission on Law Enforcement Standards (MCOLES).
Prerequisite: Permission of MCOLES Director. Course may not be repeated for credit.

CJUS484

Futures Research: Long-Range Planning for Criminal Justice

(3,0) 3 Alternate Years

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: CJUS101 and CJUS102.

CJUS490

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.

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COMM101

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.

COMM201

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: COMM101.

COMM210

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: COMM101.

COMM211

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: COMM101.

COMM225

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: COMM101.

COMM280

Understanding the Mass Media

(3,0) 3

Acquaints students with the basic similarities and differences in newswriting among the mass media, particularly newspapers, radio and television. Students will practice writing in the various formats. Prerequisite: ENGL110.

COMM302

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: COMM101.

COMM307

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: COMM101.

COMM308

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: COMM101.

COMM320

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: COMM101.

COMM325

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: COMM101.

COMM399

Internship in Communication

(1-4) 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 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.

COMM416

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: COMM101.

COMM490

Senior Directed Study in Communication

(3-4) 1-4

This course is designed to allow communication majors the opportunity to develop and implement a project/paper using the skills and knowledge from their previous course work. Projects/papers should relate to a student's individual areas of interest within the communication discipline, and represent a synthesis of their previous learning under the supervision of an appropriate faculty member. Prerequisites: senior status and approval of the appropriate chair(s).

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CSCI101

Introduction to Microcomputer Applications

(2,2) 3

The study of a selection of contemporary microcomputer applications, including operating systems concepts, word processing, spreadsheets, database management systems, and the Internet and World Wide Web. Brief survey of other applications, such as presentation graphics, multimedia usage and desktop publishing. Does not apply toward credit in computer science major or minor.

CSCI103

Survey of Computer Science

(3,0) 3

An introduction to the field of computer science for computer science, computer networking, and web development majors. Applications, history of computing, computer networks and the Internet, programming, hardware, theory of computation, algorithms, fundamental concepts in computing.

CSCI105

Introduction to Computer Programming

(2,2) 3

An introductory course in computer programming in a graphical development environment, intended for students with no prior computer programming experience. Arithmetic, control structures and simple data structures. Sound, graphics and animation techniques. Prerequisite: MATH088 or equivalent/satisfactory score on SAT, ACT or Placement Exam.

CSCI106

Web Page Design and Development

(2,2) 3

Topics include planning a web site starting with domain name registration and selection of hosting service providers, creating web page using HTML/XHTML and cascading styles sheets; validating web pages; using web authoring tools such as Dreamweaver; publishing web pages to a remote web server, introductory web site design, including best practices for inserting graphics, page layout, building the web site navigation and user interface, integration of third-party and Web 2.0 tools and software, implementing web and accessibility standards, ethical and legal issues such as copyright and trademarks.

CSCI107

Web Graphic Design and Development

(2,2) 3

Apply graphic design, typography, color theory, and image composition to enhance a web site. Create web graphics using Adobe Photoshop and Microsoft Expression Design. Insert graphics into web pages and publish web sites using Adobe Dreamweaver and Microsoft Expression Web.

CSCI121

Principles of Programming

(4,0) 4

A broad-based introduction to computer programming, using the C++ programming language and basic operating system features as vehicles. Basic programming principles, including built-in and programmer-defined data, operators, functions and control structures. Introduction to classes and dynamic memory allocation. Text manipulation and parsing, binary files, and exception handling. C-style input and output. Applications will be drawn from across the discipline of computer science. Prerequisite: CSCI105 and MATH102 (or equivalent math placement) with a grade of C or better in both classes.

CSCI131

Computer Prog Principles-Ind S

(1,0) 1

This course is designed to bridge the gap between transfer courses that are either 'not quite' CSCI121 or are in a different programming language than the current LSSU offerings of CSCI121 and CSCI201. Students may not receive credit for both CSCI121 and CSCI131. Requires permission of instructor.

CSCI163

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 interference as they relate to computer repair and operation. The disassembly and upgrading of a personal computer will be covered in the laboratory as well as the use of diagnostic hardware and software.

CSCI201

Data Structures and Algorithms

(4,0) 4

An introductory course in data structures and algorithms, with an emphasis on abstraction, implementation and analysis. Advanced class concepts, including operator overloading, Linked lists, stacks, queues, trees and binary trees. Separate compilation and third-party libraries. Application of various data structures to problems selected from the spectrum of computer science topics. Prerequisites: CSCI121 with a grade of C or better and MATH111 (or equivalent math placement) with a grade of C or better.

CSCI207

Developing Multimedia and Rich Interactive Web Sites

(2,2) 3

Transform static web pages into rich media-based interactive web applications. Apply graphic design and marketing principles to design and produce audio and video components for both consumers and commercial web applications. Using Adobe Flash and Microsoft Silverlight, build rich interactive web applications. Publish web sites to a web server. Prerequisite: CSCI107 with a grade of C or better.

CSCI211

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: CSCI105 with a grade of C or better.

CSCI221

Computer Networks

(2,2) 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: CSCI103 and 105 with a grade of C or better.

CSCI248

Network Operating Systems I

(2,2) 3

An introduction to using and administering network operating systems. Students will also be introduced to virtualization of machines, as well as interaction between

virtualized machines. Topics include: account setup, basic security, file and device sharing, and maintenance. Course topics will be presented in the context of different network operating systems. Prerequisite: CSCI221 with a grade of C or better.

CSCI263

Managing Computer Security

(3,0) 3

This course investigates the various security protection and recovery techniques available for networks and personal computers including security policies, procedures, and requirements necessary for protecting the integrity of information stored on networks, workstations, and other computer systems. Other topics include discussions on disaster recovery planning, emergency response teams, threat assessment, detection and remediation of a threat, standards for establishing a security framework, and operations security and production controls. Prerequisite: CSCI101 or CSCI103 with grade of C or better.

CSCI275

Web Server Administration

(2,2) 3

Install and configure a web server; identify the web server administrator role; monitor web server performance and log files; configure file transfer and email services; secure the server. Plan and configure an e-commerce web site. Prerequisites: CSCI221 and CSCI248, both with a C or better.

CSCI281

Introduction to UNIX and Networking

(2,2) 3

An introduction to the UNIX operating system, shell scripting, and UNIX networking from the users perspective. Topics include basic and intermediate UNIX commands and file structure, regular expressions, BASH/CSH shell scripting, basic UNIX network setup, introduction to UNIX system daemons and networking services. Prerequisite: CSCI221 with a grade of C or Better.

CSCI290

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.

CSCI291

Computer Science Project

(4,0) 4

This is a hands-on course where the student is assigned a project at a corporate site. The student is expected to spend at least 8 - 10 hours a week on the project. Topics for the project may include creating a substantial Web site, designing and implementing an application system for a user, modifying and updating an existing software system, or other related projects. The projects will vary each semester. Prerequisites: CSCI201 with a grade of C or better.

CSCI292

Computer Networking Project

(4,0) 4

This is a hands-on course where the student is assigned a project in a corporate network setting. The projects will vary each semester to allow students to implement their knowledge to create and maintain a real-world network system. Activities could include the wiring of the network, installing and maintaining users, installing and repairing workstations, maintaining a Novell or Microsoft network, monitoring an NDS tree, and other similar activities. The student is expected to spend at least 8-10 hours per week on the project including hours on site, doing research, and writing weekly report logs. Prerequisite: CSCI106 and 107, both with a grade of C or better, or CSCI163 and CSCI221, both with a grade of C or better.

CSCI321

Computer Graphics

(3,0) 3 Alternate Years

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: CSCI201, and either MATH112 or 151, all with a minimum grade of C.

CSCI323

Routers and Switches

(2,2) 3

Principles of Wide Area Networks, IP and TCP, routers, routing protocols and configurations, virtual LANs, network management, subnetting, design of LANs and WANs, and security issues. Students completing this course will be prepared to take the CCENT and CCNA certification exams. Prerequisite: CSCI221 with a grade of C or better.

CSCI325

Developing Web Applications with JavaScript and PHP

(2,2) 3

Transform static web sites into dynamic web sites using a combination of client and server-side web programs. Process and validate forms, build interactive web sites, manage web databases and publish web sites to a web server. Prerequisites: CSCI121, CSCI211 with a grade of C or better.

CSCI326

Developing Web Applications with ASP.NET

(2,2) 3

Create and publish web server and web database applications using the Microsoft ASP.net framework; Emphasis on improving performance, security, and isolating business logic from the user interface. Prerequisites: CSCI121, CSCI211 with a grade of C or better.

CSCI341

Discrete Structures for Computer Science

(4,0) 4 Alternate Years

Formal logic and proof techniques; recursion, recurrence relations and combinational methods; analysis of algorithms; algebraic structures; trees and graphs; Boolean algebra and computer logic; models of computation and formal languages. Emphasis will be on applications to computer science. Prerequisites: CSCI121 with a grade of C or better, and either MATH112 or 151 with a grade of C or better.

CSCI342

Advanced Programming Techniques

(4,0) 4 Alternate Years

Advanced data structures including general trees and graphs. Advanced programming techniques, including: divide and conquer, dynamic programming, greedy algorithms, graph algorithms, balanced trees. Emphasis will also be placed on the software development process, debugging and testing methodologies. Prerequisites: CSCI201 with a grade of C or better.

CSCI348

Network Operating Systems II

(2,2) 3

A continuation of using and administering network operating systems. Students will also be introduced to virtualization of servers, as well as interaction between virtualized machines. Topics include: file system and network service management, remote access, security, printing, and disaster recovery. Course topics will be presented in the context of different network operating systems. Prerequisite: CSCI248 with a grade of C or better.

CSCI351

Mobile Application Development

(3,0) 3

Introduction to the development of applications for smart phones and tablets; using a simulator and provisioning to mobile devices; user interfaces, touch events, data management, and graphics; interaction with camera, accelerometer, and location hardware. Prerequisite: CSCI121 with a grade of C or better.

CSCI371

Multi-Platform Application Development

(3,0) 3

The design and implementation of applications across multiple platforms, with a goal of a similar or identical code base between versions. The course covers a variety of programming environments, as well as a variety of platforms. Focus will be on comparison between programming languages, as well as the strengths and weaknesses of various programming environments and models for a uni-platform vs a multi-platform approach. Prerequisite: CSCI121 and either CSCI281 or CSCI201 all with a grade of C or better.

CSCI411

Advanced Database and Project Management

(3,0) 3 Alternate Years

Designing and implementing an enterprise-level database. Creating interfaces to database systems from common programming language platforms. Capturing requirements, process modeling, project scheduling, documenting, testing, delivering and maintain a system. Prerequisites: CSCI201 and CSCI211, each with a minimum grade of C.

CSCI412

UNIX Network Administration

(2,2) 3

Network administration how to and issues for Linux. Installation of a Linux networked system, maintenance and upgrade of a Linux installation, security issues, common scripting languages, system admin tasks, NFS, and mail systems; other UNIXes. Prerequisites: CSCI221 and 281, both with a grade of C or better.

CSCI415

Computer Organization and Architecture

(3,0) 3

A hardware-orientated 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. Parallel computing for both SMP and MIMD models. Prerequisite: CSCI201 and either CSCI351 or CSCI371 with a grade of C or better.

CSCI418

Senior Project I

(1,4) 3

This course is the first part of the two-part sequence CSCI418/CSCI419. The student will begin a two-semester capstone experience that will include one of the following: a software project; a network implementation; a co-operative education position with an external company; or a research project. The experience must include the fulfillment of customer-generated requirements. The projects/experiences will vary each year to allow students to experience work in a real-world environment. Students in CSCI418 must take CSCI419 the following semester. Prerequisite: CSCI291 or CSCI292 with a C or better and permission of instructor.

CSCI419

Senior Project II

(1,4) 3

The second of a two-part sequence, CSCI419 provides students with the skills necessary for completion of their two-semester capstone experience that will include one of the following: a software project; a network implementation; a cooperative education opportunity with an external company; or a research project. The experience must include the fulfillment of customer-generated requirements. The projects/experiences will vary each year to allow students to experience work in a real-world environment. Students in CSCI418 must take CSCI419 the following semester. Prerequisite CSCI418 with a C or better and permission of the instructor.

CSCI422

Network and Computer Security

(2,2) 3

An advanced look at common computer and network exploitation techniques in use today. Course emphasis is on how exploits work (both from the exploiters perspective as well as the software faults that allow these exploits to exist), what can be done with the exploits, as well as mitigation and solution techniques for containing the damage to administered systems. Prerequisites: CSCI412 and either CSCI351 or CSCI371.

CSCI434

Operating Systems Concepts

(3,0) 3 Alternate Years

Definition and historical development of operating systems. Characteristics of batch, interactive and multiprogramming systems. File systems, processor and memory management. Communication, concurrency, deadlock, protection, parallel and distributed systems. Case studies of modern operating systems. Prerequisite: CSCI201 with a minimum grade of C.

CSCI490

Individualized 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 nine credits. Prerequisites: Junior standing or higher.

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CULN111

Beginning Culinary Skills

(4,12) 8

First course in the culinary arts focusing on the basics behind basic cooking principles including, but not limited to, grilling, boiling, broiling, searing, poaching, steaming, basting, braising, sauteing, and roasting.

CULN113

Kitchen Safety and Sanitation

(0,6) 2

Training in kitchen safety and sanitation and workplace safety for the employee and patron. Preparation for certification under a nationally recognized program. Corequisite: CULN111.

CULN115

Food and Beverage Management

(0,6) 2

This course will cover the basic principles of food and beverage operations management. It will cover the 'big picture' of how to ensure profitability and proper management of food and beverage businesses. It will cover food and beverage cost analysis, menu development and engineering, basic staff management and labor cost control, property accusation, income statement analysis, business financial development and analysis, purchasing and receiving, etc. Corerequisite: CULN111.

CULN121

Advanced Culinary Skills

(4,12) 8

This course will be similar to beginning cookery, though cooking techniques and equipment will be more advanced. Students dive into advanced cooking techniques such as smoking, curing, yeast breads, pickling, fermenting, quick breads, cakes,

custards, etc. Students will be required to carry an appropriate knife kit and be in proper uniform. Prerequisite: CULN111.

CULN123
Service Operations
(0,6) 2

This course will educate students on the service and bar aspect of food and beverage operations. Students will be trained in proper service techniques, as well as the basic techniques behind managing the alcohol and non-alcohol aspects of the operation. Students will practice proper service language, understand the flow of FOH operations, understand basic mixology, become educated in wine varietals and pairing, and undertake basic barista training. Prerequisite: CULN111; Corerequisite: CULN121.

CULN125
Nutrition for Chefs
(0,6) 2

Fundamentals of human nutrition in relation to the culinary arts with a basis in human body function, wellness, metabolism and nutrients. Prerequisite: CULN111; Corequisite: CULN121.

CULN130
Culinary Internship
(0,6) 6

A supervised internship working in an approved food and beverage operation designed to further develop the chef's skill set in real-time culinary environments. A portion of the internship must be completed at an LCCS facility. Prerequisite: CULN121.

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DATA225
Word Processing Techniques
(3,0) 3

Students will cover basics of word processing including document creating, saving, printing, and some advanced features such as table, merge, graphics and report formatting. Hands-on experience is scheduled in labs outside of classroom hours.

DATA231
Database
(3,0) 3

In this course, students will cover advanced database applications in business including creating database tables, forms, reports, mailing labels and charts; creating relationships between database tables; using database wizards; and performing queries and filtering records. A student may repeat this course covering a different database management system for a maximum of six credit hours.

DATA235
Spreadsheets
(3,0) 3

In this course, students will cover advanced spreadsheet applications in business including writing and working with formulas; creating templates; finding and organizing information by filtering, sorting and subtotaling; working with multiple worksheets; creating charts; working with data tables and scenario management; and importing data into spreadsheet software. A student may repeat this course covering a different spreadsheet software program for a maximum of six credit hour.

DATA250

Desktop Publishing and Presentation Design

(3,0) 3

Introduction to document design and layout, use of font, color and graphics to produce newsletters, brochures and presentations. Concepts included are presentation preparation and delivery. Graphics software will be used. Prerequisites: ENGL111 and a working knowledge of word processing.

DATA261

Multimedia Applications

(3,0) 3

In this course, students will be introduced to the design and production of Web sites. Graphics, animation, and sound will be incorporated in the creation of interactive Web pages. Macromedia Studio, which includes Dreamweaver and Flash, will be used.

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ECON201

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: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam or MATH102 with a grade of C or better.

ECON202

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: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam or MATH102 with a grade of C or better.

ECON302

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: MATH112 or equivalent.

ECON304

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: ECON201.

ECON305

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: ECON201 or 202.

ECON307

Environmental Economics

(3,0) 3

This course examines the application of economic analysis to problems of air, water, forests, fisheries, energy, and soil use; economic approaches to valuing the environment; the benefits and costs of pollution control; and alternative policy approaches to environmental problems with emphasis on emissions trading. Prerequisite: ECON202.

ECON308

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: ECON202.

ECON309

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: ECON201.

ECON407

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: BUSN211 or MATH207, ECON201, 202, MATH112 or 151.

ECON408

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: ECON201 and 202.

ECON409

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.

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EDSE301

Introduction to Special Education

(3,0) 3

An introduction to the historical and legal bases of special education. Research based examination of the models, theories and philosophy of teaching students with disabilities. Prerequisites: admission to the School of Education. This course may NOT be repeated for credit.

EDSE302

Communication and Community

(3,0) 3

Developing effective communication between all participants in the educational community involved in the education of students with special needs. Topics include preparing and implementing IEPs and communication with parents, students and teachers. Prerequisite: EDSE301.

EDSE320

Introduction to Learning Disabilities

(4,0) 4

An examination of the educational research, characteristics, diagnostic principles and practices related to teaching students with learning disabilities. Psychological theories (e.g. developmental, behavioral, and cognitive) of teaching students with learning disabilities and associated learning strategies are reviewed. Prerequisites: EDSE301, EDSE302.

EDSE401

Issues and Trends Impacting Learning Disabilities & Special Education

(3,0) 3

Contemporary issues in the education of students with learning disabilities and other special needs will be explored. Policies and regulations, requirements and procedures for service, curriculum adaptation and modification, delivery models relating to placement, privacy, advocacy, and family education will be discussed. Prerequisite: EDSE302.

EDSE403

Assessment and Diagnosis

(3,0) 3

An examination of the education research and best practices related to identification, assessment, instruction, accommodation, and implementation of special education programs. Legal responsibilities of the school in the areas of assessment, diagnosis, and diversity will also be addressed. Prerequisites: EDSE301, EDSE320.

EDSE404

Instruction and Technology: Preschool to Adult

(4,0) 4

An examination of the research and best practices using assistive technologies to increase, maintain or improve the capabilities of students with disabilities. Prerequisites: EDSE320, EDSE403.

EDSE480

Student Teaching Seminar: Special Education

(1,0) 1

A seminar for teacher candidates during a student teaching internship in a special education classroom. Corequisite: EDSE492. Prerequisites: EDSE320, EDSE403, and EDSE404, and admission to student teaching. The course may NOT be repeated for credit.

EDSE492

Internship/Supervised Student Teaching: Learning Disabilities

(8,0) 8

Supervised student teaching internship in a special education classroom, focus on working with students with learning disabilities. Grading will be CR/NC. Corequisite: EDSE480. Prerequisites: EDSE320, EDSE403, EDSE404 and admission to student teaching. The course may NOT be repeated for credit.

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EDUC101

Self as Learner

(2,0) 2

This course introduces students to the field of education. Emphasis is placed on the application of basic learning theory to personal success in learning, successful integration into the university culture, educational ethics, and professional growth through the study of controversies in education.

EDUC250

Student Diversity and Schools

(4,0) 4

This course will examine the impact of diversity on students and educational systems through the consideration of the historical and philosophical foundations of schooling, the impact of diversity on students' participation in the system, and the characteristics of effective teaching practice to meet the needs of diverse learners.

Field experience in an Eastern Upper Peninsula elementary or secondary school is required. Prerequisite: ENGL111.

EDUC301

Educational Psychology and Learning Theory

(3,0) 3

This course focuses on research-based theories of learning and learning processes, the role of the teacher in supporting the process, and alternatives for evaluation of learning outcomes. Field experience is required. Prerequisites: EDUC250 and admission to the teacher education program.

EDUC315

Peer to Peer Mentorship

(1,0) 1

In this practicum course, the student will receive training in mentorship and information about autism spectrum disorder and then become a mentor to an individual of approximately college age who receives local special education services. Thirty hours of field experience is required. The course may be repeated for a maximum of three credits and is open to all majors. Pre-requisites: Completion of general education diversity or social science courses.

EDUC330

Reading in the Elementary Classroom

(3,0) 3

This course examines reading as a process of constructing meaning through dynamic interaction among reader, the text, and the context of the reading situation. Content includes objectives, content, materials, organization and methods of teaching reading in the elementary school. Fieldwork required. Prerequisite: Admission to the teacher education program. Pre- or co-requisite: EDUC301.

EDUC350

Integrating Technology into 21st Century Learning Environments

(2,2) 3

This course explores instructional technology tools, educational media, theory, and practice with the goal of designing consummate learning experiences with seamless technology integration for all students. Application of technology and learning theory to planning for instruction is included, with specific focus on setting outcomes for learning. Prerequisites: Admission to the teacher education program, EDUC301.

EDUC410

Corrective Reading in the Classroom

(3,0) 3

This course considers methods for the classroom diagnosis of students' reading strengths and weaknesses. Techniques for planning and implementing corrective and remedial interventions based on diagnosis are presented and applied. Fieldwork required. Prerequisite: EDUC330.

EDUC411

Elementary Language Arts and Literacy Skills

(2,0) 2

This course studies methods of teaching language arts as literate activity and the

use of a research base for the social context of children's learning. Emphasis is on the emergence of literacy in elementary students. Fieldwork required. Prerequisites: EDUC415, admission to teacher education program.

EDUC415

General Instructional Methods

(1,2) 2

This course provides opportunities to study and apply research-based instructional methodologies to facilitate effective learning with an emphasis on differentiation and authentic assessment. Fieldwork required. Prerequisites: Admission to the teacher education program, EDUC350.

EDUC420

Math Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies that facilitate effective mathematics instruction. Students develop and present mathematics lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. Prerequisites: MATH103, MATH104, EDUC415 and admission to teacher education program.

EDUC421

Science Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies that facilitate effective science instruction. Students develop and present science lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. EDUC415 and admission to teacher education program.

EDUC422

Social Studies Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies to facilitate effective social studies instruction. Students develop and present social studies lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. Prerequisites: EDUC415 and admission to teacher education program.

EDUC423

Arts Methods for Classroom Teachers

(2,0) 2

Elementary teacher candidates examine the knowledge, understanding, and application of the content, functions, and achievements of dance, music, theatre, and the visual arts to promote elementary students' ability to create, perform and respond in and through the arts. Candidates demonstrate their understanding that all students can learn the knowledge and skills that make up the arts.

EDUC424

Health/Physical Methods for Classroom Teachers

(2,0) 2

Elementary teacher candidates demonstrate the knowledge, understanding, and application of research-based strategies to create opportunities for all students to develop critical knowledge, skills, and behaviors that contribute to life-long health. Candidates demonstrate knowledge and understanding through planning and appropriate implementation of effective past and current research-based human movement and physical activity strategies as central elements to foster active, life-long healthy lifestyles for all elementary students.

EDUC430

General Methods for Secondary Teachers

(3,0) 3

A study of strategies and methodologies to facilitate learning at the secondary level including classroom management and organization for productive learning communities. The multiple roles of the teacher in the secondary classroom are examined including participant, colleague, researcher, reflective practitioner, accountable professional, counselor and mentor. Integrated technology component. Fieldwork required. Prerequisites: EDUC150, 250, 301 and admission to the teacher education program.

EDUC431

The Secondary Learner

(3,0) 3

A study of the dilemmas of adolescents as they affect students in secondary schools. The course focuses on the special needs and sensitivities of adolescents and implications for instruction and classroom management. Integrated technology component. Fieldwork required. Prerequisites: EDUC150, 250, 301 and admission to the teacher education program.

EDUC440

Reading in the Content Area

(3,0) 3

A study of reading methods appropriate to use in secondary classrooms. Includes formal and informal assessment procedures for determining students' abilities and the accompanying strategies to enhance content area comprehension and concept development. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: EDUC250, EDUC301 and admission to the teacher education program.

EDUC441

English Language Arts Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific language arts and English content. Students develop and present English lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC442

Math Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific mathematics content. Students develop and present math lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC443

Science Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific science content. Students develop and present science lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC444

Social Studies Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific social studies content. Students develop and present social studies lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

EDUC451

Directed Study in English Language Arts Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific language arts and English content. Students develop and present English lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC441. Prerequisite: EDUC415 or EDUC430.

EDUC452

Directed Study in Math Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific mathematics content. Students develop and present mathematics lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC442. Prerequisite: EDUC415 or EDUC430.

EDUC453

Directed Study in Science Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific science content. Students develop and present science

lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC443. Prerequisite: EDUC415 or EDUC430.

EDUC454

Directed Study in Social Studies Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific social studies content. Students develop and present social studies lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC444. Prerequisite: EDUC415 or EDUC430.

EDUC460

Classroom Management

(2,0) 2

This course focuses on effective classroom management techniques essential to creating a positive, democratic learning environment. Exploration of management techniques and theories leads to a development of personal classroom management system to help students become responsible for their behaviors and choices. Prerequisite: EDUC415.

EDUC480

Directed Teaching Seminar

(2,0) 2

This seminar provides a forum for students in the Directed Teaching experience to discuss issues in teacher education, classroom management, teaching of all students and professional development. Co-requisite: EDUC492.

EDUC490

Research Topics in Education

(1-4) 1-4

Individual study under supervision of teacher education faculty member. May be repeated to a maximum of four credits. Prerequisites: admission to the teacher education program, senior status and permission of instructor.

EDUC492

Directed Teaching

10

This course is a full-time teaching practicum under the direction and mentoring of a k-12 cooperating teacher. Evolution from observation and facilitation of small group activities, to whole-class instruction of a full-time teaching load in an area school. Emphasis is placed on maintaining classroom communities that ensure equitable access to important knowledge and skills. Grading will be CR/NC. Prerequisites: Admission to student teaching internship. Corequisite: EDUC480.

EDUC624

Reading: Research and Methodologies

(3,0) 3

Theories, research, and methods focused on enabling students to become self-regulated readers who effectively use multiple strategies in their reading. Strategic processes in comprehension, word identification, critical thinking, and analysis will be examined as will the role of the teacher as a model and mediator of such processes in a variety of reading contexts. Pre-requisite: Admission to MA C&I program or permission of instructor.

EDUC635

Applying: [specify course title by section]

1

A directed study course applying the content knowledge developed through approved EDUC 900-level sections within the context of curriculum and instruction. The student will develop three research based teaching units based on content appropriate to the grade level of their teaching certificate/endorsements (K-12), and/or a research project or paper as determined by the instructor and approved by the LSSU Department of Education. Prerequisite: admission to the MA-C&I program or approved plan of study, permission of instructor. Co- or Prerequisite: concurrent enrollment or successful completion (B or higher) of an approved 900-level section. Course may be repeated up to three times for credit with permission of the graduate coordinator or Dean, up to once per section number or course title.

EDUC690

Special Topics

1-3

Courses and workshops designed to meet the special needs of K-12 teachers, e.g. workshops approved by the School of Education for graduate credit. The transcript will specify the specific content, e.g. Special Topics (K-4 Mathematics), etc. Approval of the School of Education is required to apply credits earned through special topics courses in the MA C&I program. May be repeated for credit when content varies. Prerequisite: Admission to the MA C&I program or approval of instructor.

EDUC910

Special Topics: [specify course title by section]

1-3

Topical courses in education based on independent or directed study, workshops or other professional development activities. Courses addressing the continuing education requirements of educational professionals (e.g. regular or special educators, instructional assistants, school psychologist, counselors). *Successful completion of this course will award non-matriculated graduate credit which may apply to the renewal of professional certificates/credentials but which does not apply to an LSSU graduate degree. Course number may be repeated when content and course title vary, once per section Grading: S=satisfactory, equivalent to a B or higher in graduate courses or NC=no credit. Tuition for non-matriculated graduate credit will be established by the Board of Trustees.

EDUC920

Special Topics: [specify course title by section]

2

Topical independent study courses in education delivered in partnership with Virtual Education Software. Courses addressing the continuing education requirements of educational professionals (e.g., regular or special educators, instructional assistants, school psychologist, counselors). This course requires DSL-level or higher internet and access to a computer for course assignments and to participation in online sessions and discussion boards. Sections of this course are based on curriculum developed by Virtual Education Software (VESi) and include additional

assignments and group interaction including synchronous and asynchronous communication supervised by LSSU faculty. *Successful completion of this course will award non-matriculated graduate credit which may apply to the renewal of professional certificates/credentials but which does not apply to an LSSU graduate degree except as noted in EDUC635. Specific course titles under this number will be listed on the LSSU education web site, and are available through a cooperative contractual agreement with VESi. Course number may be repeated when and course title vary, once per section Grading: S=satisfactory, equivalent to a B or higher in graduate courses or NC=no credit. Tuition for non-matriculated graduate credit will be established by the Board of Trustees.

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EGEE125
Digital Fundamentals
(3,2) 4

This course provides a study of numbering systems, Boolean algebra, optimization and reduction techniques, combinational logic, sequential digital logic, digital arithmetic, counters, multiplexers, demultiplexers, and microcomputer memory devices. Emphasis is placed on digital circuit design and contemporary programmable logic concepts. Prerequisite: EGNR101 or EGNR103. Pre or Corequisite: MATH111 and MATH131.

EGEE210
Circuit Analysis
(3,3) or (3,3,1) 4

This course is an introduction to the analysis of linear circuits. Topics include: basic circuit elements and their terminal relations, Kirchoff's laws, nodal analysis, mesh analysis, superposition theorem, Thevenin and Norton equivalent circuits, DC transient analysis of RC and RL circuits, phasors, sinusoidal steady-state response of RLC circuits and single-phase and three-phase AC power analysis. Prerequisites: MATH152, EGNR140 and one of the following: EGNR101 or 103.

EGEE250
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: EGEE125 with a C or better grade.

EGEE280
Introduction to Signal Processing
(4,0,0) or (4,0,1) 4

The course introduces mathematical techniques used in the design and analysis of analog and digital signal processing systems. Topics include complex numbers, phasor representation of sinusoids, spectral representations, convolution, frequency response, sampling and reconstruction, Fourier series and Fourier transform, and the use of MATLAB as a signal processing tool. Prerequisites: MATH152 and EGNR140.

EGEE310
Network Analysis

(4,0) 4

A continuation of EGEE210 with an emphasis on the systems approach to circuit analysis and design. Topics include the Laplace transform, transfer functions, frequency response, Fourier series, filter design, and op-amps. Prerequisites: EGEE210, EGEE280. Pre- or corequisite: MATH310.

EGEE320**Digital Design****(3,3) 4**

A study of logical and electronic circuit design techniques including combinational and sequential circuits, programmable logic devices, MSI and LSI devices. Synchronous state machine design using computer-based tools is emphasized for control applications. Prerequisite: EGEE125 with a grade of C or better, and either EGNR265 or CSCI121.

EGEE330**Electro-Mechanical Systems****(3,3) 4 or (3,3,1) 4**

A study of three-phase circuits, electro-mechanical energy conversion, transformers, AC and DC machines, motor drives, and controlled converters. The laboratory activities include planning and conducting tests of electrical machines, and simulation with physical modeling software. Prerequisite: EGEE210 with a grade of C or better, EGNR140, and MATH152.

EGEE345**Fundamentals of Engineering Electromagnetics****(3,0) 3 or (3,0,1)3**

This course provides an in-depth knowledge of the fundamentals of electromagnetic theory. Topics include vector analysis, electrostatic fields and magnetostatic fields, while familiarizing students with the applications of such fields, Maxwell's equations, and an introduction to wave propagation and radiation. Prerequisites: EGEE210 with a grade of C or better, MATH251 and PHYS232. Pre- or corequisite: MATH310.

EGEE355**Microcontroller Systems****(3,3) 4**

A study of microcontroller systems design based on the 8/16/32-bit microcontrollers. Assembly and C languages are used for program development in the design of embedded systems. Interfacing techniques, real-time control, and microcontroller emulator use are emphasized. Prerequisites: EGEE250 and one of the following: EGNR265 or CSCI121.

EGEE370**Electronic Devices****(3,3) (3,3,1) 4**

This course provides an in-depth study of the basic electronic devices. Topics include diodes, MOS field effect transistors, bipolar junction transistors as well as amplifier concepts such as gain, bandwidth, biasing and frequency response. Diode rectifiers, common amplifier configurations, digital CMOS logic circuits, latches, flip-flops and RAM cells are studied as applications of electronic devices. Prerequisites: EGEE125 with a C or better grade, EGEE210 with a C or better grade, and MATH152.

EGEE411

Power Distribution and Transmission

(3,0) 3

This course provides an introduction to the analysis and design of systems that carry electrical power from the point of generation to the point of use. Topics include mathematics and techniques of power flow analysis, ground-fault analysis, transient stability analysis, analysis of large power system networks, and the use of power system simulation software. Prerequisites: MATH152, EGEE210, and EGEE280.

EGEE425

Digital Signal Processing

(2,2) 3 or (2,2,1)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: EGEE250, and EGEE 280 with a grade of C or better, EGNR140, and either EGNR265 or CSCI121.

EGEE475

Power Electronics

(3,3) 4

This course provides an introduction to electrical power processing. The general topics include various electronic power switching circuits including: AC-DC rectifiers, DC-DC converters and DC-AC inverters. Additional topics include applications of power switching circuits as well as characteristics of power semiconductor devices. Prerequisites: EGEE280, EGEE370, and MATH251.

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EGEM220

Statics

(3,0) or (3,0,1) 3

A study of theory and application of engineering mechanics principles with emphasis on vector analysis, free body diagrams, properties of areas, and problem solving. This emphasis includes applying principles of equilibrium to particles and rigid bodies. Prerequisite: EGNR140. Pre, or Corequisites: MATH152 and PHYS231.

EGEM320

Dynamics

(3,0) or (3,0,1) 3

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. Prerequisites: MATH152 and EGEM220.

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EGET110
Applied Electricity
(3,2) 4

This course covers basic principles of DC and AC electricity. Topics include resistance, inductance, capacitance, series and parallel circuits, magnetic circuits, transformers and electrical motors. Laboratory exercises will reinforce the lecture material. Prerequisite: MATH111 and MATH131 each with a C or better.

EGET175
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: EGET110.

EGET310
Electronic Manufacturing Processes
(3,3) 4

This course will cover traditional and modern techniques for the design, fabrication, and testing of electronic circuit boards. Traditional techniques include wire cutting and stripping and manual and wave soldering. Modern techniques include the routing of multilayer surface mount boards, solder paste stenciling and dispensing, pick-an-place assembly and programming, reflow oven soldering, and rework techniques. Additional topics may include mechanical mounting, assembly line coordination, cell manufacturing, and potting and sealing materials. Prerequisites: either (EGET110 and EGET175) or EGEE210.

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EGME110
Manufacturing Processes
(2,3) 3

An introduction to basic manufacturing processes. Both theory and applications of various processes are covered in lecture and laboratory. Topics include: machining processes, welding and related processes, metal forming processes, and plastic forming processes. Included in machining processes is a limited scope computer aided design and computer numerical control project. The topics of measuring instruments and laboratory safety will also be addressed in the lecture and laboratory. Completion of a high school trigonometry course is expected for enrollment. Co-requisite or Prerequisite: EGME141 and MATH111 (or equivalent/satisfactory score on ACT/SAT, or Placement Exam) or Permission of Instructor.

EGME141
Solid Modeling
(2,2) 3

An application of standard solid modeling software to draw, dimension, and design mechanical parts and assemblies. Topics covered include: standard drafting techniques, orthographic projections, wireframe and solid methods, dimensioning, assemblies, and constraining. An introduction to animation of assemblies is also

included. Pre- or Corequisite: MATH102.

EGME225
Mechanics of Materials I
(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: EGME220 with a grade of C or better. Pre- or corequisite: MATH152.

EGME240
Assembly Modeling and GD&T
(2,3) 3

The course is a continuation of EGME141. Parametric modeling and design of assemblies by the use of solid models. Emphasis will be placed on animation of assemblies to display the functionality of assemblies. Prerequisites: EGME110, EGME141, MATH131 and sophomore standing.

EGME275
Engineering Materials
(3,0) 3

A study of the physical structure of engineering materials, including metals, ceramics, polymers, and composites, as well as their properties and applications. Failure modes of materials, such as corrosion, fatigue, plastic deformation, and brittle failure, are also covered. For metal alloys, there is an emphasis on the interpretation of phase diagrams and time-temperature-transformation diagrams. Prerequisite: CHEM115 or (CHEM108 and CHEM109). Pre- or corequisite: EGME225 or EGME225.

EGME276
Strength of Materials Lab
(0,3) 1

Laboratory experiments covering topics in mechanics of materials and engineering materials. Theory from mechanics of materials and engineering materials will be covered through hands-on experiments. (Pre- or corequisites: EGME225 and EGME275) or (Prerequisite EGME225 and Pre or corequisite EGME275).

EGME310
Vehicle Development & Testing
(1,2) 2

A course providing a systematic overview of topics within the areas of automotive vehicle dynamics, component design, and testing. An introduction to gross vehicle dynamics is followed by a detailed study of specific vehicle subsystems, including both their design and their role in the overall vehicle behavior. Dynamic behaviors covered include acceleration, braking, cornering, ride, and load transfer. Subsystems considered include the brakes, steering system, suspension, tires, and drive train. Vehicle testing and benchmarking is also covered. Laboratory content includes an introduction to a commercial vehicle dynamics software package. Prerequisites: PHYS221 or PHYS231. Pre- or corequisites: EGME220 or EGME225.

EGME337
Thermodynamics

(4,0) or (4,0,1) 4

A study of the theory and applications of thermodynamics. Topics covered include: thermodynamic properties, heat, work, first and second Laws of thermodynamics, entropy, power and refrigeration cycles, gas mixtures, and an introduction to transport theory. Prerequisite: MATH152.

EGME338**Fluid Mechanics****(3,0) or (3,0,1) 3**

A study of the theory and applications of fluid statics and fluid dynamics. Topics covered include: hydrostatics, buoyancy and stability, Bernoulli and energy equations, dimensional analysis, flow in pipes, pumps, potential flow, open-channel flow, introductory gas dynamics, integral and differential analysis of flow, exact and approximate solutions of the Navier-Stokes equations, and computational fluid dynamics (CFD). Prerequisites: EGME220, MATH251, MATH310.

EGME350**Machine Design****(3,3) 4**

Design and selection of machine components and power transmission units. Selected topics in load, stress, and deflection analysis in more depth than EGME225, notably (but not exclusively) torsion of thin-walled sections, thick-walled pressure vessels, interference fits, buckling problems by eigenvalue analysis, and Castigliano's theorems. Deterministic and stochastic theories of static failure, dynamic loading, and fatigue. Performance analyses of machine components, such as shafts, bearings, gears, worms, fasteners, and belt/chain drives. Laboratory covers finite element analysis using commercial software, and involves a major group design project. Prerequisites: EGME141, 225, 275, and 276. Pre-or Corequisite: MATH310.

EGME415**Vehicle Dynamics****(2,0) 2**

A study of vehicle dynamics, treating selected topics in automobile dynamics with more theoretical depth than EGME410, but also surveying heavy trucks, tracked and off-road vehicles (including terrain interaction), railway vehicles, and water-borne vessels. Dynamic modeling, as well as a thorough understanding of underlying physical phenomena, are emphasized. Prerequisites: EGME320, EGNR340 and EGME310.

EGME425**Vibrations and Noise Control****(3,2) 4 or (3,2,1) 4**

An introductory course on vibrations analysis, noise control, and acoustics. The vibrations portion includes the theory of discrete and continuous vibrating systems, and such applications as vibration mitigation, machinery vibrations, and rotor dynamics. The noise control/acoustics portion includes the theory of airborne sound, sound fields in bounded spaces, an overview of human hearing, and noise mitigation. Measurement techniques and signal analysis are covered in the laboratory segment. Prerequisites: EGME225, EGME320, EGNR340, MATH251 and 310.

EGME431

Heat Transfer

(3,0) (3,0,1) 3

Theory and applications of heat transfer. Steady-state and transient conduction, forced convection, natural convection, radiation. Analysis of heat exchangers, boiling and condensation, introduction to numerical methods in heat transfer. Prerequisites: EGME337, EGME338 and (EGNR265 or EGNR140).

EGME432

Thermal and Fluids Lab

(1,3) 2

Practical applications of thermodynamics, fluid mechanics, and heat transfer. Hands-on training in the operation of thermodynamic components, power generation systems, and fluid mechanical devices. Experimentation in heat transfer. Includes major project in the area of power generation and dissipation. Prerequisites: EGME337 and EGME338. Pre- or corequisite: EGME431.

EGME442

Finite Element Analysis

(2,2) 3

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. Prerequisites: EGME350 and MATH310.

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EGMF110

Introduction to Machining I

(2,6) 4

Students will receive instructions on shop safety, blueprint reading, measuring instruments, layout principles, and basic bench work. They will also receive instructions on grinding, lathes, drill presses, saws, and basic milling. Some metallurgical concepts are introduced. The course will make use of the Machinery's Handbook and apply the principles, concepts, and data in the handbook to industrially related projects. Information from the handbook will be used to ensure proper set-up and operation of the machinery. Students will spend several hours each week setting up, working, and familiarizing themselves with the machines.

EGMF130

Introduction to Machining II

(2,6) 4

This course builds up upon the material presented in EGMF110. Students will receive additional instruction on shop safety and measuring techniques relative to the machinery introduced in this course. Additional topics on vertical and horizontal milling machines, surface grinders, metallurgy, and blueprint reading are covered. The Machinery's Handbook will continue to be used in conjunction with the machines utilized in this course. Students will spend several hours each week setting up, working, and familiarizing themselves with the machines. Prerequisite: EGMF110.

EGMF210

Advanced Machining

(2,6) 4

In this course, students will write CNC programs in machine codes, and then setup and run CNC machines 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. Students will be able to describe the sequence and operations for a part program, determine the tools required for machining, calculate speeds and feeds, set-up tooling on CNC machines, develop CNC programs using standardized formats, and use CAM software to produce three dimensional parts. Prerequisites: EGMF110 or EGME110, and MATH102. Pre- or corequisite: EGMF130.

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EGMT142**An Overview of Solid Modeling Techniques****(1,2) 2**

This course will cover an application of solid modeling software techniques to create parts and assemblies. Topics covered include creating sketches; creating parts with extrude, revolve, blend, and sweep; creating part features with round, chamfer, pattern, mirror; use of the part history tree; dimensioning of parts; building of assemblies; creation of parts from 2D drawings; creating 2D drawings from solid models of parts and assemblies; and an introduction to animation of assemblies. Prerequisites: Previous CAD course and permission or instructor.

EGMT216**CAM with CNC Applications****(2,3) 3**

Writing CNC programs in machine codes, and the setup and trial runs to produce parts from these programs. Simulation of CNC machining processes to predict tool paths and cycle times. Computer-aided manufacturing (CAM) topics and applications of CAM software will also be covered. Prerequisites: EGME110, EGME141, MATH131.

EGMT225**Statics and Strength of Materials****(4,0) 4**

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: MATH111 and MATH131 each with a C or better and PHYS221.

EGMT332**Thermodynamics and Heat Transfer for Technologists****(4,0) 4**

This course provides an algebra-based coverage of topics in thermodynamics and heat transfer relevant to technologists in manufacturing and fire science. Thermodynamics topics include properties of substances, energy balances, combustion and thermochemistry, and heating and ventilation systems. Basic principles of conduction, convection, and radiation, and their application to practical problems are covered in the heat transfer portion of the course. Prerequisite: MATH111 or 140.

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EGNR101

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: MATH102.

EGNR102

Concepts and History of Engineering

(2,0) 2

This course provides instruction on problem-solving techniques using engineering tools and concepts as students work on an engineering design project. Topics in engineering ethics and the engineering work experience are discussed. A history of engineering and the development of the specific engineering fields are presented. Pre- or corequisite: MATH102.

EGNR103

Engineering Orientation

(0.5,1) 1

This course provides an orientation to the engineering and engineering technology fields at Lake Superior State University, including robotics. Students are introduced to the engineering professional organizations and are encouraged to participate in professional activities. Laboratory exercises focus on introducing students to the engineering facilities and programmatic options within the engineering and engineering technology disciplines. Academic success strategies are also presented. Pre- or co-requisite: MATH102.

EGNR140

Linear Algebra and Numerical Applications for Engineers

(1,3) 2

This course covers the engineering application of concepts from applied mathematics, iterative programming and computational software packages. Applications of linear algebra are introduced. Iterative programming emphasizes loops, conditional statements and user input-output. The lab also includes instruction on commercially-available software used to perform computational tasks of applied interest. Prerequisite: MATH131. Pre- or Co-requisites: MATH112 or MATH151.

EGNR245

Calculus Applications for Technology

(2,2) 3

This course covers engineering applications of differential and integral calculus, including areas, volumes of solids, vector analysis, matrix algebra, polar and cylindrical coordinate systems, partial differentiation, and multiple integrals for typical engineering technology problems. Application and solutions to engineering problems will emphasize and require the use of commercial software packages such as MathCAD and MATLAB. Prerequisite: EGNR140.

EGNR250

Cooperative Education

-2 2

A practicum in which students work in a supervised engineering capacity (on site) with industry. The student is expected to work at least 6 hours per week in an industrial setting. The student's experience must be related to his/her academic studies and thus this experience contributes significantly to his/her professional development. May be repeated for a maximum of 4 credits. Prerequisite: Permission of Instructor.

EGNR260

Engineering Research Methods

(1,3) 2

This is an introductory course covering research methods in engineering and engineering-related fields. The student will be involved in faculty-supervised and guided research activities such as assisting with developing experiments, gathering data and analyzing results. Much time will be spent learning about the research project, past experiments and future directions. Can be repeated for credit. Prerequisite: permission of instructor.

EGNR261

Energy Systems and Sustainability

(3,0) 3

The course provides an introduction to energy conversion systems and discusses issues related to the sustainability of each system. Topics include basic energy definitions, traditional energy resources and reasons for pursuing alternative energy resources, renewable and nonrenewable energy resources, energy storage, and electrical grid integration. Topics also include policy as well as social, economic, and environmental sustainability issues as they relate to energy conversion. Prerequisite: MATH102 or equivalent.

EGNR265

C Programming

(3,0) or (3,0,1) 3

An introductory course in C programming with an emphasis on structured programming techniques and on utilizing C to solve engineering-related problems. Topics include looping techniques, input and output to files, conditional flow of control, writing and utilizing functions, pointers, 1D and 2D arrays, and data storage. Prerequisites: MATH111 and MATH131 and sophomore standing.

EGNR310

Quality Engineering

(3,0) 3

Provides a coverage of classical and modern methods of quality control and quality engineering. Topics include quality control principles and terminology, classical qualitative and quantitative quality control methods, including statistical process control procedures, robust design methods as applied to product design and design of experiments, and an overview of quality management systems used in industry. Pre- or Corequisites: MATH207 or MATH308.

EGNR340

Numerical Methods for Engineers

(0,2) 1

This course addresses numerical methods for the solution of problems in linear algebra, numerical integration, root searching, linear and non-linear regression, ordinary and partial differential equations, and eigenvalue analysis. It emphasizes proficiency in independently programming algorithms for the simulation of physical systems with engineering applications, an understanding of how these algorithms work and are structured, and an appreciation for the value of computational efficiency in numerical methods. Prerequisites: EGNR140. Pre-or Corequisites: MATH310 and (CSCI121 or EGNR265).

EGNR346

Probability and Statistics Laboratory for Engineers

(0,2) 1

This laboratory accompanies MATH308, a calculus-based introduction to the basic theory of probability and statistics. Topics include methods of data collection, experimental design, interpretation of data and use of a statistical software tool. Prerequisite: EGNR140. Pre- or corequisite: MATH308.

EGNR361

Energy Systems and Sustainability Lab

(0,3) 1

The course explores the technical and implementation aspects of sustainable energy systems. Students will design, construct, and/or analyze various energy conversion systems. They will also design and implement subsystems that can store energy and construct connections between energy sources, energy storage subsystems, and the electrical grid. Prerequisites: (CHEM108 or CHEM115), (EGET110 or EGEE210), MATH131 or higher, excluding MATH207, (PHYS221 or PHYS231); Pre/Corequisite: EGNR261.

EGNR362

Vehicle Energy Systems

(2,3) 3

An introduction to vehicle power train energy systems and both battery and fuel cell electric/hybrid systems. Other topics include vehicle drive profile calculations, torque and speed coupling, and safety considerations. Vehicle topics also include cars, trucks, and off-road hybrid systems. Laboratory activities include CAN and other communication and information systems, and vehicle performance analysis and simulations using Excel, Simulink, and CANoe. Lab activities include using the chassis vehicle dynamometer with external instrumentation, CAN and OBD-based data acquisition. Prerequisites: (PHYS221 or PHYS231), (EGEE210 or EGET110) and pre/corequisite: (EGNR265 or CSCI121).

EGNR450

Cooperative Education Project I

-4 4

A practicum in which students work in a supervised engineering capacity (on site) with industry. This is the first of a two-part sequence that can replace the senior year Engineering Design Project II (EGNR495). The focus of this course is the development of the co-op project proposal and the initiation work on the co-op project. The expectation is that at least 60% of a forty hour work week is devoted to completing the project. Prerequisite: EGNR250 Cooperative Education.

EGNR451

Cooperative Education Project II

-3 3

A practicum in which students work in a supervised engineering capacity (on site) with industry. This is the second of a two-part sequence that can replace the senior year Engineering Design Project II (EGNR495). The focus of this course is the completion of the co-op project. The documentation at the completion of the project includes an update presentation and a final report/final presentation. The expectation is that at least 60% of a forty hour work week is devoted to completing the project. Prerequisite: EGNR450 Cooperative Education.

EGNR460

Engineering Research Project I

(2,6) 4

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students will acquire the skills listed under EGNR491 and develop a research plan for some portion of a project. The plan will be implemented in EGNR461. Specifically, the students will work to develop a proposal of the expected research goals and create a project timeline and budget. The student's faculty advisor and the director of the Lab for Undergraduate Research in Engineering (LURE) must approve the plan. Prerequisites: senior status, EGNR260 and permission of instructor. Students who plan to take EGNR461 must complete both EGNR460 and EGNR461 in the same academic year.

EGNR461

Engineering Research Project II

(1,3) 2

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students implement their research plan developed in EGNR460 and lead research efforts. Results and finding must be reported in oral and/or written forms to appropriate constituencies outside the LSSU audience. Prerequisites: EGNR460 and permission of instructor. The dropping or failing of EGNR461 will result in the student having to repeat both EGNR460 and 461.

EGNR490

Special Topics in Engineering: (Topic)

(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.

EGNR491

Engineering Design Project I

(2,3) 3

This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, ethics, timelines, resource allocation, project management and performance evaluations. Skills in oral and written communications, problem conceptualization, creative problem solving and technical presentations are developed. Prerequisites: Permission of instructor on the basis of senior status and expected graduation on or before December of the following calendar year, and one of the following: EGEE320 or EGEE370 or EGME350 or (EGRS365 and EGMT310). Students who plan to take EGNR491 and EGNR495 must complete both in the same academic year.

EGNR495

Engineering Design Project II

(1,6) 3

A continuation of EGNR491. This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, engineering economics, 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: EGNR491. The dropping or failing of EGNR495 will result in the student having to repeat both EGNR491 and 495.

EGNR496**Senior Directed Project****(1,6) 3**

This course is designed to allow industrial technology majors the opportunity to implement a project while working collaboratively with engineering and engineering technology students. Students will be expected to use the skills and knowledge from previous course work. Project outcomes should relate to the student's individual areas of study and represent a synthesis of the previous learning under the supervision of a faculty member. Prerequisites: Approval of the department chair, senior status, and expected graduation on or before December of the following calendar year.

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EGRS215**Introduction to Robotics****(1,2) 2**

An introduction and orientation to the field of robotics. Challenges in robotics manufacturing, design and structure of robotic systems, classification of robots, robot geometry, power sources, robotic control systems are covered in this course. The lab part of the course will provide an overview of robotics applications in industry through videos and hands-on experiences. Applied laboratory topics will cover basic programming concepts, structures, and applications using industrial robots. Prerequisites: MATH102 or equivalent.

EGRS365**Programmable Logic Controllers****(2,3) 3**

An introduction to programmable logic controllers (PLC) with an emphasis on programming of the controller and operator interface. Standard PLC devices (bits, timers, counters etc.) and controller functions dealing with math, compare, moves, program flow, analog input, and high-speed counters will be covered in the course. Written and oral business communications are an integral part of the course. Co or prerequisites: EGNR265 or EGEE125 or CSCI121 and sophomore status.

EGRS366**Programmable Logic Controllers****(2,2) 3**

An introduction to the use of programmable logic controllers (PLC). Basic components of the PLC along with the interface to hydraulic/pneumatic systems and sensors will be discussed. Some higher-level functions such as zone control, master control and sequencers will also be covered. This course will only be offered at the regional sites. It is not a communication-intensive course. Prerequisite: electrical

fundamentals course.

EGRS372

Mobile Robotics

(3,3) 4

An introduction to mobile robotics. Students will learn to integrate sensor data in order to control mobile robots to perform useful tasks in both known and unknown environments. Applications could include drones, autonomous vehicles, underwater robots, and warehouse robots. Students will also learn about current trends and areas of research within the field of mobile and service robotics. Prerequisites: MATH151 or MATH112, EGNR265 or CSCI121 with a grade of C or better, and EGRS215. This course cannot be repeated for credit.

EGRS380

Robotics Technology

(2,0) 2

This course will cover topics relative to robotics and robotics systems. Two- and three-dimensional kinematics, end effectors, active and passive collision systems, sensors, feedback devices, robotic safety, and principles of operation of applicable hardware will be studied. Prerequisites: MATH111 and MATH131 with grade of C or better, and PHYS221.

EGRS381

Robotics Technology Lab

(0,3) 1

Laboratory exercises will provide hands-on examples in the use of industrial robots. Focus will be on learning a structured robotics programming language. Applications and projects will simulate industrial situations as well as emphasize system integration. Prerequisites: EGNR265. Corequisite: EGRS380.

EGRS382

Introduction to Robotics Programming

(0,3) 1

The laboratory work will provide an introduction to the use and application of an industrial robot. Programming concepts and structures in the V+ programming language as used in Adept and Staubli robots will be studied. Industry-like applications and system integration projects will be assigned. Prerequisite: EGRS380.

EGRS385

Robotics Engineering

(3,3) 4

An introduction to the field of robotics engineering. Topics include classification of robotic manipulators, accuracy and repeatability, wrists and end-effectors, actuators and sensors, homogeneous transformations, Denavit-Hartenberg convention, forward kinematics, inverse kinematics, trajectory planning and an introduction to velocity kinematics. Laboratory exercises will focus on the operation and programming of industrial robots and robotics simulation using industry standard software. Prerequisites: EGNR265 or CSCI105, and MATH251.

EGRS430

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: MATH152 or EGNR245, EGNR140, EGRS381 or EGRS385, and EGNR265 or CSCI121.

EGRS435

Automated Manufacturing Systems

(2,3) 3

A study and analysis of the components of an automated manufacturing system. Topics include analysis of flow lines, automated assembly systems, MRP, materials requirement planning, production economics and CIM. Course work will include applications of manufacturing systems software including factory simulation. Laboratory work will focus on systems integration, advanced programming of industrial robots, and flow line automation. Prerequisites: EGRS385.

EGRS460

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: MATH310, EGEM220 and EGEE210. Pre- or co-requisite: EGNR340.

EGRS461

Design of Control Systems

(3,3) 4

This course builds upon the fundamental control system theory covered in EGRS460 and introduces various control system design techniques. General topics include Bode and root locus design techniques, controllability and observability, optimal control, state space design. Several classical design techniques such as phase-lead, phase-lag, deadbeat, pole placement and PID design are covered. Prerequisite: EGRS460.

EGRS480

Manufacturing Automation

(3,0) 3

Study of the mathematical modeling of production concepts, analysis of automated flow lines, automated assembly systems, production economics, automated guided vehicles and materials requirement planning. Prerequisites: EGRS380, EGRS381 or EGRS382, and MATH112 or MATH151 with a grade of C or better.

EGRS481

Manufacturing Automation Lab

(0,3) 1

The first part of the laboratory work will focus on programming Fanuc robots using the Karel programming language. Industry-like applications and system integration projects will be assigned. The second part of the lab work will include the application

of WITNESS discrete-event simulation software package to study and analyze manufacturing systems. Prerequisites: EGNR265 or CSCI121 either with a grade of C or better. Pre or co-requisite: EGRS480.

EGRS482

Automation and Simulation Lab

(0,3) 1

Laboratory work in automation will focus on programming Fanuc robots using the Karel programming language. Industry-like applications and system integration projects will be assigned. Lab work in simulation will include the introduction to a discrete-event manufacturing simulation software package. Several manufacturing systems will be modeled, verified, validated and optimized using the simulation software package. Prerequisite: EGRS480.

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EMED181

First Aid

(0.5,1.5) 1

Basic course in first aid. Theoretical and practical experience in university laboratory.

EMED188

Wilderness First Responder

(1,3) 2

The student will learn concepts and hands-on strategies to respond to medical emergencies in a remote setting of at least 1 hour from professional medical care. Students who successfully complete the course will receive a WFR certificate. There are no prerequisites or co-requisites. This course may not be repeated for credit. Course may be taught in non-traditional scheduling format.

EMED189

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.

EMED190

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.

EMED191

Prehospital Emergency Care and Crisis Intervention II

(2,6) 4

Simulated practice with some in-hospital observation. Emphasis on laboratory practice of skills needed for functions of an EMT-A. Prerequisite: EMED190.

EMED211

Emergency Pharmacology I

(2,0) 2

Introduction to emergency pharmacology including sources of drugs, drug laws and regulation, routes of administration, pharmacokinetics and pharmacodynamics, dosage calculations and the metric system. Emphasis will be placed on drugs used in the management of cardiovascular emergencies. Prerequisite: math competency or MATH103, and corequisite EMED251.

EMED212

Emergency Pharmacology II

(2,0) 2

Continuation of HLTH211 with an overview of emergency drugs frequently used in the prehospital management of respiratory, endocrine, toxicological, obstetrical and other prehospital emergencies. Administration procedures and dosages for adult and pediatric patients will be covered. Prerequisite: EMED211 with a B- or above.

EMED251

Advanced Emergency Care I

(4,0) 4

Study of prehospital emergencies geared toward rapid intervention and patient stabilization. Introduction to the pre-hospital environment and preparatory information will be covered including medical-legal issues, airway management, parenteral therapy and comprehensive patient assessment. Management of traumatic injury and multiple casualty incidents will be addressed. Prerequisite: admission to Paramedic Technology Program.

EMED252

Advanced Emergency Care II

(4,0) 4

Continuation of EMED251 addressing treatment modalities for environmental, medical, obstetrical and behavioral emergencies in the adult and pediatric patient. Prerequisite: EMED251 with a B- or above.

EMED261

Emergency Cardiology I

(2,0) 2

Introduction to basic cardiac monitoring and dysrhythmia recognition. Review of the anatomy and physiology of the cardiovascular system, principles of electrophysiology, EKG interpretation and dysrhythmia management will be covered. Sinoatrial, junctional and atrial dysrhythmias will be addressed. Corequisite: EMED251.

EMED262

Emergency Cardiology II

(2,0) 2

Continuation of EMED261 with emphasis directed at identification and management of life-threatening dysrhythmias including ventricular dysrhythmias and heart blocks. Coronary artery disease, myocardial infarction and other cardiovascular emergencies will be addressed, and the course will conclude with ACLS certification. Prerequisite: EMED261 with a B- or above.

EMED271

Care of Special Populations

(2,0) 2

This course will prepare the Emergency Paramedic to effectively assess and manage special patient populations in the emergency setting. Course content will include differentiation between the normal adult and special patient populations, including assessment of the neonatal and pediatric patient and management of common medical and traumatic conditions experienced by the pediatric patient. Special emphasis will be placed on patient care needs and decision-making strategies unique to special patient populations, including resuscitation skills. Prerequisites: EMED211, EMED251, EMED261, EMED284, EMED286, EMED297.

EMED284

Advanced Skills and Situations I

(1,6) 3

Advanced skills and procedures discussed in Advanced Emergency Care will be demonstrated and practiced in a laboratory setting. Skills covered will include advanced airway management, parenteral therapy, cardiac monitoring and advanced patient assessment. Simulated patient scenarios will be designed to allow the student to practice these advanced skills in a realistic patient setting. Emphasis will be placed upon strengthening new skills and providing critical thinking opportunities which allow for the integration of theory with practical applications. Prerequisite: admission to the Paramedic Technology Program and corequisite EMED251.

EMED285

Advanced Skills and Situations II

(1,6) 3

Continuation of HLTH284 with an emphasis placed on ACLS and PALS procedures and algorithms. Instructor and peer evaluation will enhance learning, and working in groups will promote the concepts of teamwork and individual leadership. Prerequisite: EMED284 with a B- or above. Corequisite: EMED252.

EMED286

Paramedic Operations

(1,3) 2

This course will prepare the Emergency Paramedic to effectively handle unique situations which may be encountered in the prehospital setting that require highly specialized training. Program material will include managing multiple casualty situations, Medical Incident Command, hazardous materials incidents, rescue awareness and operations and crime scene awareness. Special emphasis will be placed on rescuer safety. Practical skills will include vehicular entry and disentanglement, and basic rescue operations.

EMED297

Paramedic Clinical I

(0,12) 2

Clinical rotations in the hospital emergency department, surgical suite, outpatient surgery and with local EMS agencies designed to provide the student with hands-on practical experience of patient care. Corequisite: EMED251 and permission of the instructor.

EMED298

Paramedic Clinical II

(0,12) 2

Clinical rotations in the hospital emergency department, intensive care unit, obstetrical unit, pediatrics unit and local EMS agencies will provide the student with a continuation of clinical exposure. Additional clinical experience in other areas may be included as the opportunity permits. Prerequisite: EMED297 with a B- or above and concurrent with EMED252.

EMED301

National Registry Certification Preparation

(2,0) 2

This course is designed to prepare the Paramedic Student to challenge the National Registry Paramedic Certification Examination upon completion of the didactic, practical and clinical components of the Paramedic Technology Program. It will provide the student with an opportunity to thoroughly review key information in the 8 modules of the National Standard Paramedic Curriculum. Emphasis will also be placed on improving the student's test-taking skills.

EMED302

Paramedic Field Internship

(0,21) 4

Upon completion of the didactic, practical and clinical components of the Paramedic Technology Program, the student in this field internship will be provided with the opportunity to synthesize and apply acquired knowledge, values and skills necessary for the practice of an Emergency Paramedic to real life scenarios in the pre-hospital setting. This internship will also provide the student with an opportunity to critically analyze the thoroughness and effectiveness of care provided, while developing and implementing team leadership skills and critical thinking skills that foster the ability to provide safe and efficient patient care. Prerequisite: Completion of all general education credits and EMED core curriculum courses; Co-requisite EMED301.

EMED490

Independent Study for Emergency Medicine

(1-3,0) 1-3

This may take the form of either a research project or a program of directed reading on a specific subject. One to three 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. Prerequisites: Permission of Instructor.

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ENGL105

Writing Workshop

(2,0) 2

Students in this workshop, which is paired with ENGL110, First-Year Composition I, will learn to improve their self-confidence as writers, control surface features of language, and independently apply the writing process, with emphasis on development, revision, editing for clarity and meaning, and proofreading final products. Co-requisite: ENGL110.

ENGL110
First-Year Composition I
(3,0) 3

ENGL110 provides students with an introduction to the discipline of writing through an exploration of their own writing processes and products. Emphasis is placed on students learning to think critically about their own writing in order to address issues of coherence, grammar, mechanics, organization, clarity and content. Other material covered includes the role of literacy in society, the ways in which readers engage text, and the role of writing at the college level.

ENGL111
First-Year Composition II
(3,0) 3

First-Year Composition II prepares students for the complex demands of academic literacy and research. These require students to be able to critically observe personal and public knowledge; ask questions of reading and research; formulate hypotheses; design and conduct research projects, both in the library and in the field; and identify further avenues of inquiry. To help students develop these abilities, the course also teaches students the basic skills of analysis, interpretation, critical thinking and documentation. Required course work includes completion of an extended research project. Prerequisite: a grade of C or higher in ENGL110.

ENGL180
Introduction to Literary Studies
(3,0) 3

This course introduces students to the theory and methodology of literary study, focusing on three questions: What is a literary text? How do we read a literary text? How do we write about a literary text? Addressing these questions requires students to examine the social and cultural contexts of literature and its aesthetic, rhetorical and ideological aspects. These considerations will help students judge literary value and examine their own literary assumptions. Requires one research project and critical essays using MLA style. Prerequisite: ENGL110.

ENGL221
Introduction to Creative Writing
(3,0) 3

Through writing and discussion, students will study and practice introductory elements of drama, fiction, nonfiction, and poetry. Co-requisite ENGL110.

ENGL222
English Grammar & Language in Context
(3,0) 3

This course requires students to master the vocabulary and principles of standard English grammar related to sentence structure and the production of meaning. Students will also analyze and evaluate prescriptive and descriptive conventions of usage, the history and cultural influences of the English language, and its regional and social variations. Prerequisites: A grade of C or higher in ENGL110 and

ENGL111.

ENGL223
Creative Writing II
(3,0) 3

Through writing and discussion, students will study and practice intermediate elements of fiction and poetry. Prerequisite: ENGL221.

ENGL231
American Literature I
(3,0) 3

This course is a chronological study of American literature from the colonial writers through the Romantic period, ending with the Civil War. Prerequisite: ENGL180.

ENGL232
American Literature II
(3,0) 3

This course is 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: ENGL180.

ENGL233
English Literature I
(3,0) 3

Students will read and discuss selected works from the Old English period to the beginning of the eighteenth century. Emphasis will be placed on major writers and works, evaluated in their historical context. Prerequisite: ENGL180.

ENGL234
English Literature II
(3,0) 3

Students will read and discuss selected works from the eighteenth century to the twentieth century. Emphasis will be placed on major writers and works, evaluated in their historical context. Prerequisite: ENGL180.

ENGL235
Survey of Native Literature of North America
(3,0) 3

Students will examine various types of Native American literatures, including traditional stories, non-fiction, fiction and poetry from authors of numerous different nations. A variety of themes, including Native American identity and the role of culture in literature, will be covered. Corequisite: ENGL111 (also listed as NATV235).

ENGL236
Literature and Culture
(3,0) 3

Students will examine English-language texts from a variety of cultures, including American minorities and other underrepresented cultures. Students will observe the way in which culture is presented in the texts and how culture can help to shape the

texts. Corequisite: ENGL111.

ENGL301
Creative Prose Writing
(3,0) 3

This course is a seminar and workshop for the study and practice of prose fiction, creative non-fiction, and other prose forms. Students will complete a final portfolio. Prerequisite: ENGL223.

ENGL302
Poetry Writing
(3,0) 3

This course is a seminar and workshop for the study and practice of poetry and its various forms. Students will complete a final portfolio. Prerequisite: ENGL223.

ENGL303
Performance Writing
(3,0) 3

This course is a seminar and workshop for the study and practice of writing for performance, which may include plays, film scripts, and other performance genres. Students will complete a final portfolio. Prerequisite: ENGL223.

ENGL306
Technical Writing
(3,0) 3

Technical writing is designed to introduce students to the theory and practice of technical communication. This course incorporates a broad approach, addressing the issues of critical thinking, collaboration, ethics, and the persuasive presentation of technical information in both written documents and oral presentations. The specific documents that will be covered include memos, formal business letters, technical descriptions, short and analytic reports, proposals and formal oral presentations. The central focus of the course will be the completion of a discipline-specific final project, in which the technical communication skills learned during the course will be enhanced. A major goal of this project, and the class, is to introduce students to the demands of their chosen professions, and thereby prepare them for the kinds of disciplined intellectual and practical work they will be required to complete. Prerequisite: ENGL111.

ENGL320
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.

ENGL335
Children's Literature

(3,0) 3

This course focuses on understanding the historical, cultural, and generic dimensions of children's literature, with emphasis on critical reading, literary analysis, and the selection and evaluation of texts for children and young adults. Pre- corequisites: ENGL111 or COMM101.

ENGL336

Young Adult Literature and Culture

(3,0) 3

This course focuses on understanding the historical, cultural, and generic dimensions of young adult literature, with emphasis on critical reading, literary analysis, and selection and evaluation of culturally diverse texts for children and young adults. Prerequisite: ENGL180.

ENGL345

Studies in Classic Texts

(3,0) 3

Readings in literature, beyond North American traditions, that have possessed profound influence or reach throughout history, including theoretical and critical approaches to these texts, examining form, theme, and genre. Includes classic Greek drama, classic British literature from the Anglo-Saxon period through the twentieth century, Shakespeare, mythology, folklore, and world literature in translation. Prerequisites: ENGL111, ENGL180.

ENGL380

History of Literary Criticism

(3,0) 3

An investigation of the history of critical theory to include classicism, neoclassicism, romanticism, the New Critics and contemporary critical trends. This course prepares students for advanced studies in literature. Prerequisite: Either ENGL233 and ENGL234 or ENGL231 and ENGL232.

ENGL398

Community Workshop Internship

3 3

This is an internship designed to provide students with an opportunity to earn credit while obtaining meaningful work experience leading a creative writing community workshop. 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 6 credits total. Prerequisite: ENGL223, a 2.50 gpa in the major, and permission of the instructor.

ENGL399

Publishing Internship

(1-2) 1-2

This course is designed to provide students with an opportunity to earn credit while obtaining meaningful work experience in English or publishing 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 up to four times at 1-2 credit hours for a maximum of 3 credit hours with each LSSU publication, up to 6 credits total. Prerequisite: 2.5 GPA in major and permission of the instructor.

ENGL409

Advanced Writing Workshop

(3,0) 3

This course is a workshop for advanced level writing in a variety of genres, with an emphasis on students doing sustained work in a chosen genre. Students will complete a final portfolio and projects relating to the writing life and publishing world. Prerequisites: Two courses from: ENGL301, ENGL302, or ENGL303.

ENGL435

Studies in Visual Texts

(3,0) 3

Theoretical and critical approaches to visual texts, with the focus on graphic novels and film, examining form, theme, and genre and the production and interpretation of meaning in visual media. Prerequisites: ENGL111, ENGL180.

ENGL440

Advanced Studies in British Literature

(3,0) 3

Examination, implementing rigorous research and critical methods, of a notable period, genre, aesthetics, or movement in British literature. Prerequisite: ENGL380.

ENGL442

Advanced Studies in American Literature

(3,0) 3

Examination, implementing rigorous research and critical methods, of a notable period, genre, aesthetics, or movement in American literature. Prerequisite: ENGL380.

ENGL450

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.

ENGL470

Language Arts Senior Thesis

(3,0) 3

Students engage in sustained exploration of an English Language arts topic, such as literacy education, writing pedagogy, or children's literature, complete an independent research project under the direction of the instructor, and develop it into a major paper. Prerequisite: Language Arts Major, Senior Standing.

ENGL480

Creative Writing Portfolio I

(3,0) 3

This is the first in a series of two capstone courses. Working with an English faculty member on an independent study basis, the student will create a proposal for a unified collection of creative work of literary merit in a chosen genre. Upon approval

of the proposal, the student will make significant progress toward completion of the creative work. Prerequisites: Creative writing major, senior standing, and ENGL409.

ENGL482

Creative Writing Portfolio II

(3,0) 3

This is the second in a series of two capstone courses. Working with an English faculty member on an independent study basis, the student will complete a unified collection of creative work of literary merit in a chosen genre. Prerequisites: ENGL480.

ENGL490

Senior Thesis I

(2,0) 2

In consultation with an English faculty member, students will gather research and produce a bibliography and research proposal, as well as begin writing the thesis. This course is an independent study. Prerequisites: Literature or English Education major, senior standing, and ENGL380 or EDUC415.

ENGL499

Senior Thesis

(2,0) 2

Completion of the thesis with focus on revising and editing of the final project. This course is an independent study. Prerequisite: ENGL490.

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EVRN131

Introduction to GIS and GPS

(2,3) 3

This course develops foundational knowledge and skills in (1) cartography (the science and art of map making); (2) remote sensing; (3) geographic information systems (GIS) and the many application of GIS in diverse professional and academic fields; and (4) the theory and operation of GPS receivers and data integration with GIS. Prerequisites: none.

EVRN211

Field Data Methods

(0,2) 1

A field intensive course including hands-on projects to delineate spatial boundaries based geographic, topographic, and/or ecological constructs (e.g. wetlands) to support decision-making with regards to conservation, mitigation, land use, or restoration. Prerequisites: BIOL132 and EVRN131.

EVRN225

Intermediate GIS

(2,3) 3

This course includes design, implementation, and use of geographic information systems (GIS) for a variety of practical applications and research topics. Emphasis will

be on geodatabases, georeferencing, geocoding, and geoprocessing, as well as providing an introduction to advanced topics using ESRI's suite of geospatial applications. Prerequisite: EVRN131.

EVRN290

Independent Study in Environmental Science

(1-4,0) 1-4

Special studies and/or research in environmental science for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of school dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no I (incomplete) grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the School of Science and Natural Resources.

EVRN311

Environmental Law

(3,0) 3 Alternate Years

Study of the fundamental concepts of environmental law and ethics. Course includes a survey of the field of environmental ethics and a discussion of ethical issues, a review of the basic legal systems and research techniques, state and federal environmental statutes and codes of conduct for environmental professionals. Extensive use of case studies related to application of environmental law are used to illustrate ethical dilemmas and the approaches for resolving them. Prerequisite: junior standing.

EVRN315

Human Impacts on the Environment

(3,3) 4

A study of human impacts on the environment, with an emphasis on global sustainability issues including impact from technology, population growth, agricultural and land use, climate change, chemical use and pollution, and energy systems. The laboratory will focus on developing skills in modeling, site assessment, and resource management. Prerequisite: NSCI103, ENGL111, and one semester of college chemistry.

EVRN317

Environmental Health Applications

(3,3) 4

A systems approach addressing the factors that contribute to illness, injury, or death, and that affect the health status of individuals and populations. Topics include: environments within buildings, food sanitation, recreation facilities, personal services, and community noise and control. The laboratory emphasizes methods of measuring and evaluating environmental health risks as well as field experience. Prerequisite: One semester of chemistry and NSCI103 or permission of instructor.

EVRN325

Geospatial Analysis

(2,3) 3

This course utilizes visualization of spatial data with GIS-based methods to analyze the data's distribution in space and/or time. Key topics will include the properties and quality of spatial data from land based and remote sensing sources, and the conceptual framework of spatial analysis. Project-centric lab exercises will include a variety of geospatial application such as the analysis of land use/land cover change,

digital elevation model (DEM) analysis for terrain, watershed and flow, spatial interpolation, site suitability analysis, and spatial modeling through public and/or private sector applications. Prerequisite: EVRN225.

EVRN341

Fate and Transport in the Environment

(3,3) 4

A study of the fate and transport of chemicals in the hydrosphere, atmosphere, lithosphere, and biosphere, and the modern analytical techniques utilized by environmental chemists. The laboratory component is project based and will utilize modern analytical instrumentation and modeling approaches. Prerequisite: CHEM116.

EVRN355

GIS Programming and Applications

(3,3) 4 Alternate Years

Spatial models and Python scripts are used to extend the functionality of GIS, and to automate and document spatial analysis and data management processes. Core topics include creating and running models in a GIS environment, converting and modifying model scripts, and developing Python scripts to process, map and analyze spatial data. Prerequisites: EVRN225 and CSCI105 or by permission of instructor.

EVRN365

Applied Geospatial Technologies

(3,3) 4 Alternate Years

This course focuses on contemporary and emerging trends in field-based geospatial technologies such as using unmanned aerial vehicles (e.g. drones), land survey equipment and advanced GPS for data collection. Course content will evolve to reflect the current state of technologies in geospatial data acquisition, processing, and delivery. Prerequisite: EVRN225.

EVRN389

Environmental Research Methods

(1,5) 3

A variety of sampling techniques and laboratory methods are introduced as they relate to the environmental sciences. These methods include sampling, preservation, and analysis of biotic (plankton, fish, benthic invertebrates, DNA, pathogens) and abiotic (water quality, sediments, soil, climate) data. Topics include representative sampling, trace inorganic and organic methods, calibration, selection of analytical methods, QA/QC, data analysis, and cost comparison. This course requires travel over spring break. Prerequisites: CHEM108 and CHEM109 or CHEM116; either NSCI103, NSCI116, NRES286 or NRES345; and either MATH207, BUSN211 or BIOL280.

EVRN399

Internship in the Environmental Sciences

(1-4) 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. Work hours and activities must be documented daily and approved by both the on-site supervisor and the instructor to receive credit. The course may be repeated for a maximum of four credits.

Prerequisite: 2.5 GPA in major, Junior standing and permission of chair at least one semester in advance of registering for the course.

EVRN435
Environmental Systems
(3,0) 3

A systems approach addressing engineered systems and their environmental impacts in modern society. Students will describe and analyze the causes and consequences of air pollution and air pollution control, water pollution and water pollution control (point source and nonpoint source controls), waste treatment, wastewater treatment, drinking water treatment, soil remediation, modern landfills, and design criteria. Prerequisites: MATH111, CHEM115, and NSCI103.

EVRN445
Remote Sensing and Spatial Statistics
(3,3) 4

Remote sensing skills such as ortho-rectification, color balancing, tiling imagery, and automate feature recognition will be used to analyze spatial data such as aerial photography, hyperspectral imagery, multi-spectral imagery, LiDAR, microwave, and RADAR. Spatial statistics focuses on analyzing patterns, mapping clusters, and identifying geographic distributions using point pattern analysis spatial autocorrelation, spatial regression and kriging. Prerequisite: EVRN325.

EVRN450
Laboratory Apprentice
(0,3) Per Credit 1-2

Students will assist in laboratories, learning instructional techniques, under direction of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the faculty member in charge of the specific laboratory, and the department chair. Credits may be used as EVRN electives.

EVRN490
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(incomplete) grades on their transcript. Independent study courses may be repeated for a maximum of eight credits. Additional information is available at the College of Natural and Mathematical Sciences office.

EVRN495
Senior Project
(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. This course will be required for a degree certified by the American Chemical Society. This course may not be repeated for credit. Prerequisites: EVRN395 (also listed as CHEM395), and permission of instructor. Dual listed as CHEM495.

FINC242

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: MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC245

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 FINC341 may not enroll in this course. Prerequisites: ACTG132, 230, or OFFC119, and MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC248

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: MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC341

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: ACTG133 and MATH111.

FINC443

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: BUSN350 and MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

FINC446

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: FINC341.

FINC448

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: FINC341.

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FINE405

Independent Project

(3,0) 3

Under the direction of an appropriate supervisor, the student will design and execute a scholarly (academic/creative) or practical (business/management) project related to an artistic discipline. The project will culminate in a relevant performance, works of art, composition, paper, presentation, or other appropriate product. Prerequisites: Instructor approval. This course may be repeated once for a total of six credits.

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FIRE101

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.

FIRE102

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.

FIRE111

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.

FIRE197

Physical Fitness for Public Safety

(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement

and fire science certification students. Fire science students take the course semester before FIRE220.

FIRE201

Fire Protection Construction Concepts

(3,0) 3

Impact of building construction concepts and methods on firefighting tactics and strategy, decision making and safety. Presentation of the ramifications of hostile fire on construction and building materials. Prerequisite: FIRE101.

FIRE204

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam and FIRE101 or FIRE102.

FIRE206

Fire Protection Systems, Equipment and Industrial Fire Protection

(3,0) 3

Use and water supply needs of sprinkler and stand pipe systems and devices, fixed detection and control 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. Examination of fire and lifestyle hazards in business and industry. Emphasis on managing fire prevention and training private fire brigades. Prerequisites: FIRE101, FIRE111, FIRE204 and MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

FIRE211

Tactics and Strategy

(3,0) 3

Utilization of manpower, equipment and apparatus on the fireground. Emphasis: Pre-fire planning, fire ground decision making. Implementing tactics and disaster planning. Students will use fire simulation programs and interactive technology to apply and implement the principles covered in didactic instruction. Prerequisite: Either FIRE101 or 102 and 204 as a pre- or corequisite.

FIRE219

Firefighter Essentials

(3,0) 3

This course is the first part of a two class sequence; the second part of the sequence is FIRE220. This course will cover the principles of firefighting attack skills through the practical instruction and exercises as outlined by the Michigan Firefighters Training Council (MFFTC). This course introduces the student to the application of the principles of fire attack and strategy for Firefighter I certificate and portions of Firefighter II through the use of exercises and computer-generated simulations. Hazmat incident analysis and other major disaster case studies are used in this class. Prerequisites: FIRE101 and 111. Corequisites: FIRE197, 204, and 206. Completion of special medical examination.

FIRE220

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: FIRE219. Corequisites: FIRE206 and FIRE211. Completion of specialized medical examination.

FIRE301

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, formulations and its relation to fire prevention and public education efforts and responsibilities of the fire service. Prerequisites: FIRE111, FIRE206 and Junior Standing.

FIRE309

Fire-Related Human Behavior

(3,0) 3

This course will provide students the knowledge to understand how humans behave in fire and emergency situations, and how that behavior is integrated into life safety systems development and design. Students will study past and present research on human behavior, life safety models, building design, and life safety education. Students will develop an understanding how to analyze possible outcomes as it relates to human survivability in fire and emergency situations. Pre- or Co-requisites: FIRE101, FIRE206, and FIRE301, or permission of instructor.

FIRE312

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: FIRE111 or CHEM116 and junior standing.

FIRE315

Company Level Supervision and Management

(3,0) 3

This course is intended to provide a comprehensive overview of supervision and administration skills necessary to function as a company officer, which would include but not be limited to planning, budgeting, time management, training, emergency incident command, and facility maintenance and care. Pre- or corequisites: FIRE101, FIRE111, FIRE204, FIRE206 and FIRE211.

FIRE325

Homeland Security and Emergency Services

(3,0) 3

This course will prepare all graduates from a variety of majors to understand how homeland security impacts the US political system as a whole, but especially from

the standpoint of emergency response and preparedness. Investigates the impact of the federal, homeland security apparatus on emergency response organizations at the state and local level. Includes a historical review of homeland security measures beginning in WWI and through WWII and the Korean War. Especially reviews the security situation during the Cold War. The course deals with the federal agencies usually not associated with homeland security, such as DEA, ATF, the military departments, FAA, CDC, the National Guard Bureau, and the DOD. Prerequisite: Junior standing. Students from other majors are encouraged to enroll with permission of instructor. Also listed as CJUS325.

FIRE401

Senior Seminar

(3,0) 3

Seminar and independent study course with individual student guidance by faculty on selected research topics in fire science. Prerequisites: ENGL111; Pre or Corequisite MATH207 or CJUS345, and Senior standing.

FIRE402

Fire Service and the Law

(3,0) 3

Capstone course. Introduces the judicial system in which the fire service operates. Covers civil action, liability, labor, prevention, safety (OSHA), and environmental law. Prerequisite: Senior level standing.

FIRE403

Fire Science Internship

3-9

Fire science internship with an agency. Credit is based on the equivalent of 45 hours of field work per credit hour. Students must make application by the ninth week of the previous semester. Prerequisites: Senior standing and permission of instructor. Course may be repeated for a maximum of 9 credits.

FIRE490

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.

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GEOG106

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. Credit for both GEOG106 and NSCI107 not permitted.

GEOG108

Physical Geography: Meteorology & Climatology

(3,2) 4

Introduction to earth-sun relationships, maps and elementary principles of atmospheric science. Natural (physical) science credit given. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. Credit for both GEOG108 and NSCI105 not permitted.

GEOG201

World Regional Geography

(4,0) 4 Alternate Years

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.

GEOG302

Economic Geography

(4,0) 4 Alternate Years

A study of the internal and external inter-relationships of the various economic groupings of the world; i.e. North America, Europe and the emerging third world.

GEOG306

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.

GEOG322

Geography of South America, Central America and the Caribbean Region

(4,0) 4 Alternate Years

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.

GEOG323

Geography of East and Southeast Asia

(4,0) 4 Alternate Years

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.

GEOG490

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.

GEOG492

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.

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GEOL115

Field Excursions in Earth Science

(2,4) 4

A field- and project-based educational experience in which aspects of geology, including environmental geology, earth resources, tectonic processes and the interrelationships among geology and other natural sciences, will be addressed. Travel destinations will include regions with unique natural history.

GEOL121

Physical Geology

(3,2) 4

The study of processes and features of the rocks and surficial materials that form the Earth's crust. Emphasis will be placed on the dynamic earth including volcanoes, plate tectonics, geologic time, catastrophic events such as earthquakes, and natural resources and their impact on society. The class requires student projects and emphasizes active problem-solving.

GEOL122

Historical Geology

(3,2) 4

The study of surficial, tectonic, geologic and biologic processes in the context of an Earth history perspective. Emphasis will be placed on evolution of the earth; stratigraphic principles, tectonic framework of North America; rock forming processes, landforms and depositional environments; climate, weathering, surficial processes, and sea level changes; and significant events in the history of plants and animals as recorded by fossils and paleontology studies.

GEOL223

Earth Materials

(3,3) 4

A course emphasizing techniques for identification and interpretation of minerals and rocks. Major topics include: physical properties, crystalline structure, and chemical composition of minerals, classification of minerals and rocks; interpretation of origins of igneous, sedimentary and metamorphic rocks; plate tectonic occurrence of minerals and rock assemblages; and societal and economic significance of minerals and rocks. Prerequisite: GEOL121 or NSCI102. Pre- or corequisites: GEOL122 and CHEM115.

GEOL290

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 chair. This course may be repeated for a maximum of eight credits. Prerequisite: Sophomore standing or higher.

GEOL308

Structural Geology Systems

(3,3) 4

A study of the deformation of the Earth through a project-centered approach that focuses on geologic questions. Course emphasis is on descriptive, kinematic and dynamic analysis of geologic structures, deformation mechanisms and the evolution of each in the context of the regional and global geology. Day and/or weekend field excursions may be required. Prerequisite: GEOL121 and GEOL122.

GEOL315

Geoenvironmental Systems

(3,3) 4 Alternate Years

The study of environmental issues in a geological context through local and regional field projects. Projects will examine issues such as flooding, shoreline erosion, slope stability, groundwater resources and contamination, and the environmental impact of mineral and energy resource extraction. Emphasis will be placed on the evaluation of environmental issues through the application of geological and environmental field data such as collecting and analyzing sediments, and bedrock and sediment mapping. Prerequisites: GEOL121 and GEOL122, CHEM115 and EVRN131.

GEOL322

Geochemical Systems

(3,3) 4

The study of high- and low-temperature geochemical processes including topics such as chemical, mineral and rock equilibrium, redox reactions, isotopes, chemical weathering, and nutrient cycles. Low-temperature geochemistry will emphasize processes that occur in soil, water, air, and sediments. High-temperature geochemistry will focus on trace and primary elements, igneous and metamorphic processes and geochemical processes that form ore-bearing mineral deposits. A field trip to visit mining, mineral exploration or environmental sites may be required. Prerequisites: GEOL223 and CHEM115.

GEOL334

Hydrologic Systems: Surface and Groundwater

(3,3) 4

A study of hydrologic systems with an emphasis on hydrologic processes on land surface, sub-surface, and near-surface atmosphere. Water movement through geologic materials, aquifer properties, well-water dynamics, and contaminant transport in groundwater; physical basis of evapotranspiration, precipitation, and surface runoff; and causes and solution approaches of water resource problems will be studied. Laboratory components will provide experience in hydrologic field-techniques, analytical methods of hydrologic data, model-based exercises and data analysis. Prerequisites: GEOL121, EVRN131 and MATH111. Pre-or Corequisite: GEOL122.

GEOL355

Stratigraphy and Sedimentation

(3,3) 4 Alternate Years

The study and interpretation of clastic and carbonate sediments and rocks and the environments in which they form. Emphasis will be on stratigraphic and sedimentological principal through topics such as clastic transport and fluid flow; sedimentary structures; lithostratigraphy, biostratigraphy and introduction to sequence stratigraphy; facies recognition and relationships; depositional models; stratigraphic diagrams and maps; diagenesis and tectonics and sedimentation. Weekend fieldtrips may be required. Prerequisite: GEOL223 and GEOL308.

GEOL380

Introduction to Field Geology

(0,9) 3

Introduction to field methods in geology including measurement of sections, mapping techniques, and field interpretation of outcrops. A variety of geologic provinces and environments will be examined. A supply and travel fee will be charged. Prerequisites: GEOL223 and GEOL308.

GEOL410

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: MATH112 or 151, CSCI101 or 111, PHYS221 or 231.

GEOL431

Geophysical Systems

(3,3) 4 Alternate Years

The study of geologic, geophysical, and environmental problems using geophysical techniques such as: ground penetrating radar, magnetic, electromagnetic, resistivity, gravity, seismics, etc. Projects will involve geophysical and geologic survey design, data collection, data processing, and data interpretation and will require the integration of geophysical and geological data to solve problems. Prerequisite: GEOL308. Pre- or corequisites: MATH112 or MATH151 and PHYS221 or PHYS231.

GEOL440

Technology in Geology

(1,3) 2 Alternate Years

Students will use modern technologies to evaluate geologic problems and questions. These technologies will change with time but may include computer, field and/or laboratory applications. Prerequisite: Eight or more credits of GEOL 3XX and/or GEOL4XX courses.

GEOL450

Geology Seminar I

(0,2) 1 Alternate Years

Study, discussion, and laboratory experience in specialized topics in geology. Students will collect and compile information, write research papers, make presentations, and lead discussions. Prerequisite: Two GEOL courses at the 300 level or above.

GEOL451

Geology Seminar II

(0,2) 1 Alternate Years

Study, discussion, and laboratory experience in specialized topics in geology. Students will collect and compile information, write research papers, make presentations, and lead discussions. Prerequisite: Two GEOL courses at the 300 level or above.

GEOL468

Tectonic Systems

(3,6) 5 Alternate years

Study of tectonic process and how these processes affect the earth and its evolution with time. A variety of modern and ancient tectonic settings will be studied through projects and case studies. The deformational, geochemical, mineralogical, petrological, sedimentological and geophysical characteristics of individual tectonic settings will be evaluated and their evolution with time will be analyzed. Weekend and/or weeklong field trips may be required. Prerequisites: GEOL223 and GEOL308.

GEOL480

Advanced Field Geology

(0,9) 3 Alternate Years

Three weeks of advanced field methods in geology including field mapping of deformed rocks, construction of cross sections, and interpretation of depositional and deformational histories. A variety of geologic provinces and environments will be examined. A supply and travel fee will be charged. Prerequisites: GEOL380 and one additional GEOL course at the 300 level or above.

GEOL490

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 chair. This course may be repeated for a maximum of eight credits. Prerequisites: Junior standing or higher.

GEOL495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. Prerequisite: NRES399 or equivalent and permission of the instructor.

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HIST101

History of World Civilization I

(4,0) 4 Fall

A study of world civilization from earliest time through the baroque.

HIST102
History of World Civilization II
(4,0) 4 Spring

A study of world civilization from the baroque to the present.

HIST131
United States History I
(4,0) 4 Fall

A study of United States history from the colonial settlement to the end of the American Civil War in 1865.

HIST132
United States History II
(4,0) 4 Spring

A study of United States history from the end of the Civil War to the present.

HIST203
Chinese Cultural Diversity
(3,0) 3

Designed for students interested in the diversity of Chinese culture and study abroad. Taught in English and offered at a partner university in China during the first summer session. This four-week course explores, but is not limited to, the traditional social values, classes, divergences, ethnicity, religion, and gender issues characteristic of Chinese culture. The course is conducted in a lecture format with class discussions and guided field trips.

HIST231
Natives and Newcomers
(3,0) 3

This course is an introduction to the encounters between Native Americans, Europeans, and Africans in North America from the late fifteenth century to the mid-eighteenth century. Students will gain a working knowledge on how these encounters generated a variety of cultural, economic, religious, political, social, and military interactions. No Prerequisites or Co-requisites required.

HIST250
The Atlantic World
(3,0) 3

From the late 15th through the 18th centuries, the continents bordering the Atlantic Ocean were thrust into interaction. Europeans, Africans, and indigenous peoples negotiated diverse new societies through both confrontation and cooperation. This course explores interconnections through histories of Europe, Africa, North America, and the Caribbean, demonstrating the associations between peoples and nations within a global context. Prerequisite: HIST101 or HIST131. Spring odd-numbered years.

HIST296
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: HIST101/HIST102 sequence or HIST131/HIST132 sequence. Fall.

HIST301

History of England: 1000 to 1714

(4,0) 4 On Demand

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.

HIST302

England in the Modern World

(4,0) 4 Spring, even-numbered years

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.

HIST310

Russia: From Under-developed State to Superpower

(4,0) 4 Fall, odd-numbered years

A study of Russian history from Peter the Great to the present.

HIST315

Europe From Napoleon to World War I

(4,0) 4 Fall, even-numbered years

A study in the political and economic history of Europe in the period 1789-1914.

HIST316

Europe in the 20th Century

(4,0) 4 Spring, odd-numbered years

A study of Europe in the age of Nazism, Communism, World War I and II, and the Common Market.

HIST321

History of Michigan

(2,0) 2

The History of Michigan is a survey course that will include an examination of the geology, geography, and history of the state. This course will also study the role of citizens, events, issues, and their impact on the development of Michigan as well as the larger developments in the United States during the Jacksonian Period, the Civil War Period, the Period of Rapid Industrialization and Urbanization, the Period of 1914 to 1945, the Period 1950 to the Present, the Period of Industrial Expansion and Decline, and the Post-Vietnam War Period of Globalization. The major political, economic, social, and cultural movements and developments of these historic periods will be examined.

HIST333

American Military History

(4,0) 4

This is a survey of military history that will study the inter-relationships of warfare and society in American history. It will not only investigate how political and societal changes have influenced the nature of warfare in American history, but how the composition of the military establishment and its transformations has impacted state and society.

HIST361

Latin America

(4,0) 4 Fall, even-numbered years

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 the role in the change of problems of U.S.-Latin American relations will be an important focus of this study. Prerequisite: GEOG322 geography of South America.

HIST371

Far East Civilization: 1850 to Present

(4,0) 4 Odd numbered years

A study of the history of China, Japan, India and adjoining areas of Asia from 1850 to present.

HIST440

American Revolutionary Era

(3,0) 3

This course examines the diversity of Colonial America in the mid 18th century. It traces the challenges faced by the British colonies in the French and Indian War, the emergence of political unity and national identity among Americans, and the achievement of American independence by 1783. Prerequisite: HIST101 and HIST102 sequence or HIST131 and HIST132 sequence; HIST296; or instructor permission.

HIST441

History of American Foreign Policy, 1776-1950

(3,0) 3

This course examines US Foreign Policy from 1776 to 1950, with some consideration to the 1607-1776 era. The course investigates US conduct in war and diplomacy, issues of cultural contact, impact of domestic politics on foreign policymaking, the organization political economy, and problems of American Imperialism. Prerequisite or Co-requisite of the HIST131, HIST132 sequence or POLI110.

HIST490

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. Prerequisite: Permission of instructor.

HIST497

Senior Seminar in History

(0-6) 2

Students will complete a 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: HIST496 and instructor permission.

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HLTH101

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.

HLTH104

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.

HLTH150

Introduction to Public Health

(3,0) 3

A survey of the field of public health from a biopsychosocial perspective. Prerequisites: None.

HLTH185

Basic Health Care Skills

(1,3) 2

The purpose of this course is to introduce the student to basic health care skills. Student learning will include basic concepts and skills related to medical and surgical asepsis, total hygiene, mobility, body mechanics, patient safety, phlebotomy skills, and earn a certificate in mental health first aid. Prerequisite: HLTH101.

HLTH208

Principles of Human Nutrition

(3,0) 3

Fundamentals of human nutrition and nutrition therapy are presented in relation to human body function in wellness and illness. With a special focus across the lifespan, content from this course begins to build a foundation for the interpretation of diet regimes and diet formulations for patients with nutritional needs. This course is required for all nursing students. Prerequisites: BIOL122 or BIOL105 with a grade of C or better.

HLTH209
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: BIOL122 or 105 and CHEM105.

HLTH210
Introduction to Health Care Concepts and Issues
(3,0) 3

This course is an introduction to the health care system with analysis of the issues and trends affecting the provision of health care services. Health care topics reviewed will include both local and global issues. Required course for environmental health and healthcare and administration; may also be used as an elective course. Material supports accreditation criteria for environmental health. Prerequisite: Sophomore standing.

HLTH232
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: BIOL122.

HLTH235
Healthcare Informatics
(2,0) 2

The purpose of this course is to gain a basic understanding of nursing informatics and its application to education, research and practice in health care professions. Topics include computer literacy skills, information literacy, and overall informatics competencies. Competencies taught will meet the American Nurses Association Scope and Standards of Nursing Informatics Practice (ANA, 2001) for beginning nurses. Prerequisites: Admission into Nursing program and basic computer skills.

HLTH310
Pathopharmacology
(3,0) 3

This course applies information learned in Pharmacology and Pathophysiology to incorporate evidence-based findings into nursing practice. This course will provide an advanced foundation for clinical assessment, clinical decision-making, and patient management. Through the expansion of knowledge, technology, and skills, students will advance their nursing practice into the care of patients with selected disease states and determine the most appropriate route of care. Prerequisites: HLTH209, HLTH232, NURS213.

HLTH328
Multicultural Approaches to Health Care
(3,0) 3

This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations, assessment techniques and alternative/complementary health practices. Prerequisite: SOCY101. Also listed as NURS328.

HLTH329

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: SOCY101.

HLTH330

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: HLTH208.

HLTH352

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: PSYC155 and junior level status. Also listed as NURS352.

HLTH452

Contemporary Issues in Nutrition

(3,0) 3

Utilizing an epidemiological frame, students will learn how to research current issues and topics in nutrition for closer examination and discussion. Nutritional trends and topics such as nutraceuticals, nutrigenomics, functional foods, supplements, herbs, and advertised dietary approaches aimed at promoting wellness and health will be explored in-depth and analyzed. Prerequisites: BIOL122, CHEM105, HLTH104, 108, 208 and EXER275.

HLTH490

Independent Study in Health

(1-4,0) 1-4

Individual investigation of topics tailored to student interest and need. Prerequisites: Junior or senior standing and instructor permission.

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HONR101

Honors First-Year Seminar (variable topics)

(1-2,0) 1-2

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.

HONR199

Honors Freshman Seminar

(1,0) 1

This course creates a learning community centered around the mind. Students will explore concepts and content related to the Honor Program's three pillars of Self, Society, and Citizen; the university's Campus Read book; and other topics. This course, furthermore, introduces students to the structure, governance, and supplemental opportunities available to Honors Program students.

HONR202

Honors Contemporary Issues

(3,0) 3

An interdisciplinary sophomore-level seminar for University Honors Programs students. The course is designed to accommodate a range of specific topics; the particular topics, however, will investigate some aspect of the history of intellectual ideas, the nature of intellectual inquiry, and/or the construction of knowledge. The instructor serves as a facilitator in the seminar format which is intended to encourage student-directed learning. Prerequisites: formal admission to the University Honors Program and/or permission of the Honors Program coordinator. May be repeated for a maximum of 9 credits.

HONR302

Honors Ideas Seminar

(3,0) 3

A junior-level seminar for University Honors Program students. The course is designed to accommodate a range of special topics to be submitted by LSSU faculty under the general provision for Special Topics; the topics may evolve out of an interdisciplinary focus on some aspect of traditional disciplinary subject matter, or may be a reconfiguration of a regular course, redesigned to meet the particular needs of Honors Program students. The role of the instructor, however, would be as a facilitator, working within the seminar format to encourage student-directed learning around a topic requiring intellectual rigor. As this is a core requirement for all junior Honors students, it is expected that a given course proposal would not require prerequisites beyond those for general education. Prerequisites: formal admission to the University Honors Program, junior status, and/or permission of the Honors Program coordinator. HONR201 recommended. May be repeated for a maximum of nine credits.

HONR401

Honors Thesis

(1-4,0) 1-4

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, HONR202 and HONR302. Students must present a fully developed proposal to the Honors Council for approval before enrolling in HONR401 or its equivalent in their major.

HONR499

Honors Senior Seminar

(1,0) 1

This is the culminating experience of the Honors Program course experience centered around questions of living a meaningful life, leading others in responsible ways, and mentoring the next cohort of LSSU Honors students.

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HUMN203

Survey of Chinese Culture

(3,0) 3

Designed for students interested in Chinese culture and study abroad. Taught in English and offered at a partner university in China during the first summer session. This four-week course introduces the major cultural and artistic aspects of Chinese society. Lecture topics include Chinese history, geography, language, ethos, philosophy, literature, religion, historical relics, education, medicine, architecture, etiquette, and social and economic aspects of Chinese culture. Field trips to museums, art galleries, historic sites, and places of interest are scheduled throughout the trip.

HUMN240

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 NATV240.

HUMN251

Humanities I

(4,0) 4

This course uses an interdisciplinary approach that includes art, philosophy, literature, and music to understand the evolution of culture. It begins with prehistory and the first agricultural settlements in Egypt and the Fertile Crescent. Some cross-cultural comparisons are made through the study of ancient Indian and Chinese culture. Emphasis is placed on the intellectual development of the ancient Hebrews. Ancient Greece and Rome follow, as the progenitors of western culture. We examine the religious practices of emerging Islam, set in contrast and comparison with the Christian intellectual tradition through the Byzantine, Romanesque and Gothic periods. Hindu and Buddhist ideas and artifacts provide further context and perspective. The course concludes with the study of renaissance culture into the early 16th century. Prerequisite: ENGL110.

HUMN252

Humanities II

(4,0) 4

Humanistic study moves across the disciplines of art, philosophy, literature, and music. This course begins with a review of renaissance humanism and explores the Reformation and the Catholic Church's response to it. The age of despots is examined in the Baroque and Neoclassical styles leading to the Enlightenment and the Age of Reason. Mention is made of the democratic revolutions that occurred in the United States, France, and England. Impressionism, Expressionism, Surrealism and other modern styles are presented as they appear in the art and literature of the 20th and 21st centuries. Prerequisite: ENGL110.

HUMN255

World Mythology

(4,0) 4

A survey of world mythology from Gilgamesh to Finnegans Wake. Prerequisite: ENGL110.

HUMN256

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. Prerequisite: ENGL110.

HUMN261

World Literature I

(3,0) 3 On Demand

The Ancient World to the Renaissance. Readings in translation of significant, primarily Western texts. Selection can include the Bible and works by such authors as Homer, Virgil, Thucydides, Tacitus, Boccaccio, Montaigne, Rabelais, and others. Prerequisite: ENGL110.

HUMN262

World Literature II

(3,0) 3 On Demand

The Renaissance to modern times. Readings in translation of significant, primarily Western, texts. Selections can include works by Galileo, Voltaire, Racine, Goethe, Ibsen, Dostoevsky, Brecht, Kafka, Sartre and others. Prerequisite: ENGL110.

HUMN490

Directed Studies in Humanities

(1,0) 1 On Demand

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.

INTB289

Competing in the Global Market Place

(3,0) 3

This course presents a systematic overview of international business and provides an introduction to important issues, including international trade policy, the global monetary system, and strategies of international business. Additionally, the course will look at management practices of international business, including: organizational structure of multinational organizations, production and logistics, human resource management, and financial management.

INTB375

International Business Law

(3,0) 3

The course provides an introduction to the environment of international business and law. It will focus on the foundations and principles of the international legal environment and international legal systems. The course covers the law on international trade. It allows the student to understand government foreign trade policies, the law concerning international business transactions, importing, exporting, transportation and logistics. This course covers a range of legal issues involved in conducting international business, surveying some of the many issues encountered in intellectual property and licensing, and the taxation of international business transactions.

INTB420

International Comparative Management

(3,0) 3

This course in international comparative management will examine important trends impacting international business as well as the major and developing players in the international economy. The course will examine the stage on which international management is conducted, which includes political, legal and socio-cultural systems as a backdrop. The course will cover how firms develop and execute their international strategies and how they stay ahead of their competitors, once they do. An important aspect for the success of international companies is HR (Human Resources). The course will explore how firms can build an outstanding international workforce through selecting and motivating employees as well as dealing with a host of related human resource management issues, such as compensation, performance appraisal, training and development and labor relations from an international perspective. Prerequisites: MGMT360 or special permission of instructor.

INTB486

International Marketing

(3,0) 3

The International Marketing course examines the scope, challenge and dynamic environment of international marketing. This course will provide an understanding of the cultural environment of global markets, global opportunities and the development and implementation of global marketing strategies. Challenging decisions must be made in international marketing objectives-strategies-policies, regional & country market selection, products that fit regions-countries, multiple distribution channels, communications to fit each global region, management models & organizations per region-country, knowledge-information-data management,

exploration of cultural issues, competition, economies, and customers. Prerequisites: MRKT281 or permission of instructor.

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INTD310
Foreign Study
1-16 graded

Individual extension added based on student's program.

INTD320
Foreign Study
3-16 credit/no credit

Individual extension added based on student's program.

INTD333
The Origins of Human Nature
(4,0) 4

An integrated, interdisciplinary examination of the origins of human nature from the perspective of contemporary evolutionary theory, ethology and biological anthropology. The course examines the origins of - among other phenomena - sexual behavior, marriage and family life, crime, social stratification, leadership, government, politics, patriotism, nationalism, racism, ethnocentrism, aggression, genocide, war, ideology and morality. Prerequisites: a college biology course or PSYC101, one college course from each of two social science disciplines (anthropology, economics, political science, psychology, sociology), and junior standing.

INTD410
Foreign Study
(3-16) 3-16

Individual extension added based on student's program. (Graded)

INTD420
Foreign Study
(3-16) 3-16

Individual extension added based on student's program. 3-16 credit/no credit

INTD490
Senior Directed Study
(3-4,0) 3-4

This course is designed to allow liberal studies majors the opportunity to develop and implement a project/paper using the skills and knowledge from their previous course work. Projects/papers should relate to the student's individual areas of study, and represent a synthesis of their previous learning under the supervision of an appropriate faculty member. Prerequisites: senior status and approval of the appropriate chair(s).

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JAPN105

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.

JAPN106

Intensive Introductory Japanese Language II

(10,2) 10

This course is designed as a continuation of JAPN105. 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.

JAPN201

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.

JAPN202

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.

JAPN301

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.

JAPN302

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.

JOUR211
Newswriting
(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. Prerequisite: COMM280.

JOUR220
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.

JOUR310
Editing and Production
(3,0) 3

Focuses on news editing, headline writing, newspaper design and layout as well as newsroom management. Prerequisite: JOUR211.

JOUR413
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; COMM280 and JOUR211. File application with the chair of the Department of English and Communication by fifth week of previous semester.

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KINS101
Foundations in Kinesiology
(3,0) 3

Students will explore strategies aimed at creating success as they pursue their university and professional goals. Using a holistic and integrated approach, students will actively examine the multi-faceted field of Kinesiology. The breadth and impact of human movement will be revealed through field and reflection based experiences. Career opportunities, history, philosophy, current trends, curriculum development and how to navigate the university will be the emphasis.

KINS105
Program Dev & Leadership
(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.

KINS140

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.

KINS230

Ath Injury Illness Prevention

(3,0) 3

This is an introductory class to the field of athletic training. It will provide an overview for the student as to what an athletic trainer does. Topics 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.

KINS232

Ath Injury Illness Rec & Eval

(3,0) 3

This class will be a continuation of KINS230. After a general knowledge base is established in KINS230, KINS232 will elaborate on those concepts and extend them to the various extremities of the body as well as the spine and head. Prerequisites: KINS230 and BIOL122.

KINS234

Preventative Taping Techniques

(0,2) 1

To present current and comprehensive taping and wrapping techniques used in athletic training. Prerequisite: KINS232.

KINS248

Psy Sport Performance/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.

KINS262

Exercise Physiology

(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: BIOL121 and CHEM104 or CHEM115.

KINS265

Personal Fitness Training

(3,0) 3

This course will enable the student to develop knowledge and expertise in the components of sport-related fitness. Specifically, strength training, cardiovascular endurance, flexibility, reaction time, speed and agility will be explored in both traditional and non-traditional sports. Emphasis will be placed on the implementation and measurement of the above sport-related fitness components and the design of a strength training and conditioning program for the purpose of enhancing athletic performance.

KINS268

Fitness Eval I: Func Assessmnt

(2,2) 3

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. Prerequisites: BIOL121 and KINS140.

KINS270

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.

KINS275

Nutrition Sprt Exer Performnce

(3,0) 3

Explicitly details the role of the major nutrients in their application to wellness and fitness settings, as well as athletic performance. Specifically addresses the interaction of diet and exercise in modifying the condition of the individuals with metabolic dysfunction (diabetes, obesity) or compromised cardiovascular health (hypertension, coronary heart disease). Also examines the special nutritional needs of athletes and the effectiveness of ergogenic aids in enhancing sport performance. Prerequisites: BIOL121.

KINS295

Facility & Program Operations

(1,4) 3

Practical experiences that explore various types of work settings in kinesiology, working under a specialist in the student's chosen area of interest utilizing facilities on campus and in the community. Prerequisite: Pre or Co-requisite of KINS265.

KINS301

Ath Training Clinical Exp I

(0,4) 2

This course requires athletic training students to acquire, practice and demonstrate competency in basic clinical skills necessary to provide healthcare to a physically

active population in a variety of clinical settings. Prerequisites: junior status and admission to the Athletic Training Education Program.

KINS302

Ath Training Clinical Exp II

(0,4) 2

In this course, athletic training students are required to continue acquiring, practicing and demonstrating competency of the basic clinical skills necessary to provide healthcare to a physically active population in a variety of clinical settings. Prerequisites: KINS301 with a grade of C or better.

KINS332

Health Promotions

(3,0) 3

Health promotion raises a number of economic, public policy, and ethical issues that cut across society. This course will provide students with a strong theoretical foundation for wellness, health promotion and disease prevention for the purpose of maintaining function across the lifespan. Best evidence practice for the design and implementation of worksite health programs and the benefits of these programs for employers and employees will be examined. In addition, this course will examine different theories and models of health promotion from an organizational/community and population perspective.

KINS340

Therapeutic Modalities Ath Trn

(2,2) 3

This course will introduce the student to the theory and application of physical medicine devices commonly used in athletic training and sports medicine settings. Specific attention will be placed on the use of cryotherapy, thermotherapy, electrotherapy, ultrasound, traction, intermittent compression, and therapeutic massage in caring for physical injuries or illness. This course will focus on determining the most effective therapeutic modality for a given situation and the correct application of the selected therapeutic modality. This course is designed to present the knowledge, skills and values an entry-level certified athletic trainer must possess to plan, implement, document and assess the efficacy of therapeutic modalities in the care of physical injuries and illnesses. Prerequisites: KINS232 and BIOL122.

KINS344

Kinesiology

(3,0) 3

Science of movement applied to muscle, joint structure and function and application of physical laws of gravity, leverage, motion and balance to human performance. Video tape motion analysis is used to apply these theories into practical experience. Prerequisite: KINS141.

KINS345

Adapted Sports and Recreation

(3,0) 3

A study of specialized recreational and athletic opportunities available to individuals with illnesses and disabilities. Related associations, equipment, rules and classifications, resources and research will be encountered for a wide range of activities and conditions. When available, practical opportunities will be included as

part of the learning process. Prerequisite: junior standing.

KINS346

Therapeutic Ex Rehabilitation

(2,2) 3

KINS346 will introduce the student to the theory and application of commonly used rehabilitative exercises in the field of athletic training. Students will be introduced to the 10 Goals of Rehabilitation, and will then study the relationship that therapeutic exercise plays in the attainment of each goal. Students will then develop a comprehensive rehabilitation plan that will enable a physically active person to return to activity as safely as possible. Students will be exposed to current surgical techniques and the rehabilitation that is involved. Prerequisite: KINS262.

KINS348

Fitness Eval II Lab 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: KINS268 and KINS262.

KINS349

Orthopedic Assessment

(3,0) 3

Provides a clear, concise process of physical examination of the spine and extremities which would direct the student in a logical, efficient and thorough search of anatomy relevant to the field of sports medicine. This course will allow the student to continue to build a solid foundation in anatomy specific to orthopedic education. Prerequisites: KINS230 and KINS232.

KINS358

Research Methods Kinesiology

(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: MATH207 and KINS262.

KINS362

Applied Exercise Physiology

(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: BIOL122, CHEM115 and KINS262.

KINS370

Recreation for the Elderly

(3,0) 3 Alternate Years

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: RECS101, KINS105 and 200-level recreation electives; or NURS290 and HLTH352.

KINS375

Commercial Recreation

(3,0) 3 Alternate Years

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: KINS105 or BUSN121, ACTG230, ECON202 and FINC245.

KINS401

Internship I

(0,4) 2

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, and therapeutic rehabilitation skills into the health care of a physically active population in a variety of clinical settings. Prerequisite: KINS302 with a grade of C or better.

KINS402

Internship II

(0,4) 2

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, therapeutic rehabilitation skills and administrative skills into the healthcare of a physically active population in a variety of clinical settings. Prerequisite: KINS401 with a grade of C or better.

KINS428

Psych Exercise/Rehabilitation

(3,0) 3

This course focuses upon the theoretical and applied concepts of psychology as it relates to exercise, rehabilitation and sport. 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 on the effects of exercise and rehabilitation on adherence, chronic pain, anxiety, depression, sport injury and sport performance. Prerequisites: KINS358.

KINS434

Neurological Basics Motor Lrn

(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: BIOL122, KINS344 and KINS362.

KINS440
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.

KINS442
Electrocardiography Kinesiology
(3,0) 3

Examines electrophysiological basis of ECG, cardiac anatomy and metabolism responses to rest and exercise. Prerequisite: KINS262 with a C grade or better.

KINS444
Exercise Prescription
(3,0) 3

Provides experience in writing and developing advanced training and conditioning programs for a variety of populations. Process oriented; considers needs analysis and cyclic training.

KINS450
Phil Human Perform/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: KINS262 or RECS101 and junior status.

KINS452
Allied Health Administration
(3,0) 3

This course is intended to enhance the administrative ability of allied health professionals. Students will learn to apply current management theories to administrative problems they may face. This will allow entry level allied health professionals the ability to craft creative solutions to administrative problems. Content in this course includes management strategies for the following: Program offerings, finances, human resources, facilities, information, insurance, and legal considerations. Prerequisites: KINS230 and junior standing.

KINS481
Prof 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.

KINS482
Admin of Recreation Services

(3,0) 3

This is a capstone course designed for upper level School of Kinesiology students. Learning and applying administration aspects of the profession will include, but is not limited to, labor management, risk management, liability, facility management and planning, marketing, fundraising, budgeting, and current trends for various types of facilities - recreation centers, water parks and pools, fitness centers, parks, sports complexes and resorts. Prerequisite: KINS105 and Junior Standing.

KINS496

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.

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LAWS102

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.

LAWS202

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: LAWS102.

LAWS490

Independent Study in Legal 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.

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LIBR101

Introduction to Information Literacy

(1,0) 1

Introduces students to the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning, with special focus on critical self-reflection, as crucial to becoming more self-directed in that rapidly changing ecosystem (ACRL).

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LING403

Language Acquisition and Foreign Language Teaching

(3,0) 3

Introduction to theories of language and language acquisition as applied to current language teaching methods and classroom practices. This course is a requirement for both the Spanish teaching major and the Spanish teaching minor. The class will be taught in English, but students will use a foreign language of their choice in teaching presentations. Prerequisites: SPAN361 and SPAN362 or FREN351 and FREN352.

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MATH088

Beginning Algebra

(3,0) 3

A review of integer and rational number operations, introduction to algebra, algebraic expressions and solving of elementary equations and inequalities will be covered in this class. Manipulation and graphing of equations in two variables, as well as solving systems of equations in two variables. Multiplying, factoring and manipulating polynomial expressions. Credit in this course does not apply toward graduation. Students who are enrolled in MATH088 are encouraged to also enroll in MATH107 concurrently. Prerequisite: none.

MATH102

Intermediate Algebra

(3,0) 3

Algebra for students who have not had second-level high school algebra or who need a refresher course in that level of algebra. Quadratic equations, radical and rational expressions and equations, exponential and logarithmic functions will be studied. Students who are enrolled in MATH088 are encouraged to also enroll in MATH107 concurrently. Prerequisites: MATH088 or equivalent/satisfactory score on ACT/SAT or Placement Exam. This course will not count toward a major or minor in mathematics.

MATH103

Number Systems and Problem Solving for Elementary Teachers

(3,2) 4

General notions of problem solving and number theory for elementary teachers including sets, functions, numeration systems, and properties and operations of whole numbers, integers, fractions and decimals, and proportional reasoning. Prerequisite: Equivalent/satisfactory score on ACT or Placement Exam, or MATH102 with a grade of C (2.00) or better.

MATH104

Geometry and Measurement for Elementary Teachers

(3,2) 4

Basic notions of geometry for elementary teachers including constructions, congruence and similarity, motion geometry, symmetry and tessellations. Concepts of measurement, coordinate geometry, probability and data analysis. Prerequisite: Equivalent/satisfactory score on ACT, or Placement Exam, or MATH102 with a grade of C (2.00) or better.

MATH107

Building Mathematics Confidence

(1,0) 1

Students who are enrolled in MATH088 or MATH102 are strongly encouraged to enroll in this class. In this class we will discuss phobias about mathematics and build our confidence about our mathematical abilities through discussion and active problem solving without the constraints of a traditional mathematics course. This course will be a suggested co-requisite with MATH088 or MATH102. Course may not be repeated.

MATH110

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: MATH088 or equivalent score on ACT or Placement Exam.

MATH111

College Algebra

(3,0) 3

This course is a study of families of functions through formulas, tables, graphs and words, emphasizing applications in business, life and social science. The function families include linear, polynomial, rational, exponential, logarithmic and power functions. Within these families, topics include problem solving, model creation, solving equations, systems of equations and inequalities, rates of change, graphing, analysis, and interpretation. Prerequisites: Two years of high school algebra and satisfactory achievement on the mathematics placement exam or MATH102 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.

MATH112

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: MATH111 with a grade of C or better. This course will not count toward a major or minor in mathematics.

MATH131

College Trigonometry

(3,0) 3

Basic theory of trigonometric functions and inverse trigonometric functions. Applications include trigonometric equations, plane trigonometry, vectors and complex numbers. Introduction to conic sections. Study of exponential functions and their connection to trigonometry functions, logarithmic functions and applications. Prerequisites: (1) Two years of high school algebra and equivalent/satisfactory score on ACT, COMPASS test or Placement Exam, or MATH102 with a grade of C or better. (2) One half-year of high school trigonometry with a grade of C or better is strongly recommended.

MATH151

Calculus I

(4,0) 4

Limits, continuity and inverse functions. Logarithmic and exponential functions. Differentiation and applications of the derivative. L'Hopital's rule. Inverse trigonometric functions. Integration and the definite integral. Prerequisites: high school mathematics that includes two years of algebra, one year of plane geometry and one-half year of trigonometry and equivalent/satisfactory score on SAT, ACT or Placement Exam or both MATH111 and MATH131 with a grade of C or better.

MATH152

Calculus II

(4,0) 4

Applications of the definite integral. Techniques of integration and improper integrals. Infinite series. Conic sections, polar coordinates and parametric equations. Prerequisite: MATH151 with a grade of C or better.

MATH207

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. This course will not count toward a major in mathematics.

MATH215

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: MATH151 or 112 with a grade of C or better.

MATH216

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: MATH215 with a grade of C or better.

MATH251
Calculus III
(4,0) 4

Three-dimensional space, vectors, vector-valued functions, partial differentiation, multiple integration, topics in vector calculus. Prerequisite: MATH152 with a grade of C or better.

MATH261
Introduction to Numerical Methods
(3,0) 3 On Demand

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: CSCI105 or CSCI121 with a grade of C or better and MATH152 with a grade of C or better.

MATH290
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.

MATH305
Linear Algebra
(3,0) 3 Alternate Years

An introduction to matrix algebra, vector spaces and linear transformation, including applications to the natural and social sciences. Prerequisites: MATH112 or MATH151 with a grade of C or better.

MATH308
Probability and Mathematical Statistics
(3,0) 3

An introductory course in probability and mathematical statistics. Probability, probability distributions, mathematical expectation, moment generating functions and the Central Limit Theorem. Prerequisite: MATH152 with a grade of C or better.

MATH309
Applied Statistics
(4,0) 4

A continuation of MATH308 including estimation of parameters, testing hypotheses, nonparametric methods, analysis of variance, multiple regression and an introduction to statistical software packages. Prerequisite: MATH308 with a grade of C or better.

MATH310
Differential Equations

(3,0) 3

Differential equations of first order, linear differential equations of second and higher orders, including Laplace transformation. Introduction to power series methods, applications. Prerequisite: MATH152 with a grade of C or better.

MATH321

History of Mathematics

(3,0) 3

Selected topics in the development of mathematics from the time of the ancient Babylonians and Egyptians to the 20th century. Prerequisites: MATH112 or 151 with a grade of C or better, and MATH215 with a grade of C or better.

MATH325

College Geometry

(2,2) 3 Alternate Years

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: MATH215 with a grade of C or better.

MATH341

Abstract Algebra I

(3,0) 3

An introduction to congruencies, groups, subgroups, quotient groups, fundamental homomorphism theorems, Sylow theorems. Prerequisite: MATH215 with a grade of C or better.

MATH342

Abstract Algebra II

(3,0) 3 On Demand

A continuation of MATH341 including rings, integral domains, ideals, quotient rings, the natural homomorphism, fields and polynomial rings. Prerequisite: MATH341.

MATH351

Graph Theory

(3,0) 3 Alternate Years

Selected topics in graph theory, including connectivity, matchings, edge and vertex colorings, networks and tournaments. Prerequisite: MATH216 with a grade of C or better.

MATH390

Directed Study in [Discipline]

(3,0) 3

Directed study of a junior or senior level topic in mathematics. Prerequisite: Permission of instructor. This course may be repeated up to 12 credits.

MATH401

Mathematical Modeling

(3,0) 3 Alternate Years

Selected applications of mathematics in such areas as biology, economics, social science and engineering are discussed. The construction of a mathematical model used to study a real situation will be stressed, as well as interpretation of mathematical results in that context. Prerequisites: junior/senior standing, a course in computer programming, and mathematical maturity at the level of MATH305, 308 or 310 with a minimum grade of C.

MATH411

Advanced Topics in Calculus

(3,0) 3 Alternate Years

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: MATH251 and 310 with a grade of C or better.

MATH413

Introduction to Complex Analysis

(3,0) 3 On Demand

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: MATH251.

MATH421

Real Analysis

(3,0) 3 On Demand

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: MATH215 and 251 with a minimum grade of C.

MATH490

Individualized 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 nine credits. Prerequisite: Junior standing or higher and Permission of Instructor.

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MGMT280

Introduction to Management Information Systems

(3,0) 3

This course will introduce students to MIS theories including (1) Information Systems in Business and Society (information management in global society; security, privacy and ethical issues); (2) Information Technology Concepts (hardware technology, software technology, database management systems, network and internet technology); (3) Business Information Systems (automation and support systems, transaction processing systems, management information systems, decision support

and expert systems, enterprise systems such as ERP); (4) Systems Development (systems investigation and analysis, systems planning development and implementation). Students will gain hands-on computer skills in advanced spreadsheet, database, and web technologies. Prerequisites: BUSN121 and ACTG132 with a grade of C or higher.

MGMT360

Management Concepts and Applications

(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.

MGMT365

Human Resource Management

(3,0) 3

An examination of current practices and recommended techniques by which management procures, develops, utilizes and maintains an effective work force. The major areas studied are: recruitment and selection, equal employment opportunity and affirmative action programs, training and development, career planning and performance appraisal, compensation and benefits, safety and health issues, employee and labor relations, including grievance handling, contract negotiation and remaining union-free as an organization. Prerequisite: Junior standing.

MGMT371

Operations and Business Analytics

(3,0) 3

This course introduces students to (1) Operations Management (operations strategy, operations design, operations planning & control, operations execution), (2) Supply Chain Management, and (3) Quantitative Business Analysis (linear programming, project scheduling including PERT and CPM, inventory modeling, statistical process control, queuing theory, simulation, decision analysis, time-series forecasting, advanced statistical analysis). Prerequisite: BUSN211 or equivalent.

MGMT380

Principles of Leadership

(3,0) 3

This course provides the student with an understanding of the principles and behaviors situationally appropriate to inspire and influence others. Whether people work individually, in small teams, task forces, or other units at all organizational levels; effective leadership sustains profitability, productivity, and excellent service. Studying research findings, leadership practices, and skills helps the student understand how this knowledge can be applied to effectively lead others. Prerequisite: MGMT360.

MGMT451

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.

MGMT464

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: MGMT360.

MGMT469

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.

MGMT471

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: BUSN211 and MGMT360 or equivalents.

MGMT476

Employee Training and Development

(4,0) 4

This course provides the student with an understanding of how to prepare and deliver effective employee training. The course is in five parts: training and development needs analysis, program design, development, delivery, and evaluation. The principles and concepts learned are applied by preparing, delivering, and evaluating a three-hour training program. Prerequisite: Senior standing.

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MRKT281

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: ENGL110.

MRKT283

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.

MRKT379

Sports and Events Marketing

(3,0) 3

A study of the theories, concepts, impacts, and contemporary issues unique to sports and events marketing, including the marketing athletes, teams, leagues, celebrities, entertainment, and special events. Prerequisite: MRKT281 or special permission of instructor.

MRKT381

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: MRKT281.

MRKT383

Digital Marketing

(3,0) 3

A study of the impact the Internet and other digital technologies have on the marketing of goods, services and ideas. The course will examine current e-marketing environment, strategy and management issues including consumer behavior, segmentation and targeting, differentiation and positioning, product, price, distribution, communication and customer relationship management. Ethical and legal issues will also be addressed. Prerequisite: MRKT281.

MRKT384

Social Media Marketing

(3,0) 3

The course content will provide insight to social interactions, examining the various social media channels available to marketers, social marketing strategies, and track their effectiveness. Social media is heavily technology-driven, the course will cover relevant related aspects in digital marketing its relation to buying and selling of goods and services, or the transmitting of funds or data, over an electronic network. Prerequisite: Sophomore standing.

MRKT385

Services Marketing

(3,0) 3

A study of the principles and practices unique to service providers. The focus of this course is to examine how the marketing of services differs from traditional marketing principles/concepts applied to goods and the alternative strategies for service providers to improve service marketing effectiveness and customer interactions.

Prerequisite: MRKT281.

MRKT386
Mobile Marketing
(3,0) 3

The course defines mobile marketing, designs strategies, tracks ROI of mobile advertising, and instructs students in the application and design of mobile websites. The course teaches students how users engage with mobile, create a clear marketing strategy, target segment and measure mobile campaigns. Prerequisite: Sophomore standing.

MRKT387
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: MRKT281.

MRKT388
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. Prerequisite: MRKT281.

MRKT480
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: BUSN211, MRKT281 and 381.

MRKT481
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. Prerequisites: MRKT281, 381, 480, and senior status.

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MUSC112
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.

MUSC113

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.

MUSC120

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.

MUSC121

Introduction to Music II

(3,0) 3

The course expands upon the musical vocabulary and skills developed in MUSC120. Topics include C-clefs, seventh chord, non-harmonic tones, cadences, etc. Prerequisite: MUSC120.

MUSC140

Choir

(0,3) 1

Rehearsal and performance of representative literature for mixed choir in both classical and contemporary styles of choral music. May be repeated for a total of eight credits.

MUSC170

Class Piano I

(0,2) 1

Beginning piano techniques. Music reading ability helpful but not required.

MUSC171

Class Piano II

(0,2) 1

To improve proficiency and techniques gained in MUSC170. Prerequisite: MUSC170.

MUSC180

Class Guitar I

(0,2) 1

Introduction to guitar playing including knowledge of musical rudiments, left and right hand techniques and ensemble performance.

MUSC181

Class Guitar II

(0,2) 1

Course emphasizes increasing technical achievement, musicianship and the

development of individual musicality.

MUSC210

Applied Music I

(0,3) 1

Individual applied music instruction. For skilled musicians with admission at the discretion of the instructor. May be repeated to a maximum of eight credits per instrument or for voice.

MUSC220

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.

MUSC221

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.

MUSC235

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.

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NRES107

Field Biology: Fish and Wildlife Ecology and Identification

(2,3) 3

Introduction to organisms and their environmental interactions and conservation concerns with emphasis on regional game species, endangered species, and invasive species. Lab consists primarily of field experiences and specimen identification. Prerequisite: Pre or Corequisite ENGL110.

NRES199

Freshman Seminar

(1,0) 1

A partial focus for this course will be on academic skills and the transition from high school to college. Topics will include time management, use of campus resources, development of critical thinking, and strengthening study skills. At other times students will meet in discipline-based groups in conjunction with BIOL or NRES299, BIOL399 and BIOL499. These meetings will include discussion of literature relevant

to the discipline and progress reports from upper-class students engaged in scholarly projects.

NRES203

Fundamentals of Natural Resources

(3,0) 3

This course will introduce students to the history of natural resource conservation and management, career opportunities within the field of natural resources, and interaction between humans and the environment. The course will focus extensively on basic concepts in human dimensions as they apply to natural resource conservation and management. Course topics include assessing social attitudes and values, social conflicts and conflict resolution, legal and regulatory framework of natural resource management, and the role of stakeholder groups in conservation and management. Prerequisite: Pre- or Co-requisite ENGL110.

NRES230

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: CHEM108 and CHEM109 or above; NSCI103 or BIOL132.

NRES240

Natural History of the Vertebrates

(3,0) 3

A survey course covering the taxonomy, phylogeny and ecology of vertebrates with an emphasis on North American taxa. Prerequisite: NRES107 or BIOL132.

NRES250

Quantitative Biology

(3,0) 3

This course will use quantitative methods to examine biological relationships and processes. Students will explore diverse biological topics including heat and energy balance, relative growth, photosynthesis, genetic drift, and diffusion using a variety of quantitative tools. Prerequisites: BIOL131, BIOL132 and MATH111.

NRES284

Principles of Forest Conservation

(2,4) 4

An introduction to forest structure, function, and ecology. Important fundamentals of conservation biology such as the effects of disturbance, fragmentation, and biodiversity on forest ecosystems will be emphasized. Students will master identification of tree and shrub species of the Eastern Upper Peninsula and perform commonly used techniques to evaluate the forest resource. The lab portion of the course is in the field and proper dress is required. Prerequisites: BIOL132 or NSCI103.

NRES286

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. Prerequisite: MATH111.

NRES287

Conservation Biology

(3,0) 3

This course will provide a strong background in the field of conservation biology. The course will discuss patterns in, valuation of, and threats to biodiversity. The course will also examine tools and strategies for conserving biodiversity at the population and species levels and discuss the application of conservation biology in today's society. Specific topics include: (1) Principles of and issues in conservation; (2) Threats to biodiversity; (3) Methods and approaches to evaluate and mitigate threats; (4) Application of principles in the design of conservation reserves, restorations, and sustainable development. Prerequisites: BIOL131 and BIOL132.

NRES289

Aquatic Research Sampling Methods

(2,3) 3

A variety of sampling techniques are introduced as they relate to the various disciplines of aquatic science. These methods include sampling and preservation of biotic (plankton, fish, benthic invertebrates, DNA, pathogens) and abiotic (water quality, sediments, climate) data. Prerequisites: NRES107, CHEM108, CHEM109, MATH111 and Permission of Instructor.

NRES290

Independent Study in (Discipline)

(1-4,0) 1-4

Special studies and/or research in biology for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of department and college dean. Prerequisites: Students must have an overall gpa of at least 2.50, 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 Natural Science. Also listed as BIOL290.

NRES299

Sophomore Seminar

(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BIOL/NRES199, BIOL399 and BIOL499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Sophomores will assist with ongoing projects and will be guided by faculty and juniors enrolled in BIOL399 to conduct a comprehensive, annotated literature search in their area of interest. Prerequisite: BIOL199 or NRES199 and ENGL111.

NRES304

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.

NRES310
Ichthyology
(2,3) 3

Study of the anatomy, physiology, behavior, taxonomy and natural history of fishes, with emphasis on freshwater species, particularly those in the Great Lakes region. Prerequisite: BIOL132.

NRES311
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. Prerequisite: BIOL243 or BIOL330.

NRES312
Ornithology
(2,4) 3

A study of the biology and taxonomy of birds. Labs will focus upon bird anatomy and bird recognition using video tapes and specimens, Prerequisite: BIOL132.

NRES333
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: NRES310.

NRES339
Wildlife Ecology
(3,0) 3

A quantitative analysis of the ecology and management of wildlife populations. Theories of population dynamics and distribution are presented. Community interactions including competition, predation, and herbivory, are explored in detail. Prerequisites: NRES250, BIOL280 and BIOL337.

NRES345
Limnology
(2,4) 4

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: NRES250 and CHEM115.

NRES372

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: BIOL280 and NRES310.

NRES389

Internship in (Discipline)

(3-4,0) 3-4

A variable credit practicum course in which the students will perform research and/or gain work experience under the direction of a faculty mentor and a qualified supervisor. Students are expected to spend a minimum of 45 hours in an approved work setting for each credit earned. The course may be repeated once for a maximum of eight credits. Student interns will be required to write weekly updates or journal entries to be submitted to their LSSU faculty mentor for evaluation of what the student has learned. Prerequisites: 2.50 gpa in major and permission of faculty mentor or department chair.

NRES398

Planning an Experiential Learning Project

(1,0) 1

A weekly seminar class for students planning a major experiential learning project, such as a capstone academic service learning project or internship. Students will work with the course instructor to define the project objectives, outline the tasks, plan the work with the host agency, plan the project assessment techniques and budget, and design the academic evaluation. The outcome of class will be a proposal for the project. Prerequisite: NRES/BIOL299.

NRES399

Research Project Design

(1,0) 1

This seminar style course is designed to help students develop their senior thesis project. Topics include literature analysis, scientific writing, and oral presentation of scientific information. In addition, all students will work with their senior thesis mentor, finalize a topic for their senior thesis project and present their proposed study in a seminar format. Students in NRES399 are required to attend the poster session and senior thesis oral presentations. Prerequisites: NRES199 or USEM101 and NRES299.

NRES432

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: BIOL280, NRES333 and NRES345.

NRES439

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: NRES311 or NRES312 and NRES339.

NRES450

Apprenticeship in (Discipline)

(0,3) 1

Students will assist in classroom laboratories or operation of university facilities (e.g., CFRE Fish Hatchery and Mesocosm Room), under daily direction of faculty or staff and supervision of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the supervising faculty member.

NRES470

Restoration Ecology

(3,0) 3

This course will provide a broad overview of restoration of both terrestrial and aquatic ecosystems, including prairies, wetlands, lakes, and streams. Through lectures, field trips, and case study discussions, students will be introduced to ecological principles and techniques used to restore and rehabilitate ecosystems. Students also will be involved in identifying, designing, and evaluating local restoration projects in conjunction with local resource agencies. Prerequisite: BIOL337.

NRES475

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: BIOL337 and Junior Standing.

NRES495

Senior Project

(0,6) 2

A practicum under the guidance of a faculty member. The student will conduct a scholarly project based on the proposal submitted by the student in BIOL399 (or an appropriate substitute). Prerequisite: BIOL399.

NRES497

Experiential Learning Project

3

A full semester/summer practicum experience. Students will develop work goals, responsibilities, and outcomes with their agency supervisor and faculty mentor. Students will prepare formal communication components (workshop or oral presentation and a poster). The experience should be 12 weeks at 40 hours per week. Prerequisite: NRES398.

NRES499

Senior Capstone

(1,0) 1

Senior Capstone is required of all seniors majoring in conservation biology, environmental science, and fisheries and wildlife. Students will write a scholarly paper detailing their individual research or experiential learning project. An oral seminar and a poster presentation are also required components of this course. Students must attend the presentations of the other students enrolled in this course. Prerequisites: NRES495 or NRES497 or EVRN495.

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NSCI101

Great Lakes Region: Chemistry, Physics and other Laws of Nature

(3,2) 4

A survey of basic physical science principles emphasizing their applications in daily life. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

NSCI102

Great Lakes Region: Geology and Resources

(3,2) 4

A survey course to acquaint students with the major concepts and phenomena inherent in a study of geology with a focus and application to the Great Lakes region. It will also provide sufficient background for a better understanding of human relationships to the physical environment and resources with an emphasis on implications for the Great Lakes region. Prerequisite: None.

NSCI103

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.

NSCI104

Environmental Science Laboratory

(0,2) 1

Laboratory component of environmental science. Corequisite: NSCI103.

NSCI105

Physical Geography: Earth, Sun and Weather

(3,1) 3

Study of the physical properties of the earth's surface as they relate to weather and climate. Credit for both GEOG108 and NSCI105 not permitted.

NSCI107

Physical Geography: Landforms and Soils

(3,1) 3

Study of the physical properties of the earth's surface as they relate to landforms and soils. Credit for both GEOG106 and NSCI107 not permitted.

NSCI108

Science for Citizens

(3,2) 4

This course picks up where the Next Generation Science Standards (NGSS) for High School end. After a review of materials from NGSS, students will then delve deeper into major scientific topics to examine phenomena through traditional course work and laboratory exercises. This course is designed to provide a background in science that will allow individuals to continue to learn throughout life, evaluate general scientific information to make more informed decisions as a citizen, and promote participation in citizen science. Topics are introduced and then supported through review of current issues as popular news articles and books, social media trends, and proposed legislation. Students will read provided information and then evaluate the merits of scientific aspects based upon their knowledge of the subject matter gained from discussion and laboratory exercises. Prerequisite: MATH088 and ENGL110.

NSCI110

Introduction to Forensics

(3,2) 4

An applied introductory chemistry course introduces the world of forensics focusing on the aspects of chemistry used during an investigation. This unique general education class will incorporate a criminal justice and fire science perspective while providing an introduction to chemical principles. Attention will be given to developing critical thinking skills, understanding the scientific process and to making scientifically informed decisions about every day events. Pre- or co-requisite of MATH102 (or higher) or equivalent/satisfactory score on ACT, SAT or Placement Exam.

NSCI116

Introduction to Oceanography

(3,2) 4

A survey of the features, processes and evolution of Earth's ocean basins. The course will examine geological, physical, chemical and ecological aspects of oceanography with an emphasis on their interrelationships and their impact on humanity.

NSCI119

Descriptive Astronomy

(3,2) 4

Introductory course with a balanced, comprehensive account of contemporary astronomy with emphasis placed on the broad principles of astronomy rather than on a chronological or historical framework. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

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NURS211

Introduction to Professional Nursing

(3,0) 3

This course introduces the student to a theoretical foundation for professional nursing practice. It focuses on nursing's historical origin, and its development throughout the years to present. Concepts discussed include nursing and related theories, the nursing process, legal/ethical issues and other topics relevant to the practice of professional nursing. Prerequisite: permission of dean or instructor only.

NURS212

Health Appraisal

(2,6) 4

This course serves as an introduction to the nursing assessment and analysis component of the nursing process as a method of determining a well individual's health potential and status across the lifespan. Emphasis is on obtaining and documenting a health history, performing a nursing assessment and beginning to formulate a nursing diagnosis. Prerequisite: permission of dean or instructor only.

NURS213

Fundamentals of Nursing

(3,9) 6

This course provides a theoretical and clinical foundation upon which science is applied to clients experiencing common health stressors. Emphasis is placed upon collecting relevant data, formulating nursing diagnosis based on the data, implementation of both appropriate nursing interventions and related psychomotor nursing skills. Responsibilities as a health team member who displays caring behaviors and as a self-directed learner are also considered. Prerequisites: NURS211, NURS212. Pre- or corequisite: HLTH208, HLTH209, HLTH232, and BIOL223 or BIOL204.

NURS290

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.

NURS325

Nursing of Childbearing Families

(3,6) 5

Theoretical and clinical foundation for application of the nursing process in caring for childbearing families. Focus on: norms and complications of the childbirth experience with application of strategies to promote health and prevent complications related to pregnancy and childbirth. Prerequisite: NURS327. Corequisite: NURS326. Pre-or Corequisite: NURS/HLTH328.

NURS326

Nursing of Children and Families

(3,6) 5

Theoretical and clinical foundation for application of nursing process in caring for children and their families. Emphasis: health promotion, maintenance and restoration with application of principles and concepts related to growth and development, family theory, environmental influences on health and the nursing process. Prerequisite: NURS327; Corequisite: NURS325. Pre- or Corequisite: NURS/HLTH328.

NURS327

Adult Nursing I

(4,12) 8

Combined class and clinical experiences that apply the concepts of nursing and related theories to the care of the adult client with common health alterations in each of the basic human need areas. Nursing clinical experiences are in primary, secondary, and tertiary care settings for adult clients. Prerequisites: NURS213, HLTH209 and BIOL223 or BIOL204.

NURS328

Multicultural Approaches to Health Care

(3,0) 3

This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations, assessment techniques and alternative/complementary health practices. Prerequisite: SOCY101. Also listed as HLTH328.

NURS352

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. Prerequisites: PSYC155 and junior level status. Also listed as HLTH352.

NURS360

Professional Nursing Concepts

(4,0) 4

This four-credit course is the transitional course into professional nursing for the practicing registered nurse. Course emphasis: concepts of professional nursing, nursing and other related theories, health promotion, using research in nursing practice, impact of technology on profession, and economics related to nursing care. Includes: the history of nursing, ethics, culture, and critical thinking are interwoven in the exploration of concepts. Prerequisite: Permission of dean or instructor only. For Post Licensure majors (RN-BSN) only.

NURS363

Individual/Family Assessment

(3,6) 5 5

This course is directed toward the application of theoretical Nursing concepts related to assessment of the individual and family health, development, structure and dynamics through the lifespan. Emphasis is on the principles of factors influencing family health care, comprehensive health history taking, physical assessment skills, and analysis of data to determine an individual's or family's health status. For Post Licensure majors (RN-BSN) only. Pre- or corequisite: NURS360.

NURS365

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. For Post Licensure majors (RN-BSN) only. Pre- or corequisites: SOCY101 and NURS360.

NURS431

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: HLTH328, NURS325, NURS327, NURS326. Corequisite: NURS435.

NURS432

Nursing of Populations

(3,6) 5

This is a theory and clinical course applying the nursing process to populations. Content includes application of public health nursing principles, levels of prevention, epidemiology and health education. Expands the role of the nurse as a teacher, collaborator and advocate. Examines the effect of health care delivery trends and issues on the health of populations. Prerequisites: For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326. Post-licensure Majors (RN-BSN): NURS363 and NURS365.

NURS433

Community Mental Health Nursing

(3,6) 5

Theoretical and clinical foundation in mental health nursing. Emphasis is on the use of the therapeutic relationship and communication skills to help clients cope with stressors of life experiences. Nursing, human needs theory, stress adaptation theory are used to help the client achieve optimum level of mental health. Clinical experiences are provided in both the community and in the acute care settings. Prerequisites: HLTH328, NURS325, NURS326, NURS327.

NURS434

Nursing Research

(3,0) 3

This course develops appraisal skills of nursing and related research. It will enable students to think critically and ethically about providing the best possible care to clients based on evidence. Assignments and class discussion emphasize application of current research to a variety of dimensions including human beings, health, nursing and environment. Co-requisite: NURS327, MATH207 or PSYC210.

NURS435

Management in Nursing

(4,0) 4

Analysis of the leadership and management roles in professional nursing; focus is leadership/management theories basic to the planning, organizing, directing and controlling or nursing services in health care settings. Includes concepts of nursing model integration in management, communications, decision making and conflict

resolution, resource management, legal and ethical responsibilities, employee relations, health care system design, systems appraisal, and case management. Students will formulate a personal nursing management/leadership philosophy. For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326, Corequisite NURS431.

NURS436

Contemporary Issues in Nursing

(2,0) 2

Course analyzes contemporary and future issues involving the professional nurse. The course further explores role socialization from nursing student to BSN-prepared nurse. Course reviews the legal responsibilities and professional regulation of nursing practice. Selected social, ethical, political, economic and legal issues will be examined. Prerequisite: For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326. For Post-licensure Majors (RN-BSN): NURS360.

NURS437

Nursing Leadership and Issues

(2,3)3 3

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 student planning his/her experiences with the faculty member and preceptor. Integration of ethics, research, change, caring, advocacy, and approaches to ensure quality care in nursing practice are expected.

NURS490

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.

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OFFC112

Keyboard Skillbuilding

(0,2) 1

Improvement of keyboarding speed and accuracy (both alphabetic and numeric), using developmental programs and keyboarding drills. May be repeated once.

OFFC119

Computerized Accounting Procedures

(4,0) 4

Accounting experiences common to small business or professional offices; development of basic principles underlying accounting procedures; techniques and records used in analyzing, classifying, recording and summarizing transactions; accounting procedures applied to a computer simulation for small businesses. May not be taken for credit following successful completion of ACTG132.

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PHIL204

Introduction to Philosophy

(3,0) 3

A study of philosophy with the aims to become wiser and live better. Through a host of immersive assignments, such as "live like a philosopher", students will experience first-hand the philosophies that just might rescue them from the traps of distraction, indecision, and disconnect. A large part of this course will be devoted to helping students articulate and defend their own visions for what makes a meaningful life. The course will impart wise and practical guidance from some of the greatest representatives of the philosophical tradition.

PHIL205

Logic

(3,0) 3

An introductory course in logic; study of the role of logical methods of the rational approach to knowledge; consideration of such concepts as definition, implication, inference, syllogism, deduction. Prerequisite: ENGL111.

PHIL210

Existentialism

(3,0) 3

Survey of existentialist literature from a variety of authors, periods and genres: Dostoevsky, Kierkegaard, Nietzsche, Heidegger, Jaspers, Sartre, Camus, de Beauvoir, Rilke, and others. Texts include philosophical prose, biblical exegesis, fiction, drama and poetry, containing many of the definitive expressions of such current literary, philosophical and artistic themes as the varieties and sources of alienation, the creation and definition of the self, the nature and rationality of religious faith, moral responses to insoluble dilemmas, and potential individual responses to an absurd and inhuman world. Prerequisite: ENGL111.

PHIL215

Ethical Theory and Practice

(3,0) 3

Certain actions seem to be demanded by morality and certain actions seem to be prohibited by morality. In addition, there are many actions in which we have difficulty extending praise or blame. The study of Ethical Theory constitutes the study of philosophers' evaluations of behavior, character, and even the term of such evaluation (e.g., 'goodness,' 'value,' 'right,' and 'obligation'). this course will examine the ethical theories of philosophers such as Plato, Aristotle, Kant, Bentham, and Mill as well as contemporary applications of ethical theories. Topics such as terrorism, ethics in the professions, the environment, and religiously motivated behavior are timely and appropriate topics for evaluating the connections between moral reasoning and our modes of living. Prerequisite: ENGL111.

PHIL220

Biomedical Ethics

(3,0) 3

Survey of contemporary issues in medical and research ethics. Topics could include abortion, euthanasia, genetic testing, reproductive technologies, doctor-patient relationships, conflicting imperatives on confidentiality and disclosure, social consequences or drug development and widespread use, concepts of health and

disease, gender and medical practice, the distribution of medical resources, and the medicalization of various forms of social deviance. Prerequisite: ENGL111.

PHIL250

Philosophy of Religion

(3,0) 3

This course examines the rational foundations for believing in and worshiping a Deity. In particular we will focus our inquiry on the God of Judaism, Christianity, and Islam who is thought to possess the qualities of omniscience, omnipotence, and beneficence. (We will, however, exposit the deities Hinduism and Buddhism to put our study in context.) Can we prove that God exists? What might we owe God? How can we explain the existence of evil even though God is thought to be wholly good? What place does religion have in a pluralistic society? The history of Western Philosophy is in large part unified by the common pursuit of such questions. Not only are the questions themselves fascinating and perplexing, but also, they have been answered in inventive ways by many extraordinary thinkers. The Philosophy of Religion is, therefore, a continuing search that has as much to do with human ingenuity as it does about God. Prerequisite: ENGL111.

PHIL302

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: ENGL111.

PHIL305

Modern and Contemporary Philosophy

(3,0) 3

Students will become familiar with the arguments and ideas that have sought to describe and, in many cases, to shape the consciousness of the modern and postmodern epochs. From Descartes to Kant, modern philosophy experimented with new ways to understand existence, identity, causality, and God. From Russell to Williams, contemporary philosophers grappled with new ways to understand logic, ethics, gender, and subjective experience. Students will learn to make connections between their own ways of experiencing the world and the sometimes subtle ways that philosophers since Descartes have influenced their understanding of their experiences. Prerequisite: ENGL111.

PHIL490

Directed Study in Philosophy

(1-4) 1-4

A study of philosophically engaging topic, chosen by instructor and student. Essays and tutorial session required. Prerequisites: At least six credits of philosophy courses, evidence that the student is capable of carrying out independent study, and approval of instructor. This course may be repeated for up to six credits, or three times, whichever occurs first.

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PHYS221

Principles of Physics I

(3,2) 4

General principles of rigid body mechanics (kinematics, forces, laws of motion, energy, momentum, rotation) and fluid mechanics. Prerequisites: Two years of high school algebra and one-half year of high school trigonometry with a math ACT of 28 or higher, New SAT Section is 660 or higher, New SAT Test is 33 or higher, or Old SAT Section is 640 or higher; or MATH111.

PHYS222

Principles of Physics II

(3,2) 4

Thermodynamics, vibrations and waves, electricity and magnetism, light, optics, relativity and modern physics. Prerequisite: PHYS221 with a grade of C or better.

PHYS224

Topics in Physics for Electrical Technology

(3,2) 4

Vibrations and waves, optics, relativity and modern physics (identical to PHYS222). Electricity and magnetism topics of particular relevance to electronic engineering technology. Prerequisites: PHYS221 with a grade of C or better, sophomore standing in EET course work, and MATH140 (which may be taken concurrently).

PHYS231

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: MATH151.

PHYS232

Applied Physics for Engineers and Scientists II

(3,2) 4

Continuation of PHYS231. Introduction to thermal physics, electricity, magnetism, electromagnetic waves, and optics. Prerequisite: PHYS231 with a grade of C or better.

PHYS290

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 chair. This course may be repeated for a maximum of eight credits. Prerequisites: Sophomore standing or higher and permission of instructor.

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PNUR102

Drugs and Dosages

(2,3) 3

This course introduces the practical nursing student to dosage calculations and medication administration. Calculations for conversion between systems of measurement are covered. The seven rights of medication administration are emphasized. Categories of drugs, their actions, side effects and nursing implications are covered. Prerequisite: MATH087 or equivalent placement score.

PNUR104

Introduction to Practical Nursing

(2,0) 2

Introduction to Practical Nursing provides a theoretical foundation for practicing nursing care of adults within a variety of health care settings. Concepts such as practical nursing philosophy and conceptual framework, history of nursing, nursing's Code of Ethics, the role of nursing in the health care system with emphasis on the practical nurse, the nursing process, therapeutic communication, culture, and critical thinking are explored. Prerequisites: Permission of Chair of Nursing or Instructor only.

PNUR107

Understanding Clinical Nutrition Lab for Practical Nurses

(0,3) 1

This lab course is focused on the knowledge and skill practical nurses need to support the nutritional needs of people across the lifespan with a special emphasis on individuals with limited ability to meet their own nutritional needs. Strategies of providing nutrition associated with self care deficits are covered, including effective oral feeding techniques, use of thickeners or texture to enhance swallowing, tube feeding, and the principles of enteral feeding, elemental diets, IV therapy and hyperalimentation are presented. Prerequisites: BIOL105 or BIOL122 passed with a C or better; HLTH208 passed with a C or better or corequisite of HLTH208.

PNUR113

Fundamentals of Practical Nursing

(4,9) 7

Students will learn the basic skills necessary to provide safe, competent care of the acute and chronically ill residents in Long Term Care/Nursing Home settings. Focus will be on the care of the elderly. Through lecture, lab simulations, and actual clinical experiences the student will learn basic nursing skills; infection control; safety/emergency procedures; nursing interventions and apply communication/interpersonal skills to promote resident's independence; to respect residents' rights; and to recognize abnormal changes in the resident. Prerequisites: Co-requisite BIOL105 or Prerequisite BIOL122 with a grade of C or better.

PNUR201

Medical Surgical Practical Nursing

(6,12) 10

This course focuses on nursing care of the adult client experiencing common stressors affecting health. Emphasis is placed on the administration of medications, collection and communication of relevant data, and implementation of basic nursing interventions. Prerequisites: PNUR102, PNUR104, PNUR113, all with a grade of C or better. Co-requisites: HLTH208, PNUR107.

PNUR202

Legal/Ethical Issues in Practical Nursing

(2,0) 2

This course focuses on the ethical and legal responsibilities and issues related to the safe practice of practical nursing. The role of the practical nurse and within the health care community is emphasized. Licensure responsibilities, career advancement and lifelong learning needs are incorporated. Prerequisite: PNUR201 with a grade of C or better.

PNUR205

Maternal/Child Practical Nursing

(3,6) 5

This course explores the family as the client beginning with the reproductive cycle, conception, fetal development, labor, birth and the care of the postpartum woman and newborn. At risk pregnancies and complications are identified. The course continues to address normal growth and development, immunizations, health risk factors, well-defined health problems common to children and their response to illness. Prerequisite: PNUR107, PNUR201, HLTH208, all with a grade of C or better.

PNUR206

Ambulatory Care Practical Nursing

(3,6) 5

The efficiency of a health care agency, and the quality of health care provided, depends in large part on the staff members who supplement and support the role of the provider for provision of quality patient care services. This course stresses strong interprofessional communication skills, organizational abilities, computer knowledge, and excellent human relationship skills in the ambulatory setting across the lifespan. Prerequisite: PNUR107, PNUR201, HLTH208, all with a C or better.

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POLI101

Freshman Seminar

(2,0) 2

The focus of this course will be on academic skills, orientation to Lake Superior State University and Sault Ste. Marie, and introduction to the field of Political Science.

POLI110

Introduction to American Government and Politics

(4,0) 4

An introductory survey of American national government and politics.

POLI120

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.

POLI130

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.

POLI160

Introduction to Canadian Government and Politics

(3,0) 3

An introductory survey of Canadian government and politics.

POLI201

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.

POLI202

Sophomore Seminar on Political Research and Statistics

(3,0) 3

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. Prerequisite: MATH088 or equivalent/satisfactory score on ACT, SAT, or Placement Exam.

POLI222

Introduction to the Legal Profession

(3,0) 3

Students will become familiar with how the law functions, how the legal profession has evolved, how to prepare for and apply to law school, how law schools differ from college (including development of various methods and techniques to study the law). In addition, students will become aware of the legal profession and its demands, opportunities, options and trends. Prerequisites: POLI110, sophomore standing and/or permission of instructor. Also listed as LAWS222.

POLI234

Women and Politics Around the World

(4,0) 4

This course will examine a broad range of issues involving gender and politics: the political participation of women, the history of women's movements, voting differences, political divisions among women, and the present political status of women in the United States and globally.

POLI241

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.

POLI245

United Nations and World Politics

(3,0) 3

This course provides a general overview of the United Nations and how world politics both influences, and is influenced by, the actions of the United Nations. Prerequisite: POLI241 or permission of instructor.

POLI246

Model United Nations

(0,2) 1

This course is the experiential learning component of POLI245 United Nations and World Politics and requires participation in the Model United Nations program, in which students represent specific countries and become familiar with their background and politics. Prerequisite: Permission of instructor. Corequisite: POLI245, the first time. This course may be repeated for credit for a maximum of 3 credits without retaking POLI245.

POLI290

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.

POLI301

Policy Analysis and Evaluation

(3,0) 3

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.

POLI303

Junior Seminar

(4,0) 4

A junior seminar required of all political science majors. The course examines the history of political science, careers in political science, and reviews contemporary approaches and recent research. Students prepare a research proposal to be carried out in POLI404 and POLI405. Prerequisites: Political science major and junior standing.

POLI325

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: POLI110 and junior standing.

POLI331

Comparative Politics of Europe

(3,0) 3

An examination of institutions and politics in major European states, such as Great Britain, France, Germany and Russia, and the European Union. Prerequisite: POLI110 or POLI160.

POLI334

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.

POLI342

International Environmental Policy

(3,0) 3

This course is intended to familiarize students with the efforts of the international community to establish policy guidelines designed to begin the regulation of the global environment. The course covers basic concepts to international relations necessary to understand the general workings of the nation-state system. It then begins an exploration of significant historical international environmental issues and the ways in which these have been dealt with by the international community. The course further challenges students by investigating various alternative solutions for solving the myriad of global environmental problems faced by all of humankind in the new century.

POLI351

Political Philosophy

(4,0) 4

An examination of the seminal authors and theories of political philosophy. Major philosophers include Plato, Aristotle, Cicero, Augustine, Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Burke, Mill, Hegel, Marx, Wollstonecraft, Arendt and Rawls. Major ideologies include conservatism, liberalism, socialism, communism, anarchism, fascism, and feminism. Prerequisites: POLI110 and junior or senior standing; or permission of instructor.

POLI367

Congress and the Presidency

(4,0) 4

Examines the legislative and executive branches of government as parts of the policy-making process. Prerequisite: POLI110.

POLI401

Principles of Public Administration

(3,0) 3

Examines major issues and methods in public administration. Analysis of specific public policy issues. Prerequisite: Advanced standing.

POLI404

Senior Seminar I

(2,0) 2

Implementation of project proposal begun in POLI303. Student will make weekly reports on progress of methodology and data collection to faculty and class. Prerequisite: POLI303.

POLI405

Senior Seminar II

(2,0) 2

Completion of the project begun in POLI404. Students will make oral presentations of their project results at the end of the course to other students, faculty and invited guests. Prerequisite: POLI404.

POLI411

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: POLI110.

POLI413

The International Legal Order

(4,0) 4

The primary objective of this course is to explore the reasons for the emergence of the international legal order as a crucial constraint on the freedom of action of national governments; that is, to understand the impact of the international legal order on contemporary international relations. It also seeks to introduce the substance of international law in selected issue-areas, and to provide an overview of the nature of international legal reasoning. Throughout the course, we shall emphasize the interaction of law and politics, and of national and transnational legal processes. Prerequisite: POLI110.

POLI420

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: POLI110 or 160, and junior standing, as well as either ECON201 or 202. POLI241 recommended but not required.

POLI463

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.

POLI467

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: POLI120 or its equivalent.

POLI490

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.

POLI499

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.

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PSYC101

Introduction to Psychological Science

(3,0) 3

A general introduction to the systematic study of behavior and mental processes in humans and animals.

PSYC107

Positive Psychology

(3,0) 3

An overview of Positive Psychology - a field of psychology that applies behavioral science methods to improving mental health, life satisfaction and biosychosocial well being. Prerequisites: Admission to the Honors Program and Permission of the Director of the Honors Program.

PSYC155

Lifespan Development

(3,0) 3

Human psychological development from birth to death. This course covers social, emotional and intellectual development across the lifespan.

PSYC199

Freshman Seminar in Behavioral Science

(2,0) 2

An introduction to the university including academic policies and procedures, campus resources, and requirements for the major. Instruction in time management, study

skills, and test-taking skills will be provided. Careers and speciality areas within behavioral science will be explored. An introduction to behavioral science epistemology including the process of knowledge generation and comparison of behavioral science with other core disciplines such as the physical sciences and humanities with respect to foundations, scope and validity of knowledge. An examination of ethical theories and professional codes relevant to the behavioral sciences.

PSYC201

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.

PSYC210

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. MATH207 may be used in place of PSYC210 to meet the psychology major and minor requirements. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

PSYC212

Experimental Psychology

(3,2) 4

An examination of the basic research methods employed in the social sciences with emphasis on the experiment. Topics: Epistemology, laboratory experiments, field experiments, survey construction, correlational research. Students will each participate as a subject and an experimenter, collect data, analyze data, and write a laboratory report according to the editorial style of the American Psychological Association. Laboratory assignments require use of computer applications for experimental purposes, including running experiments and collecting data, analyzing results, creation of appropriate figures, and communication of results in text and oral presentations with slides. Prerequisites: PSYC101 and either PSYC210 or MATH207.

PSYC217

Social Psychology

(3,0) 3

Topics include attitude formation and change, interpersonal attraction, aggression, altruism, conformity and environmental psychology.

PSYC240

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.

PSYC259**Abnormal Psychology****(3,0) 3**

This course is a systematic investigation of the identification, dynamics and treatment of deviant and maladaptive behavior.

PSYC265**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: PSYC101, 155 or EDUC150.

PSYC291**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: PSYC201.

PSYC301**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: PSYC155 or 265.

PSYC305**Psychology Research Practicum****(0,3) 3**

Research in psychology under the direct supervision of individual faculty members. Recommended for students considering graduate school. Prerequisite: Minimum grade of C in PSYC210 and PSYC212, AND permission of instructor. May be repeated once for a max of 6 credits.

PSYC306**Applied Psychology Practicum****(0,3) 3**

Students are provided practical experience in the use of psychological theory and research in an applied setting. Prerequisite: SOWK250 (minimum 3 credits), a minimum grade of B in PSYC201 AND permission of instructor. May be repeated for a max of 6 credits.

PSYC311**Learning and Motivation****(3,3) 4**

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. The laboratory will provide undergraduate research experiences

that are closely related to the lecture content using live animal behavior experiments and/or computer simulations, data collections, analysis, and reporting of results in APA style. Prerequisite: PSYC212.

PSYC357
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.

PSYC385
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.

PSYC391
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: PSYC101 and junior standing.

PSYC396
Tests and Measurements
(3,0) 3

This course has two parts. Part one covers measurement theory, the properties of the normal curve, reliability, validity and measurement statistics. Part two reviews major tests used by researchers, educators, clinicians, counselors, addictions counselors and industrial psychologists. Prerequisite: SOCY302 or PSYC210 or MATH207 or equivalent.

PSYC399
Junior Seminar in Psychological Science
(3,0) 3

Students develop a senior research topic through the review of scholarly literature and weekly meetings with psychology faculty and students engaged in senior research under the supervision of that faculty member. Key elements of the research process will be strengthened including experimental design, statistical analysis, and scientific communications. Different career paths in psychology will be explored along with guidance in pursuing graduate school. At the conclusion of this course, students will obtain approval with the faculty member who will serve as their senior research project advisor and declare which psychology track they will complete for their degree. Prerequisites: Minimum grade of C in PSYC210 and PSYC212.

PSYC456
History and Systems of Psychology
(3,0) 3

An examination of persons, events, theories, schools and systems that influenced

and define contemporary psychology. Prerequisite: PSYC311.

PSYC457

Cognition

(3,3) 4

A survey of recent findings on cognition in humans. Topics include learning, memory, problem solving, language and complex perceptual processes. The laboratory will provide undergraduate research experiences that are closely related to the lecture content consisting of experiments and/or computer simulations, data collection, analysis, and reporting of results in APA style. Prerequisite: PSYC212 and Junior Standing.

PSYC459

Behavioral Neuroscience

(3,3) 4

This course is an introduction to the neurophysiological structures of the brain and their functions as regulators of animal and human behavior. Experiential learning activities related to the lecture content consisting of experimental techniques, computer simulations, data collection, analysis, and reporting of results in APA style are included. Prerequisite: PSYC212 and Junior Standing.

PSYC490

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.

PSYC494

Senior Research Practicum I

(0,2) 2

A practicum under the guidance of a faculty mentor. The student will complete the senior research project proposal and secure approval from the appropriate ethics board/committee. Prerequisite: PSYC399 with a B- or better grade. Co-requisite PSYC499 AND permission of instructor.

PSYC495

Senior Research Practicum II

(0,3) 3

A practicum under the guidance of a faculty mentor. The student will conduct an empirical research project based on the proposal submitted by the student in PSYC494. Prerequisite: PSYC494, PSYC499 and permission of instructor.

PSYC498

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: PSYC212, PSYC311 and either

PSYC210 or MATH207.

PSYC499

Senior Seminar in Psychological Science

(1,0) 1

Issues in the development and implementation of an empirical research project, including design, statistical analyses, ethical review, and modes of presentation. Prerequisite: PCYC399 with a B- or better grade. Co-requisite: PYSC494 AND permission of instructor.

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READ091

Preparation for College Reading

(3,0) 3

Introduces reading strategies and study skills necessary for college success. Through integration of acquired knowledge and reading practice, students will develop strategies for vocabulary expansion, comprehension, critical thinking, and increase reading rate. Students must earn a minimum grade of C to pass the course. Credit received in this course does not count toward graduation. Prerequisites: none.

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RECA103

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.

RECA105

Bowling

(0,2) 1

This course will emphasize delivery, scoring etiquette, strategies for converting spares, spot vs. pin bowling, and learning about handicapping. The course will involve theory as well as practical experience.

RECA106

Backpacking

(0,2) 1

Introduction to equipment, safety precautions, environmental concerns and skills needed to successfully backpack. Class will experience a weekend backpacking trip.

RECA107

Canoe Techniques

(0,2) 1

This course will introduce the student to the basic strokes and canoe safety associated with flat water canoeing.

RECA109
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.

RECA110
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.

RECA114
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.

RECA115
Tai Chi
(0,2) 1

Tai Chi is a soft martial art that promotes a long life and good health while improving range of motion, balance, centeredness, and a quiet mind. The Tai Chi 24 Forms Set is the most practiced style throughout the world and will be taught in this class along with utilizing Chi Kung for warm up and cool down exercises.

RECA116
Kickboxing
(0,2) 1

Kickboxing combines martial arts techniques with cardio conditioning as a high energy, total body workout. Course may be repeated twice for credit.

RECA119
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.

RECA120
Downhill Skiing and Snowboarding
(0,2) 1

The students will be provided with an opportunity to learn the basic fundamentals of downhill skiing and snowboarding and to gain sufficient knowledge of the sport so they may continue to enjoy and improve for the rest of their lives.

RECA125

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.

RECA127

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.

RECA129

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.

RECA130

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.

RECA150

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.

RECA151

Jogging and Walking for Fitness

(0,2) 1

Introduction to jogging and walking as means of developing physical and mental fitness. Development of an activity ideal for lifetime leisure involvement.

RECA153

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.

RECA154

Yoga

(0,2) 1

This course will cover the history, theory principles and benefits contraindications and methods of yoga as well as the application of yoga asanas, breathing techniques and relaxation method.

RECA173

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.

RECA174

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.

RECA175

Step Aerobics

(0,2) 1

A step workout is a high-intensity, low-impact aerobic workout for all fitness levels. The principle is to step up and down on a platform while simultaneously performing upper-body exercises. The program will work every major muscle group in the lower body, while training the upper body.

RECA180

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.

RECA190

Aquatic Fitness

(0,2) 1

This course will introduce students to developing cardiovascular fitness, muscular strength and muscular endurance through aquatic activities as an alternative to weight bearing forms of exercise. Water related exercises and activities will be utilized to improve physical fitness. Individuals of all fitness levels will enjoy getting

fit in the water.

RECA194

Scuba

(0,2) 1

This course is designed to introduce the student to the appropriate and safe use of self-contained underwater breathing apparatus.

RECA195

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.

RECA210

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, RECA211. Prerequisite: Red Cross intermediate swimming certificate or equivalent skills.

RECA211

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.

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RECS101

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.

RECS212

Instructional Methods in Adapted Aquatics

(1,2) 2 Alternate Years

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.

RECS220

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: RECS101 and 105.

RECS262

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: RECS105.

RECS280

Readiness in Games, Activities and Sports

(3,0) 3 Alternate Years

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.

RECS295

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

RECS360

Facilitation and Interpretation Techniques

(2,2) 3

This course is designed to serve recreation students who are interested in facilitating outdoor or adventure based programs, and/or become interpreters in an outdoor or parks environment. The course will expose the student to a wide variety of facilitation/interpretation methodologies. The student will be involved in both learning and practicing these techniques. Examples of these techniques would include such things as utilization of the metaphor, and Haiku. This class will also travel to different outdoor facilities, such as outdoor education centers and state historical sites. This will enable the students to facilitate experiences in an environment unavailable at LSSU (example, a high ropes course) and to interface with individuals who provide facilitation and interpretation as a part of their professional responsibilities. Prerequisites: RECS105, RECS262.

RECS362

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: RECS101 and RECS262 or NSCI103 and EVRN131.

RECS365

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: RECS262.

RECS367

National Parks, National Monuments and National Culture

(3,0) 3 Alternate years

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.

RECS390

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.

RECS397

Recreation Studies Junior Research Seminar

(1,0) 1

Introduces the concepts, purpose, methods and function of scholarly research and scientific inquiry. Prerequisites: junior standing, and majoring in recreation management or parks and recreation.

RECS435

Research in Recreation and Leisure Sciences

(3,0) 3

This course will serve as a culminating educational component for the student majoring in therapeutic recreation and recreation management. The course will focus in part on current problems and issues in therapeutic recreation and will also have a major emphasis on developing an original research project. Prerequisites: RECS397 and MATH207, or PSYC210 or comparable statistics course.

RECS437

Recreation Studies Senior Research Seminar

(1,0) 1

The focus of this course is to provide instruction and experience relative to data analysis and presentation methodologies affiliated with conducting research. The students will apply the procedures and methodologies discussed in class directly to their research projects. Prerequisite: RECS435.

RECS450

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: EXER262 or RECS101 and junior status. Also listed as EXER450.

RECS481

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.

RECS492

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.

RECS496

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.

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SERV100

University Success Strategies

(1,0) 1

Based on assessment of student inventories, students are provided the opportunity to improve their study skills, methods of time management, modes of memorization, note-taking techniques, and university examination preparation. Emphasis is placed on making the transition to university life by focusing on various academic strategies and exposing students to basic information on LSSU programs, policies and procedures.

SERV125

Career Planning and Decision Making

(1,1) 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.

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SOCY101

Introduction to Sociology

(4,0) 4

This course introduces students to core sociological theorists and perspectives, including functionalism, conflict and symbolic interactionism, and familiarizes them with basic research designs, terminology and findings within the context of collective behavior and social movements.

SOCY102

Social Problems

(4,0) 4

An introductory to descriptions, theories, proposed solutions, and research methods for a variety of social problems including inequality, poverty, unemployment, environmental issues, family problems, and violence.

SOCY103

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.

SOCY113

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.

SOCY214

Criminology

(3,0) 3

A study of the nature and causes of crime and the results of various attempts to reduce crime.

SOCY227

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.

SOCY238

Social Psychology

(3,2) 4

This course examines the social nature of humans, exploring both the influence of social structures upon behavior and the process by which people create social structures; explains symbolic interactionist theory; and introduces qualitative research methods which are applied in a field study conducted by the student. Prerequisite: SOCY101 with a grade of C or better, ENGL110, with a grade of C or better.

SOCY266

Medical Sociology

(4, 0) 4

The study of social distributions and social determinants of health, as well as the societal conditions that affect health. Recommended course: SOCY101 or SOCY102.

SOCY301

Social Research Methods

(3,0) 3

Identification of research problems, concepts and theoretically derived hypothesis; Review of principle methods of experimental design, survey and field research and unobtrusive analysis. Prerequisite: Junior Status or Permission of Instructor.

SOCY302

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

SOCY310

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. Prerequisite: SOCY238.

SOCY311

Contemporary Sociological Theory

(3,0) 3

Critical analysis of major sociological theories of the 20th and 21st centuries. Prerequisite: SOCY238.

SOCY314

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.

SOCY321

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.

SOCY326

The Sociology of Aging and the Aged

(3,0) 3

Examines aging and the aged in American society from the sociological perspective.

SOCY327

The Sociology of Dying and Death

(3,0) 3

Sociological examination of dying and death.

SOCY338

Deviance

(3,0) 3

Analysis of causes and consequences of deviant behavior and the development of deviant subcultures; examination of various societal responses to control deviance and their effectiveness. Prerequisite: Junior standing or three hours of sociology and/or human services.

SOCY339

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.

SOCY399

Sociology Junior Seminar

(1,0) 1

Students will develop a proposal for their senior project through lecture and discussion, mentoring by seniors, and collaboration with colleagues. Prerequisites: SOCY238, 304, 302, and SOCY/SOWK202.

SOCY401

Sociology Seminar I

(1,0) 1

Meetings provide instruction for the senior project covering locating sources, moving from theory to research, constructing a review of literature and designing methods. Prerequisite: SOCY399.

SOCY402

Sociology Seminar II

(1,0) 1

Class meetings provide instruction for the senior project, focusing upon designing and conducting research, analyzing data, completing final report, preparing poster and formal presentation. Prerequisites: SOCY401 and 495.

SOCY420

Sociology of Cannabis

(3,0) 3

This course focuses on the cultural importance, changes in use, and reactions to various forms of marijuana, as well as the differential effects of prohibition and legalization on both the individual and various social institutions. Prerequisite: Junior Status or permission of instructor. This course focuses on the cultural importance, changes in use, and reactions to various forms of marijuana, as well as the differential effects of prohibition and legalization on both the individual and various social institutions.

SOCY490

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.

SOCY495

Senior Project I

(0,6) 2

In this practicum, under the guidance of a Sociology faculty member, the student prepares a review of literature and research plan for an independent research project in Sociology. Prerequisite: SOCY399.

SOCY496

Senior Project II

(0,6) 2

In this practicum, under the guidance of a Sociology faculty member, the student refines the research plan prepared in SOCY495, gathers data, completes an analysis, writes up the findings, presents the study in a public forum and prepares a poster. Prerequisites: SOCY401 and 495.

SOCY497

Community Action Project

(1,6) 3

This is an applied course in which, under the guidance of a sociology faculty member, the student carries out a practical project designed to address a community need identified in and elaborated upon in SOCY495. Prerequisites: SOCY401 and SOCY495.

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SOWK110

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.).

SOWK204

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. Prerequisite or Corequisite: BIOL105 or equivalent.

SOWK250

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. Credit/No credit grade.

SOWK292

Substance Abuse: Prevention and Treatment

(3,0) 3

This course examines current prevention, detection and treatment approaches for substance abuse and addiction.

SOWK301

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: LAWS202 or junior standing. Also listed as LAWS301.

SOWK305

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: HIST230 and NATV230. Also listed as LAWS305/NATV305.

SOWK310

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: PSYC201.

SOWK341

Addiction

(3,0) 3

Study of the nature of drug dependency with emphasis on social and cultural variations in patterns and consequences of use. Prerequisites: either junior standing or sophomore standing together with HMSV204.

SOWK344

Social Welfare Systems

(3,0) 3

Analysis of social welfare systems in the U.S. including history, philosophy, cross-cultural comparisons, and current issues. Prerequisites: Junior standing or completion of SOWK110 or completion of HMSV204

SOWK480

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.

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SPAN161

First-Year Spanish I

(4,1) 4 Fall

Introduction to basic Spanish grammar and vocabulary, designed to acquaint the student with the essentials of oral and written Spanish.

SPAN162

First-Year Spanish II

(4,1) 4 Spring

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: SPAN161 or equivalent.

SPAN165

Spanish for Public Safety

(4,1) 4 On Demand

A continuation of SPAN161, with emphasis on vocabulary relevant to work in criminal justice. Prerequisite: SPAN161 or equivalent.

SPAN261

Second-Year Spanish I

(3,1) 3 Fall

Intensive review of grammar and further vocabulary development. Emphasis on composition and conversation based on the reading of Spanish texts and newspapers. Prerequisite: SPAN162 or equivalent.

SPAN262

Second-Year Spanish II

(3,1) 3 Spring

Acquisition of advanced skills in composition, grammar, reading and conversation, using media and readings related to the Hispanic world. Corequisite: SPAN262 or equivalent.

SPAN301

Study Abroad

(8,0) 8 Summer

Students admitted by the faculty of the Spanish Department will take a variety of classes at an accredited institution in a Spanish-speaking country. Students will spend a minimum of 30 hours per week in class. They will also be required to visit sites for archaeological, historical and cultural importance. The students' work and progress will be monitored and evaluated by the LSSU Spanish Department in cooperation with the foreign institution. Prerequisite: Students must have completed a minimum of two courses of Spanish at LSSU and obtain the professor's permission. *Credit for this course may be applied to fulfill the requirements for a Spanish major or a Spanish minor. This course cannot be repeated.

SPAN361

Advanced Spanish Grammar

(3,0) 3

Acquisition of advanced skills in composition, grammar, reading and conversation, using media and readings related to the Hispanic world. Corequisite: SPAN262 or equivalent.

SPAN362

Advanced Spanish Composition

(3,0) 3

This course is designed to improve writing skills in Spanish through extensive and intensive reading of Spanish and Spanish-American fiction. Prerequisite: SPAN262. Corequisite: SPAN361.

SPAN368

Selected Topics in Conversation

(2,0) 2

Class assignments and readings provide the basis for in-class discussion at post-intermediate level. Students will be given the opportunity to practice vocabulary and grammar structures in life-like situations and contexts. Prerequisites: SPAN361 and 362.

SPAN380

Survey of Spanish-American Literature I

(3,0) 3

Class is a survey course of Spanish-American literature from the Spanish Conquest to 1880. It will cover readings from diverse genres and periods, beginning with an examination of precolumbian indigenous texts and ending with an overview of the development of modernismo. Prerequisites: SPAN361 and 362.

SPAN381

Survey of Spanish-American Literature II

(3,0) 3

Elective survey course of Spanish-American literature from 1880 to present day. It will cover readings from diverse genres and periods, beginning with an examination of modernismo, and culminating with selections from prominent recent literary works. Prerequisites: SPAN361 and 362.

SPAN401

The Spanish Novel

(3,0) 3

The class will focus on the study of selected 19th and 20th Century Spanish peninsular novels. Theme and content of course may vary from semester to semester. With the instructor's permission, this course may be repeated, and students may acquire up to six hours of credit for SPAN401. Prerequisites: SPAN361 and 362.

SPAN402

The Spanish-American Novel

(3,0) 3

This class will focus on the study of selected Spanish-American novels. Theme and content of course may vary from semester to semester. With the instructor's permission, this course may be repeated, and students may acquire up to six hours of credit for SPAN402. Prerequisites: SPAN361 and 362.

SPAN410

Spanish-American Civilization

(3,0) 3

This course will focus on the study of the history and culture of Spanish-America. The textbook will be supplemented with additional collateral readings; students will prepare both oral and written reports in Spanish on various assigned topics

throughout the semester. Prerequisites: SPAN361 and 362.

SPAN411
Spanish Civilization
(3,0) 3

This course will focus on the study of the history and culture of Spain. The textbook will be supplemented with additional collateral readings; students will prepare both oral and written reports in Spanish on various assigned topics throughout the semester. Prerequisites: SPAN361 and 362.

SPAN412
Hispanic Literature of the Southwest
(3,0) 3

This course will examine the post-WWII development of Chicano culture in the southwestern United States as reflected through literature and the fine arts. Students will read a broad spectrum of popular Mexican-American literary works from 1945 to present day. Prerequisites: SPAN361 and 362.

SPAN490
Topics in Hispanic Literature
(1-4,0) 1-4

The content of this elective course will vary from semester to semester. Students may repeat SPAN490 once, and in so doing, acquire up to six hours credit for their degree plan with this class. Areas of study will include, but not be limited to, specific genres, periods, authors and literary movements. Prerequisites: SPAN361 and 362.

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THEA112
Acting for Beginners
(2,2) 3

This course provides an exciting, fun, and safe environment to begin a college-level study of acting. These simple, doable acting techniques will help students express their ideas and thoughts more fully. Working to get students present in the moment, this course will introduce physically active games and exercises that activate all the actor's tools including breath, body, face, voice, and knees through releasing tension and embracing the imagination. Open to all majors.

THEA162
Practicum-Acting in Practice
(1,0) 1

Practicum provides practical experience in the work of the theatre artist by acting in a production of LSSU theatre or its equivalent in the community. Students will spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

THEA163
Practicum-Production Team

(1,0) 1

Practicum provides practical experience in assisting with the various non-performance production aspects associated with LSSU productions. Students are expected to spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. (May be repeated once for a maximum of 2 credits.)
Prerequisite: Permission of Instructor.

THEA164

Practicum-Healthcare Simulation

(1,0) 1

Practicum provides practical experience in the work of the theatre artist in assisting LSSU's diverse healthcare programming. Students will receive acting training and 'act' in various real world scenarios for healthcare simulations associated with programs like, but not limited to, nursing and EMS training. Students will be expected to spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. This course is open to all students. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

THEA212

Improvisational Acting

(2,2) 3

No script. No lines. No set. Step outside the box and make the best of it! Improvisational acting gives students a creative opportunity to free the imagination, build self-confidence and let go. The course introduces the structure and training vital to successful improvisational theatre. Build ensemble, poise, and learn to trust yourself. Prerequisite: THEA112 or Permission of Instructor.

THEA251

Theatre History

(3,0) 3

This course delves into various historic and groundbreaking movements in theatre throughout time.

THEA309

Survey of Great Playwrights

(3,0) 3

This course is designed to study the best of the best playwrights in theatre history and the various theatrical genres and creative challenges involved in the production of their work. Prerequisite: THEA251 or Permission of Instructor.

THEA312

Acting Shakespeare

(3,0) 3

Shakespeare wrote his plays to be spoken - to be acted. This course will immerse the student in an exciting study of Shakespeare's language and its heightened structure so as to bring it to life. Prerequisite: THEA212 or Permission of Instructor.

THEA333

Play Analysis

(3,0) 3

This course will reveal techniques used by theatre artists to dissect plays so as to offer intelligent, creative, and dynamic productions by studying an exciting, diverse collection of plays. Prerequisite: THEA251 or Permission of Instructor.

THEA412

Acting Studio

(3,0) 3

Acting Studio deepens the study of the craft - providing technique to the more disciplined actor. The course explores the tools used to deliver actors to a technique that frees the self, imagination and sense of play, in other words, to what acting really feels like. Stella Adler, Stanislavski, Morris Carnovsky, and Meisner will lead our study. Our exploration will make use of monologues and scene work from various classical and contemporary playwrights. Prerequisite: THEA312 or Permission of Instructor.

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USEM101

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.

USEM102

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.

USEM103

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.

USEM104

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.

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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.

Expectations for Student Learning

Lake Superior State University is committed to following a clear process of assessment to enhance continuous quality improvement and to document student learning in both the major program of study and across the general education requirements. This continuous evaluation process works to assure high quality teaching and effective student learning, while meeting federal requirements and the accreditation criteria of the Higher Learning Commission. Faculty at Lake Superior State University deem certain characteristics as essential to a liberal education, increasing value for the students in their lives as

responsible citizens; faculty have therefore collectively agreed upon the characteristics of the educated person the institution hopes to graduate. Students who complete the general education courses at Lake Superior State University will be able to demonstrate attributes of the general education outcomes for communication skills, mathematics, cultural diversity, humanities, and social and natural science.

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Institutional Learning Outcomes

Formal Communication

Students will develop and clearly express complex ideas in written and oral presentations.

Use of Evidence

Students will identify the need for, gather, and accurately process the appropriate type, quality, and quantity of evidence to answer a complex question or solve a complex problem.

Analysis and Synthesis

Students will organize and synthesize evidence, ideas, or works of imagination to answer an open-ended question, draw a conclusion, achieve a goal, or create a substantial work of art.

Professional Responsibility

Students will demonstrate the ability to apply professional ethics and intercultural competence when answering a question, solving a problem, or achieving a goal.

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Student 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 and on the Web at www.lssu.edu/finaid.
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.
4. How your financial need was determined. This includes how costs for tuition and fees, room and board, travel, books and supplies, personal and miscellaneous expenses, etc., are considered in your budget. (See Official Offer of Award letter.)
5. What resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need. (Contact the Financial Aid Office.)
6. How much of your financial need has been met, as determined by the institution. (See Official Offer of Award letter.)
7. Request an explanation of the various programs in your student aid package. If you believe you have been treated unfairly, you may request reconsideration of your award. (Contact the Financial Aid Office.)
8. The school's [refund policy](#).
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. (Contact the Financial Aid Office or see Promissory Note.)
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](#).
11. That LSSU programs are accessible to the handicapped. Further information is available from [Accessibility Services](#), Lake Superior State University, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783. Assessibility Services is located in the Kenneth Shouldice 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](#).
15. And finally, you have the right to request: 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 Information](#).)

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 workstudy 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:
 1. change in address (completed in Anchor Access) or type of residency (e.g., dorm to commuter)
 2. changes in enrollment status (e.g., dropping classes or withdrawing)
 3. changes in marital status
 4. 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.

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Campus History



Lake Superior State University is a vibrant independent regional state university serving the Eastern Upper Peninsula, and Northern Lower Peninsula with a wide range of programs at the associate and baccalaureate level. The University was established in 1946 as a branch campus of the Michigan College of Mining and Technology (now Michigan Technological University) and in 1966 became a four-year degree-granting institution known as Lake Superior State College of Michigan Technological University. In 1967 Lake Superior State College gained autonomy as a four-year baccalaureate degree-granting institution of higher learning with programs in the liberal arts and sciences, technology, business, and health fields. The name of the University was changed to Lake Superior State University in 1987 by act of the Michigan Legislature.

The University is located in Sault Sainte Marie, Michigan, in the Eastern Upper Peninsula of the State. The campus of 120 acres overlooks the St. Mary's River and Sault Sainte Marie, Ontario. Also within view are the Soo Locks which make it possible for ships to pass between Lake Huron and Lake Superior. The University is situated on the historic site of Fort Brady, a United States Army post dating back to 1822, which was decommissioned in 1944. The campus is a blend of historic and modern architecture.

Sault Sainte Marie (pop. 14,000) 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 350th birthday in 2018.

Our sister city, Sault Sainte Marie, Ontario (pop 75,000), is a cultural, recreational, social and entertainment center. The combined population of the Twin Saults allows for an international flavor abounding with the opportunities of a city, and the safety and comfort of a small town.

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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:

1. 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;
2. 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
3. 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 the Director of Human Resources/EEO Officer, Lake Superior State University Administration Building, Sault Ste. Marie, Michigan 49783 (906-635-2213) 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.

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Regional Centers



Lake Superior State University offers bachelor degree-completion programs at our regional centers that build on your education from your community college. This approach allows you to complete your degree at a reasonable cost and close to home.

All degrees require completion of the [general education requirements](#). For students transferring from a Michigan community college who have earned MACRAO or MTA (Michigan Transfer Agreement), the general education requirements are considered satisfied by LSSU.

We are proud of the high-quality instruction and the personal attention LSSU offers. Our small class sizes, experienced faculty and the ability to pursue your educational dreams close to home are what the LSSU regional centers are all about.

Stop by one of our regional centers for assistance in planning your educational goals. We can help answer your questions in areas of admissions requirements, scholarship/financial aid, academics, course rotations, registration and more.

[Escanaba/Iron Mountain Regional Center](#)

Heidi Rife, Coordinator
Escanaba Regional Center
Bay College
2001 N Lincoln Road - Heirman Center
Escanaba, MI 49829
Phone: 906-217-4123
E-mail: hberg@lssu.edu

Completion Programs are available for the following degrees:

- Accounting
- Business Administration with a declared minor (Accounting/Finance, Marketing, International Business-also available in Iron Mountain)
- Business Administration - Entrepreneurship
- Business Administration - International Business
- Business Administration - Management
- Criminal Justice - Generalist Concentration
- Criminal Justice - Law Enforcement Concentration with MCOLES
- Early Childhood Education
- Early Childhood Education - Teaching Minor (ZS Endorsement)
- Elementary Education
- Elementary Education with an Early Childhood Education Concentration
- Elementary Education with a Language Arts and Mathematics Concentration

- Language Arts - Elementary Teaching
- Mathematics - Elementary Teaching
- Special Education (Learning Disabilities) - Elementary Teaching
- General Studies
- Individualized Studies
- Nursing – Completion Program
- Secondary Education
- English Language & Literature - Secondary Teaching
- Integrated Science - Secondary Teaching
- Mathematics - Secondary Teaching
- Social Science - Secondary Teaching Concentration

Petoskey Regional Center

Carolyn Ramsdell, Coordinator
North Central Michigan College
1515 Howard Street
Petoskey, MI 49770
Phone: 231-348-6623
E-mail: cramsdell@lssu.edu

Completion Programs are available for the following degrees:

- Accounting
- Business Administration with a declared minor (Marketing, International Business)
- Business Administration - Management
- Criminal Justice – Generalist Concentration
- Criminal Justice – Law Enforcement Concentration with MCOLES
- Early Childhood Education
- General Studies

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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.

Expectations for Student Learning

Lake Superior State University is committed to following a clear process of assessment to enhance continuous quality improvement and to document student learning in both the major program of study and across the general education requirements. This continuous evaluation process works to assure high quality teaching and effective student learning, while meeting federal requirements and the accreditation criteria of the Higher Learning Commission. Faculty at Lake Superior State University deem certain characteristics as essential to a liberal education, increasing value for the students in their lives as

responsible citizens; faculty have therefore collectively agreed upon the characteristics of the educated person the institution hopes to graduate. Students who complete the general education courses at Lake Superior State University will be able to demonstrate attributes of the general education outcomes for communication skills, mathematics, cultural diversity, humanities, and social and natural science.

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Student 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 and on the Web at www.lssu.edu/finaid.
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.
4. How your financial need was determined. This includes how costs for tuition and fees, room and board, travel, books and supplies, personal and miscellaneous expenses, etc., are considered in your budget. (See Official Offer of Award letter.)
5. What resources (such as parental contribution, other financial aid, your assets, etc.) were considered in the calculation of your need. (Contact the Financial Aid Office.)
6. How much of your financial need has been met, as determined by the institution. (See Official Offer of Award letter.)
7. Request an explanation of the various programs in your student aid package. If you believe you have been treated unfairly, you may request reconsideration of your award. (Contact the Financial Aid Office.)
8. The school's [refund policy](#).
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. (Contact the Financial Aid Office or see Promissory Note.)
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](#).
11. That LSSU programs are accessible to the handicapped. Further information is available from [Accessibility Services](#), Lake Superior State University, 650 W. Easterday Ave., Sault Ste. Marie, MI 49783. Assessibility Services is located in the Kenneth Shouldice 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](#).
15. And finally, you have the right to request: 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 Information](#).)

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 workstudy 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:
 1. change in address (completed in Anchor Access) or type of residency (e.g., dorm to commuter)
 2. changes in enrollment status (e.g., dropping classes or withdrawing)
 3. changes in marital status
 4. 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.

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Campus History



Lake Superior State University is a vibrant independent regional state university serving the Eastern Upper Peninsula, and Northern Lower Peninsula with a wide range of programs at the associate and baccalaureate level. The University was established in 1946 as a branch campus of the Michigan College of Mining and Technology (now Michigan Technological University) and in 1966 became a four-year degree-granting institution known as Lake Superior State College of Michigan Technological University. In 1967 Lake Superior State College gained autonomy as a four-year baccalaureate degree-granting institution of higher learning with programs in the liberal arts and sciences, technology, business, and health fields. The name of the University was changed to Lake Superior State University in 1987 by act of the Michigan Legislature.

The University is located in Sault Sainte Marie, Michigan, in the Eastern Upper Peninsula of the State. The campus of 120 acres overlooks the St. Mary's River and Sault Sainte Marie, Ontario. Also within view are the Soo Locks which make it possible for ships to pass between Lake Huron and Lake Superior. The University is situated on the historic site of Fort Brady, a United States Army post dating back to 1822, which was decommissioned in 1944. The campus is a blend of historic and modern architecture.

Sault Sainte Marie (pop. 14,000) 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 350th birthday in 2018.

Our sister city, Sault Sainte Marie, Ontario (pop 75,000), is a cultural, recreational, social and entertainment center. The combined population of the Twin Saults allows for an international flavor abounding with the opportunities of a city, and the safety and comfort of a small town.

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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:

1. 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;
2. 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
3. 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.

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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.
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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.

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Regional Centers



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All degrees require completion of the [general education requirements](#). For students transferring from a Michigan community college who have earned MACRAO or MTA (Michigan Transfer Agreement), the general education requirements are considered satisfied by LSSU.

We are proud of the high-quality instruction and the personal attention LSSU offers. Our small class sizes, experienced faculty and the ability to pursue your educational dreams close to home are what the LSSU regional centers are all about.

Stop by one of our regional centers for assistance in planning your educational goals. We can help answer your questions in areas of admissions requirements, scholarship/financial aid, academics, course rotations, registration and more.

[Escanaba/Iron Mountain Regional Center](#)

Heidi Rife, Coordinator
Escanaba Regional Center
Bay College
2001 N Lincoln Road - Heirman Center
Escanaba, MI 49829
Phone: 906-217-4123
E-mail: hberg@lssu.edu

Completion Programs are available for the following degrees:

- Accounting
- Business Administration with a declared minor (Accounting/Finance, Marketing, International Business-also available in Iron Mountain)
- Business Administration - Entrepreneurship
- Business Administration - International Business
- Business Administration - Management
- Criminal Justice - Generalist Concentration
- Criminal Justice - Law Enforcement Concentration with MCOLES
- Early Childhood Education
- Early Childhood Education - Teaching Minor (ZS Endorsement)
- Elementary Education
- Elementary Education with an Early Childhood Education Concentration
- Elementary Education with a Language Arts and Mathematics Concentration

- Language Arts - Elementary Teaching
- Mathematics - Elementary Teaching
- Special Education (Learning Disabilities) - Elementary Teaching
- General Studies
- Individualized Studies
- Nursing – Completion Program
- Secondary Education
- English Language & Literature - Secondary Teaching
- Integrated Science - Secondary Teaching
- Mathematics - Secondary Teaching
- Social Science - Secondary Teaching Concentration

Petoskey Regional Center

Carolyn Ramsdell, Coordinator
North Central Michigan College
1515 Howard Street
Petoskey, MI 49770
Phone: 231-348-6623
E-mail: cramsdell@lssu.edu

Completion Programs are available for the following degrees:

- Accounting
- Business Administration with a declared minor (Marketing, International Business)
- Business Administration - Management
- Criminal Justice – Generalist Concentration
- Criminal Justice – Law Enforcement Concentration with MCOLES
- Early Childhood Education
- General Studies

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All students filing the FAFSA are automatically reviewed for Pell Grant eligibility. Pell Grants provide assistance to which other forms of aid may be added.

Pell Grant amounts vary according to the year (\$595-\$5920 for 2017-18) and number of credits enrolled in each semester.

To be eligible for a Pell Grant, students must:

1. be determined to have financial need.
2. be undergraduates accepted for admission and enrolled in eligible programs and meet satisfactory academic progress standards.
3. be U.S. citizens or permanent residents or qualified Jay Treaty students.
4. not be in default on a Federal Direct Stafford or Perkins Loan, and not owe a refund for a Pell Grant or other federal aid.
5. not be disqualified due to prior drug offense convictions.

There is a limit to the total amount of Federal Pell Grant that a student may receive in their lifetime, which is the equivalent to 6 full time school years.

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- Natural Resource Technology
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This grant provides supplemental funding for qualified students and may be prorated for less than full-time attendance.

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Loans



Federal Perkins Loan

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

Students may borrow up to \$5,500 for each year of undergraduate study. The lifetime loan limit for undergraduates is \$27,500. The amount awarded by the University is generally less due to limited funds.

Repayment begins nine months after students graduate or drop below half-time enrollment. 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 you :
 1. are unable to find full-time employment.
 2. are experiencing economic hardship.
 3. are active in certain military service.

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, firefighters,
5. death or disability of the student,
6. full-time staff of Head Start Educational Program,
7. full-time provider of services to high-risk children at a child or family service agency,
8. certain military service,
9. public defenders,
10. certain speech pathologists,
11. certain librarians,

12. faculty member at a tribal college,
13. volunteer service.

Federal Direct Stafford Loan (Student)

Qualified applicants must be a United States citizen or eligible alien. Students may borrow up to \$5,500 the first year of undergraduate study, \$6,500 as a sophomore and \$7,500 as a junior or senior. The lifetime maximum amount is \$31,000 for dependent students and \$57,500 for independent undergraduate students.

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

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

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

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

Repayment begins six months after graduation or the date the student attends school less than half-time. Interest rates are set each June for the following academic year.

Federal Direct PLUS Loan (Parent)

Parents may borrow up to the difference between the cost of education and other financial aid for which the student is eligible. The interest rate is adjusted annually for new loans; the 2017/18 fixed interest rate is 7.0%.

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

An origination fee is deducted from each of two disbursements made in a school year. Repayment begins within 60 days of disbursements, or may be deferred until six months after student graduates or drops below half time. Interest rates are set each June for the following academic year.

Federal Nursing Student Loan

The Nursing Education Loan Program provides loans of up to \$5200 a year for bachelor's degree or completion nursing programs. Payment assistance is available by annual application to the Department of Health and Human Services at [hrsa.gov/loanscholarships/repayment](https://www.hrsa.gov/loanscholarships/repayment). Eligibility requirements include United States citizenship, enrollment of at least half-time and demonstrated financial need.

Federal TEACH Loan Forgiveness Program

The TEACH Grant is a Loan Forgiveness Program for students who plan to become teachers in certain fields and for teachers who are seeking a graduate degree.

Qualified students may borrow up to \$4,000 per year if full time, prorated for part time.

Maximum of \$16,000 for undergraduate student.

Maximum of \$8,000 for Masters with lifetime limit of \$24,000.

Award becomes an unsubsidized federal student loan with interest accruing from initial point of disbursement if student does not meet forgiveness criteria within eight years.

Qualifications:

1. Student must be admitted into an approved major- see list on website @ www.lsu.edu/financial-aid.
2. Student must have scored above 75th percentile on admissions test or Graduate Records Exam (GRE). Submit a copy of your original ACT results clearly showing your score above the 75th percentile.
3. Student who did not meet the test criteria must have a cumulative GPA of 3.25 or higher.
4. If qualified by GPA, must meet that minimum each semester.
5. Student must complete Entrance Counseling, Interim and Exit Counseling.
6. Student must complete Agreement to Serve each year.

Criteria for forgiveness of loan for students:

1. Must complete four years of teaching within eight years of finishing program.
2. Must perform teach service as a highly-qualified teacher.
3. Must teach in a high-need subject area for at least four years at a school serving low-income students.
4. Must be a full-time teacher with majority of time spent teaching one of the high need subjects:
 1. Bilingual Education and English Language Acquisition
 2. Foreign Language
 3. Mathematics
 4. Reading Specialist
 5. Science
 6. Special Education
 7. Other teacher shortage areas documented as high need by Federal, State or local education agency and listed in Department of Education Annual Teacher Shortage Area Nationwide at the time the student begins teaching.

Canada Student Loan

Canadian students who need financial help to earn a degree at Lake Superior State University may apply for aid through the Ontario Student Assistance Program (OSAP).

To qualify for a loan, the student must:

1. be a Canadian citizen or have landed immigrant status;
2. be a resident of a province that participates in the plan;

3. have attained a satisfactory scholastic standard;
4. be enrolled, or qualified to enroll in a post-secondary course of studies;
5. be taking at least 60 percent course load (eight credits);
6. complete an application for OSAP at osap.gov.on.ca;
7. bring Program Information Form to the LSSU Registrar's Office to be completed and mailed by LSSU.

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

Application forms are available on-line at www.osap.gov.on.ca.

Short-Term Educational Loan

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 \$300 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 service charge is assessed on all loans.

Student Emergency Fund

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

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Federal Work-Study

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

Students may work up to 19 hours weekly while attending classes at least 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.

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

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

Campus Job Opportunity

If you are interested in working on campus, but do not qualify for work study, you may be employed under the Campus Job Opportunity Program. Students must be enrolled full-time, and may work up to 19 hours per week. During the summer and other vacation periods, students may work up to 40 hours per week.

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 \$2,000 during the school year and up to \$4,600 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.

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Programs for Native Americans

Bureau of Indian Affairs Scholarship Grant

Members or those eligible for membership in a federally recognized tribe showing need, may apply for Bureau of Indian Affairs Scholarship Grants by contacting their tribal education office for an application. It is possible to receive up to full university expenses per year in scholarship grants if financial need is demonstrated.

All applicants must complete a Free Application for Federal Student Aid (FAFSA).

Bureau of Indian Affairs Vocational Training Assistance

Native students enrolled in certificate or associate degree programs are eligible for assistance to pay for tuition, books and living expenses. You must be a member or eligible for membership in a federally recognized tribe.

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

Michigan Indian Tuition Waiver

As of July 1, 2010, Michigan Indian Tuition Waiver applications are processed by the Department of Civil Rights. To be eligible for the MITW, you must meet the following criteria:

- You must be admitted to LSSU AND
- You must be 1/4 or more Native American blood quantum as certified by your Tribal Enrollment Department AND
- You must be a legal resident of the state of Michigan for not less than 12 consecutive months and provide proof of Michigan residency upon request of the Financial aid Office.

Waiver requests must be received and complete prior to the census date each semester. Applications are submitted to your Tribal Education Department.

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Veterans Educational Benefits



Lake Superior State University's VA Certifying Official acts as a liaison between the Department of Veteran Affairs and eligible students. Student eligibility for veterans educational benefits is determined by the United States Department of Veterans Affairs. Students who believe they are eligible for veterans educational benefits are encouraged to contact the U.S. Department of Veterans Affairs and the Michigan Department of Military and Veterans Affairs for educational assistance programs. Additional information is available at LSSU's [Veterans Benefits website](#).

A Veterans Educational Benefits recipient must be admitted into a degree program or as a guest student. The student is required to provide the University's VA Certifying Official with a degree audit form from their department. All transfer credit is evaluated and recorded as "credit for previous training". Classes may not be repeated if passing grades were received. Each semester the student must provide a completed certification form of scheduled classes within their declared major to the University's VA Certifying Official. The student must also notify the University's VA Certifying Official of any change to their scheduled classes, academic program, or withdrawal from the University. These activities along with attendance are monitored and reported to the U.S. Department of Veterans Affairs.

Students who are receiving VA Educational Benefits are expected to pay tuition and fees by the payment deadline date established by the University each semester, with exception to the following:

- Students receiving Post 9/11 Benefits and have a current semester course certification on file in the Registrar's Office will automatically receive a deferment on tuition and fee payment until payment arrives from the VA.
- Students participating in the Vocational Rehabilitation Program, Chapter 31 will not receive late fees for any charges eligible for payment in accordance with VR&E.

Standards of Progress requirements for recipients of Veterans educational benefits follow the University's "Academic Probation and Dismissal Policy" as stated. If a student fails to meet these standards, the University's VA Certifying Official must notify the U.S. Department of Veterans Affairs and the student's benefits will be terminated for unsatisfactory progress.

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Financial Aid

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2024-2025 FAFSA

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24-25 FAFSA

It is the mission of the Financial Aid Office to provide accurate and timely financial aid information to students to meet their educational expenses. Our goal is to offer all students a balanced financial aid package that is competitive and attractive, and best utilizes the resources available. We strive to assist and educate our students by providing the best service possible so that they can focus on their educational experience.

Meet the Staff

Anne Van

Director Financial Aid

Email: avan1@lssu.edu

Phone: 906-635-2146

Barbra Marsh

Assistant Director Financial Aid

Email: bmarsh@lssu.edu

Phone: 906-635-2677

Brook Strawn

Financial Aid Officer

Email: bstrawn@lssu.edu

Phone: 906-635-2899

If you would like to schedule an appointment with the Financial Aid office, please schedule here: <https://lssufinancialaid.setmore.com>

Mailing address:

Financial Aid Office

Fletcher Center

650 W. Easterday Ave.

Sault Ste. Marie, MI 49783

Phone:

906-635-2678

Fax:

906-635-6669

E-mail:

finaid@lssu.edu

Text:

906-379-9557

Hours:

Monday – Friday

Regular: 8:00 am – 5:00 pm

Summer: 8:00 am – 4:30 pm

NOTE: Please allow one to two business days for a response when contacting us via e-mail, text, or when leaving a voice message.

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Web Accessibility Policy

*Director of Library/Academic Services and
Web Accessibility Coordinator*

*Marc Boucher
906-635-2404
Library 208*

Accessibility Statement

Lake Superior State University is committed to making reasonable accommodations related to its facilities, programs, or services for qualifying students, staff, faculty, and campus guests with disabilities as required by applicable laws. If any programming or activity is scheduled in an inaccessible space, requests for relocation shall be made to the Human Resources office at 906-635-2213, if possible, 48 hrs prior to the event. View [Accessibility Statement Details](#)



**LAKE SUPERIOR
STATE UNIVERSITY**

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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 you :
 1. are unable to find full-time employment.
 2. are experiencing economic hardship.
 3. are active in certain military service.

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, firefighters,
5. death or disability of the student,
6. full-time staff of Head Start Educational Program,
7. full-time provider of services to high-risk children at a child or family service agency,
8. certain military service,
9. public defenders,
10. certain speech pathologists,
11. certain librarians,

12. faculty member at a tribal college,
13. volunteer service.

Federal Direct Stafford Loan (Student)

Qualified applicants must be a United States citizen or eligible alien. Students may borrow up to \$5,500 the first year of undergraduate study, \$6,500 as a sophomore and \$7,500 as a junior or senior. The lifetime maximum amount is \$31,000 for dependent students and \$57,500 for independent undergraduate students.

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

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

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

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

Repayment begins six months after graduation or the date the student attends school less than half-time. Interest rates are set each June for the following academic year.

Federal Direct PLUS Loan (Parent)

Parents may borrow up to the difference between the cost of education and other financial aid for which the student is eligible. The interest rate is adjusted annually for new loans; the 2017/18 fixed interest rate is 7.0%.

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

An origination fee is deducted from each of two disbursements made in a school year. Repayment begins within 60 days of disbursements, or may be deferred until six months after student graduates or drops below half time. Interest rates are set each June for the following academic year.

Federal Nursing Student Loan

The Nursing Education Loan Program provides loans of up to \$5200 a year for bachelor's degree or completion nursing programs. Payment assistance is available by annual application to the Department of Health and Human Services at [hrsa.gov/loanscholarships/repayment](https://www.hrsa.gov/loanscholarships/repayment). Eligibility requirements include United States citizenship, enrollment of at least half-time and demonstrated financial need.

Federal TEACH Loan Forgiveness Program

The TEACH Grant is a Loan Forgiveness Program for students who plan to become teachers in certain fields and for teachers who are seeking a graduate degree.

Qualified students may borrow up to \$4,000 per year if full time, prorated for part time.

Maximum of \$16,000 for undergraduate student.

Maximum of \$8,000 for Masters with lifetime limit of \$24,000.

Award becomes an unsubsidized federal student loan with interest accruing from initial point of disbursement if student does not meet forgiveness criteria within eight years.

Qualifications:

1. Student must be admitted into an approved major- see list on website @ www.lsu.edu/financial-aid.
2. Student must have scored above 75th percentile on admissions test or Graduate Records Exam (GRE). Submit a copy of your original ACT results clearly showing your score above the 75th percentile.
3. Student who did not meet the test criteria must have a cumulative GPA of 3.25 or higher.
4. If qualified by GPA, must meet that minimum each semester.
5. Student must complete Entrance Counseling, Interim and Exit Counseling.
6. Student must complete Agreement to Serve each year.

Criteria for forgiveness of loan for students:

1. Must complete four years of teaching within eight years of finishing program.
2. Must perform teach service as a highly-qualified teacher.
3. Must teach in a high-need subject area for at least four years at a school serving low-income students.
4. Must be a full-time teacher with majority of time spent teaching one of the high need subjects:
 1. Bilingual Education and English Language Acquisition
 2. Foreign Language
 3. Mathematics
 4. Reading Specialist
 5. Science
 6. Special Education
 7. Other teacher shortage areas documented as high need by Federal, State or local education agency and listed in Department of Education Annual Teacher Shortage Area Nationwide at the time the student begins teaching.

Canada Student Loan

Canadian students who need financial help to earn a degree at Lake Superior State University may apply for aid through the Ontario Student Assistance Program (OSAP).

To qualify for a loan, the student must:

1. be a Canadian citizen or have landed immigrant status;
2. be a resident of a province that participates in the plan;

3. have attained a satisfactory scholastic standard;
4. be enrolled, or qualified to enroll in a post-secondary course of studies;
5. be taking at least 60 percent course load (eight credits);
6. complete an application for OSAP at osap.gov.on.ca;
7. bring Program Information Form to the LSSU Registrar's Office to be completed and mailed by LSSU.

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

Application forms are available on-line at www.osap.gov.on.ca.

Short-Term Educational Loan

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 \$300 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 service charge is assessed on all loans.

Student Emergency Fund

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

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Campus Employment

Federal Work-Study

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

Students may work up to 19 hours weekly while attending classes at least 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.

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

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

Campus Job Opportunity

If you are interested in working on campus, but do not qualify for work study, you may be employed under the Campus Job Opportunity Program. Students must be enrolled full-time, and may work up to 19 hours per week. During the summer and other vacation periods, students may work up to 40 hours per week.

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 \$2,000 during the school year and up to \$4,600 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.

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Programs for Native Americans

Bureau of Indian Affairs Scholarship Grant

Members or those eligible for membership in a federally recognized tribe showing need, may apply for Bureau of Indian Affairs Scholarship Grants by contacting their tribal education office for an application. It is possible to receive up to full university expenses per year in scholarship grants if financial need is demonstrated.

All applicants must complete a Free Application for Federal Student Aid (FAFSA).

Bureau of Indian Affairs Vocational Training Assistance

Native students enrolled in certificate or associate degree programs are eligible for assistance to pay for tuition, books and living expenses. You must be a member or eligible for membership in a federally recognized tribe.

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

Michigan Indian Tuition Waiver

As of July 1, 2010, Michigan Indian Tuition Waiver applications are processed by the Department of Civil Rights. To be eligible for the MITW, you must meet the following criteria:

- You must be admitted to LSSU AND
- You must be 1/4 or more Native American blood quantum as certified by your Tribal Enrollment Department AND
- You must be a legal resident of the state of Michigan for not less than 12 consecutive months and provide proof of Michigan residency upon request of the Financial aid Office.

Waiver requests must be received and complete prior to the census date each semester. Applications are submitted to your Tribal Education Department.

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Veterans Educational Benefits

Lake Superior State University's VA Certifying Official acts as a liaison between the Department of Veteran Affairs and eligible students. Student eligibility for veterans educational benefits is determined by the United States Department of Veterans Affairs. Students who believe they are eligible for veterans educational benefits are encouraged to contact the U.S. Department of Veterans Affairs and the Michigan Department of Military and Veterans Affairs for educational assistance programs. Additional information is available at LSSU's [Veterans Benefits website](#).

A Veterans Educational Benefits recipient must be admitted into a degree program or as a guest student. The student is required to provide the University's VA Certifying Official with a degree audit form from their department. All transfer credit is evaluated and recorded as "credit for previous training". Classes may not be repeated if passing grades were received. Each semester the student must provide a completed certification form of scheduled classes within their declared major to the University's VA Certifying Official. The student must also notify the University's VA Certifying Official of any change to their scheduled classes, academic program, or withdrawal from the University. These activities along with attendance are monitored and reported to the U.S. Department of Veterans Affairs.

Students who are receiving VA Educational Benefits are expected to pay tuition and fees by the payment deadline date established by the University each semester, with exception to the following:

- Students receiving Post 9/11 Benefits and have a current semester course certification on file in the Registrar's Office will automatically receive a deferment on tuition and fee payment until payment arrives from the VA.
- Students participating in the Vocational Rehabilitation Program, Chapter 31 will not receive late fees for any charges eligible for payment in accordance with VR&E.

Standards of Progress requirements for recipients of Veterans educational benefits follow the University's "Academic Probation and Dismissal Policy" as stated. If a student fails to meet these standards, the University's VA Certifying Official must notify the U.S. Department of Veterans Affairs and the student's benefits will be terminated for unsatisfactory progress.

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ENGL110

First-Year Composition I

(3,0) 3

ENGL110 provides students with an introduction to the discipline of writing through an exploration of their own writing processes and products. Emphasis is placed on students learning to think critically about their own writing in order to address issues of coherence, grammar, mechanics, organization, clarity and content. Other material covered includes the role of literacy in society, the ways in which readers engage text, and the role of writing at the college level.

Source: Academic Catalog 2020-21

ENGL111

First-Year Composition II

(3,0) 3

First-Year Composition II prepares students for the complex demands of academic literacy and research. These require students to be able to critically observe personal and public knowledge; ask questions of reading and research; formulate hypotheses; design and conduct research projects, both in the library and in the field; and identify further avenues of inquiry. To help students develop these abilities, the course also teaches students the basic skills of analysis, interpretation, critical thinking and documentation. Required course work includes completion of an extended research project. Prerequisite: a grade of C or higher in ENGL110.

Source: Academic Catalog 2020-21

COMM101

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.

Source: Academic Catalog 2020-21

COMM201

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: COMM101.

Source: Academic Catalog 2020-21

COMM225

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: COMM101.

Source: Academic Catalog 2020-21

MATH110

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: MATH088 or equivalent score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

BUSN121

Introduction to Business

(3,0) 3

This course is intended to provide students a broad overview of the complex and dynamic contemporary world of business. The course will illustrate how human resources management, marketing, production, and finance are major functions that work together to help owners, employees and customers reach their objectives. Business must operate within economic, social, natural, technological, international, legal, and political environments.

Source: Academic Catalog 2020-21

ECON201

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: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam or MATH102 with a grade of C or better.

Source: Academic Catalog 2020-21

ECON202

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: Two years of high school algebra and equivalent/satisfactory score on ACT or Placement Exam or MATH102 with a grade of C or better.

Source: Academic Catalog 2020-21

ECON302

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: MATH112 or equivalent.

Source: Academic Catalog 2020-21

GEOG201

World Regional Geography

(4,0) 4 Alternate Years

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.

Source: Academic Catalog 2020-21

GEOG302

Economic Geography

(4,0) 4 Alternate Years

A study of the internal and external inter-relationships of the various economic groupings of the world; i.e. North America, Europe and the emerging third world.

Source: Academic Catalog 2020-21

HIST101

History of World Civilization I

(4,0) 4 Fall

A study of world civilization from earliest time through the baroque.

Source: Academic Catalog 2020-21

HIST102

History of World Civilization II

(4,0) 4 Spring

A study of world civilization from the baroque to the present.

Source: Academic Catalog 2020-21

HIST131

United States History I

(4,0) 4 Fall

A study of United States history from the colonial settlement to the end of the American Civil War in 1865.

Source: Academic Catalog 2020-21

HIST132

United States History II

(4,0) 4 Spring

A study of United States history from the end of the Civil War to the present.

Source: Academic Catalog 2020-21

POLI110

Introduction to American Government and Politics

(4,0) 4

An introductory survey of American national government and politics.

Source: Academic Catalog 2020-21

POLI160

Introduction to Canadian Government and Politics

(3,0) 3

An introductory survey of Canadian government and politics.

Source: Academic Catalog 2020-21

POLI241

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.

Source: Academic Catalog 2020-21

PSYC101

Introduction to Psychological Science

(3,0) 3

A general introduction to the systematic study of behavior and mental processes in humans and animals.

Source: Academic Catalog 2020-21

PSYC107

Positive Psychology

(3,0) 3

An overview of Positive Psychology - a field of psychology that applies behavioral science methods to improving mental health, life satisfaction and biopsychosocial well being. Prerequisites: Admission to the Honors Program and Permission of the Director of the Honors Program.

Source: Academic Catalog 2020-21

PSYC155

Lifespan Development

(3,0) 3

Human psychological development from birth to death. This course covers social, emotional and intellectual development across the lifespan.

Source: Academic Catalog 2020-21

SOCY101

Introduction to Sociology

(4,0) 4

This course introduces students to core sociological theorists and perspectives, including functionalism, conflict and symbolic interactionism, and familiarizes them with basic research designs, terminology and findings within the context of collective behavior and social movements.

Source: Academic Catalog 2020-21

SOCY102

Social Problems

(4,0) 4

An introductory to descriptions, theories, proposed solutions, and research methods for a variety of social problems including inequality, poverty, unemployment, environmental issues, family problems, and violence.

Source: Academic Catalog 2020-21

SOCY113

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.

Source: Academic Catalog 2020-21

BIOL104

Survey of General Biology

(3,3) 4

This course is a non-majors biology course that will cover the major units of general biology: (1) cells and energy; (2) genetics; (3) evolution; (4) organismal biology; (5) ecology. Developing a solid understanding of the fundamentals of general biology is vital to being an informed citizen about advances in the medical and food sciences, foundational and new information about the organization of life, and current issues of environmental and ecological concern. Course content is tied to the State of Michigan's benchmarks for training elementary school teachers, but any students interested in the life sciences are encouraged to take this class. The laboratory is designed to illustrate the course content as well as illustrate the principles of inquiry. Prerequisites: MATH088 and READ091 or equivalent test scores. Pre or Corequisite ENGL110.

Source: Academic Catalog 2020-21

BIOL105

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: Pre or Corequisite ENGL110.

Source: Academic Catalog 2020-21

BIOL122

Human Anatomy and 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: BIOL121.

Source: Academic Catalog 2020-21

BIOL131

General Biology: Cells

(3,3) 4

This course is an introduction to the cellular aspects of general biology. This course will provide an overview of cellular biology and serve as a framework for further biological studies. Topics to be covered include basic chemistry of the cell, function of cellular organelles, cellular metabolism including respiration and photosynthesis, the cell cycle, mitosis, meiosis, simple transmission genetics, introduction to molecular and developmental biology. The laboratory introduces the student to inquiry based scientific method. Prerequisites: MATH088 or equivalent scores on the math placement exams; Pre or Corequisite ENGL110.

Source: Academic Catalog 2020-21

BIOL132

General Biology:Organisms

(3,3) 4

An introduction to the diversity of life, including the morphology, physiology, reproduction, general habitats and taxonomy of organisms. Adaptation to environment and modern concepts of evolution are stressed as unifying themes throughout the course. Prerequisites: MATH088 or equivalent scores on the math placement exams; Pre or Corequisite ENGL110.

Source: Academic Catalog 2020-21

CHEM108

Applied Chemistry

(3,0) 3

An introduction to selected principles of chemistry with emphasis on technological applications. Credit in this course does not apply toward a major or minor in chemistry. Prerequisites: Pre- or corequisite of MATH102.

Source: Academic Catalog 2020-21

CHEM109

Applied Chemistry Lab

(0,3) 1

Laboratory experience for CHEM108 Applied Chemistry (must complete both lecture and laboratory to qualify for general education credit). Corequisite: CHEM108.

Source: Academic Catalog 2020-21

CHEM115

General Chemistry I

(4,2) 5

Fundamental principles of chemistry with emphasis such as scientific method, basic chemical reactions and acid base equilibria, stoichiometry, periodic trends of elements, an introduction to the energy of reactions, atomic structure, simple bonding models, molecular structure, and intermolecular forces. Pre- or corequisite of MATH111 or higher and ENGL091 or equivalent. Pre- or corequisite of MATH111.

Source: Academic Catalog 2020-21

NSCI110

Introduction to Forensics

(3,2) 4

An applied introductory chemistry course introduces the world of forensics focusing on the aspects of chemistry used during an investigation. This unique general education class will incorporate a criminal justice and fire science perspective while providing an introduction to chemical principles. Attention will be given to developing critical thinking skills, understanding the scientific process and to making scientifically informed decisions about every day events. Pre- or co-requisite of MATH102 (or higher) or equivalent/satisfactory score on ACT, SAT or Placement Exam.

Source: Academic Catalog 2020-21

GEOL115

Field Excursions in Earth Science

(2,4) 4

A field- and project-based educational experience in which aspects of geology, including environmental geology, earth resources, tectonic processes and the interrelationships among geology and other natural sciences, will be addressed. Travel destinations will include regions with unique natural history.

Source: Academic Catalog 2020-21

GEOL121

Physical Geology

(3,2) 4

The study of processes and features of the rocks and surficial materials that form the Earth's crust. Emphasis will be placed on the dynamic earth including volcanoes, plate tectonics, geologic time, catastrophic events such as earthquakes, and natural resources and their impact on society. The class requires student projects and emphasizes active problem-solving.

Source: Academic Catalog 2020-21

GEOL122

Historical Geology

(3,2) 4

The study of surficial, tectonic, geologic and biologic processes in the context of an Earth history perspective. Emphasis will be placed on evolution of the earth; stratigraphic principles, tectonic framework of North America; rock forming processes, landforms and depositional environments; climate, weathering, surficial processes, and sea level changes; and significant events in the history of plants and animals as recorded by fossils and paleontology studies.

Source: Academic Catalog 2020-21

GEOG106

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. Credit for both GEOG106 and NSCI107 not permitted.

Source: Academic Catalog 2020-21

NSCI102

Great Lakes Region: Geology and Resources

(3,2) 4

A survey course to acquaint students with the major concepts and phenomena inherent in a study of geology with a focus and application to the Great Lakes region. It will also provide sufficient background for a better understanding of human relationships to the physical environment and resources with an emphasis on implications for the Great Lakes region.

Prerequisite: None.

Source: Academic Catalog 2020-21

PHYS221

Principles of Physics I

(3,2) 4

General principles of rigid body mechanics (kinematics, forces, laws of motion, energy, momentum, rotation) and fluid mechanics. Prerequisites: Two years of high school algebra and one-half year of high school trigonometry with a math ACT of 28 or higher, New SAT Section is 660 or higher, New SAT Test is 33 or higher, or Old SAT Section is 640 or higher; or MATH111.

Source: Academic Catalog 2020-21

PHYS231

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: MATH151.

Source: Academic Catalog 2020-21

NSCI101

Great Lakes Region: Chemistry, Physics and other Laws of Nature

(3,2) 4

A survey of basic physical science principles emphasizing their applications in daily life. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

NSCI103

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.

Source: Academic Catalog 2020-21

NSCI104

Environmental Science Laboratory

(0,2) 1

Laboratory component of environmental science. Corequisite: NSCI103.

Source: Academic Catalog 2020-21

NSCI108

Science for Citizens

(3,2) 4

This course picks up where the Next Generation Science Standards (NGSS) for High School end. After a review of materials from NGSS, students will then delve deeper into major scientific topics to examine phenomena through traditional course work and laboratory exercises. This course is designed to provide a background in science that will allow individuals to continue to learn throughout life, evaluate general scientific information to make more informed decisions as a citizen, and promote participation in citizen science. Topics are introduced and then supported through review of current issues as popular news articles and books, social media trends, and proposed legislation. Students will read provided information and then evaluate the merits of scientific aspects based upon their knowledge of the subject matter gained from discussion and laboratory exercises. Prerequisite: MATH088 and ENGL110.

Source: Academic Catalog 2020-21

NSCI116

Introduction to Oceanography

(3,2) 4

A survey of the features, processes and evolution of Earth's ocean basins. The course will examine geological, physical, chemical and ecological aspects of oceanography with an emphasis on their interrelationships and their impact on humanity.

Source: Academic Catalog 2020-21

NSCI119

Descriptive Astronomy

(3,2) 4

Introductory course with a balanced, comprehensive account of contemporary astronomy with emphasis placed on the broad principles of astronomy rather than on a chronological or historical framework. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

GEOG108

Physical Geography: Meteorology & Climatology

(3,2) 4

Introduction to earth-sun relationships, maps and elementary principles of atmospheric science. Natural (physical) science credit given. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. Credit for both GEOG108 and NSCI105 not permitted.

Source: Academic Catalog 2020-21

ARTS250

Art History and Appreciation I

(4,0) 4

The study of art beginning with the prehistoric caves in France through the religious presentations in Mesopotamia and Egypt. The humanistic-centered art of Greece and Rome follows. Powerful expressions of faith dominate art in the Christian and Islamic styles that evolved after the fall of the Roman Empire. The early renaissance offers a religious art that combines the elements of faith with a renewed interest in the art of classical Greece and Rome. Students from all academic disciplines can benefit from this course.

Source: Academic Catalog 2020-21

ARTS251

Art History and Appreciation II

(4,0) 4

A study of European art from the High Renaissance to the present day. Beginning with Leonardo and Michelangelo, this class will examine the evolution of western art in the works of Rembrandt, Bernini, David, and Delacroix to mention only a few. Of particular importance is the universal Romantic style that inspired artists in America. This class will examine how the industrial revolution and the invention of the camera forced artists to seek new ways of presentation. Modern styles such as Impressionism, Cubism, Surrealism and Abstract Expressionism follow. Art in the 20th and 21st centuries will be studied in relation to science, two world wars, and the societal changes that characterize the contemporary world.

Source: Academic Catalog 2020-21

HUMN240

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 NATV240.

Source: Academic Catalog 2020-21

ENGL180

Introduction to Literary Studies

(3,0) 3

This course introduces students to the theory and methodology of literary study, focusing on three questions: What is a literary text? How do we read a literary text? How do we write about a literary text? Addressing these questions requires students to examine the social and cultural contexts of literature and its aesthetic, rhetorical and ideological aspects. These considerations will help students judge literary value and examine their own literary assumptions. Requires one research project and critical essays using MLA style. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

HUMN203

Survey of Chinese Culture

(3,0) 3

Designed for students interested in Chinese culture and study abroad. Taught in English and offered at a partner university in China during the first summer session. This four-week course introduces the major cultural and artistic aspects of Chinese society. Lecture topics include Chinese history, geography, language, ethos, philosophy, literature, religion, historical relics, education, medicine, architecture, etiquette, and social and economic aspects of Chinese culture. Field trips to museums, art galleries, historic sites, and places of interest are scheduled throughout the trip.

Source: Academic Catalog 2020-21

HIST231

Natives and Newcomers

(3,0) 3

This course is an introduction to the encounters between Native Americans, Europeans, and Africans in North America from the late fifteenth century to the mid-eighteenth century. Students will gain a working knowledge on how these encounters generated a variety of cultural, economic, religious, political, social, and military interactions. No Prerequisites or Co-requisites required.

Source: Academic Catalog 2020-21

MUSC220

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.

Source: Academic Catalog 2020-21

MUSC221

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.

Source: Academic Catalog 2020-21

HUMN255

World Mythology

(4,0) 4

A survey of world mythology from Gilgamesh to Finnegans Wake. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

PHIL204

Introduction to Philosophy

(3,0) 3

A study of philosophy with the aims to become wiser and live better. Through a host of immersive assignments, such as "live like a philosopher", students will experience first-hand the philosophies that just might rescue them from the traps of distraction, indecision, and disconnect. A large part of this course will be devoted to helping students articulate and defend their own visions for what makes a meaningful life. The course will impart wise and practical guidance from some of the greatest representatives of the philosophical tradition.

Source: Academic Catalog 2020-21

PHIL302

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: ENGL111.

Source: Academic Catalog 2020-21

PHIL305

Modern and Contemporary Philosophy

(3,0) 3

Students will become familiar with the arguments and ideas that have sought to describe and, in many cases, to shape the consciousness of the modern and postmodern epochs. From Descartes to Kant, modern philosophy experimented with new ways to understand existence, identity, causality, and God. From Russell to Williams, contemporary philosophers grappled with new ways to understand logic, ethics, gender, and subjective experience. Students will learn to make connections between their own ways of experiencing the world and the sometimes subtle ways that philosophers since Descartes have influenced their understanding of their experiences. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

HUMN256

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. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

THEA251

Theatre History

(3,0) 3

This course delves into various historic and groundbreaking movements in theatre throughout time.

Source: Academic Catalog 2020-21

SPAN261

Second-Year Spanish I

(3,1) 3 Fall

Intensive review of grammar and further vocabulary development. Emphasis on composition and conversation based on the reading of Spanish texts and newspapers. Prerequisite: SPAN162 or equivalent.

Source: Academic Catalog 2020-21

SPAN262

Second-Year Spanish II

(3,1) 3 Spring

Acquisition of advanced skills in composition, grammar, reading and conversation, using media and readings related to the Hispanic world. Corequisite: SPAN262 or equivalent.

Source: Academic Catalog 2020-21

HUMN251

Humanities I

(4,0) 4

This course uses an interdisciplinary approach that includes art, philosophy, literature, and music to understand the evolution of culture. It begins with prehistory and the first agricultural settlements in Egypt and the Fertile Crescent. Some cross-cultural comparisons are made through the study of ancient Indian and Chinese culture. Emphasis is placed on the intellectual development of the ancient Hebrews. Ancient Greece and Rome follow, as the progenitors of western culture. We examine the religious practices of emerging Islam, set in contrast and comparison with the Christian intellectual tradition through the Byzantine, Romanesque and Gothic periods. Hindu and Buddhist ideas and artifacts provide further context and perspective. The course concludes with the study of renaissance culture into the early 16th century. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

HUMN252

Humanities II

(4,0) 4

Humanistic study moves across the disciplines of art, philosophy, literature, and music. This course begins with a review of renaissance humanism and explores the Reformation and the Catholic Church's response to it. The age of despots is examined in the Baroque and Neoclassical styles leading to the Enlightenment and the Age of Reason. Mention is made of the democratic revolutions that occurred in the United States, France, and England. Impressionism, Expressionism, Surrealism and other modern styles are presented as they appear in the art and literature of the 20th and 21st centuries. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

BUSN308

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.

Source: Academic Catalog 2020-21

EDUC250

Student Diversity and Schools

(4,0) 4

This course will examine the impact of diversity on students and educational systems through the consideration of the historical and philosophical foundations of schooling, the impact of diversity on students' participation in the system, and the characteristics of effective teaching practice to meet the needs of diverse learners. Field experience in an Eastern Upper Peninsula elementary or secondary school is required. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

ENGL235

Survey of Native Literature of North America

(3,0) 3

Students will examine various types of Native American literatures, including traditional stories, non-fiction, fiction and poetry from authors of numerous different nations. A variety of themes, including Native American identity and the role of culture in literature, will be covered. Corequisite: ENGL111 (also listed as NATV235).

Source: Academic Catalog 2020-21

ENGL236

Literature and Culture

(3,0) 3

Students will examine English-language texts from a variety of cultures, including American minorities and other underrepresented cultures. Students will observe the way in which culture is presented in the texts and how culture can help to shape the texts. Corequisite: ENGL111.

Source: Academic Catalog 2020-21

GEOG306

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.

Source: Academic Catalog 2020-21

HIST203

Chinese Cultural Diversity

(3,0) 3

Designed for students interested in the diversity of Chinese culture and study abroad. Taught in English and offered at a partner university in China during the first summer session. This four-week course explores, but is not limited to, the traditional social values, classes, divergences, ethnicity, religion, and gender issues characteristic of Chinese culture. The course is conducted in a lecture format with class discussions and guided field trips.

Source: Academic Catalog 2020-21

HLTH328

Multicultural Approaches to Health Care

(3,0) 3

This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations, assessment techniques and alternative/complementary health practices. Prerequisite: SOCY101. Also listed as NURS328.

Source: Academic Catalog 2020-21

INTB289

Competing in the Global Market Place

(3,0) 3

This course presents a systematic overview of international business and provides an introduction to important issues, including international trade policy, the global monetary system, and strategies of international business. Additionally, the course will look at management practices of international business, including: organizational structure of multinational organizations, production and logistics, human resource management, and financial management.

Source: Academic Catalog 2020-21

POLI234

Women and Politics Around the World

(4,0) 4

This course will examine a broad range of issues involving gender and politics: the political participation of women, the history of women's movements, voting differences, political divisions among women, and the present political status of women in the United States and globally.

Source: Academic Catalog 2020-21

POLI334

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.

Source: Academic Catalog 2020-21

RECS367

National Parks, National Monuments and National Culture

(3,0) 3 Alternate years

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.

Source: Academic Catalog 2020-21

SOCY103

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.

Source: Academic Catalog 2020-21

SOCY321

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.

Source: Academic Catalog 2020-21

PHIL205

Logic

(3,0) 3

An introductory course in logic; study of the role of logical methods of the rational approach to knowledge; consideration of such concepts as definition, implication, inference, syllogism, deduction. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

MATH102

Intermediate Algebra

(3,0) 3

Algebra for students who have not had second-level high school algebra or who need a refresher course in that level of algebra. Quadratic equations, radical and rational expressions and equations, exponential and logarithmic functions will be studied. Students who are enrolled in MATH088 are encouraged to also enroll in MATH107 concurrently. Prerequisites: MATH088 or equivalent/satisfactory score on ACT/SAT or Placement Exam. This course will not count toward a major or minor in mathematics.

Source: Academic Catalog 2020-21

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Minors require a minimum of 20 earned credits (at the 100 level or higher) with a minimum gpa of 2.00 or higher. Some minors require a higher gpa. Teaching minors require a minimum gpa of 2.70 or higher.

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1984-1992

Dr. Gary Wolfram
2000-2008

Dr. James Woodruff
1976-1984

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Lake Superior State University



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Emeriti Faculty

Allan, Thomas A., Associate Professor of Biology (1984-2017); AS 1971, Northwestern Michigan College; BS 1973, Central Michigan University; MS 1978, Michigan Technological University; PhD 1984, University of Maine, Orono

Anderson, Melvin L., Professor of Chemistry (1969-1993); BS 1953, MS 1955, Michigan Technological University; PhD 1965, Michigan State University (deceased)

Andary, Carol, Professor of Legal Studies (1983-2016); BS 1977 Western Michigan University; JD 1980 Wayne State University; Licensed to practice law in State of Michigan 1980

Anderson, Roland A., Associate Professor of Office Administration (1969-1986); BA 1953, Wisconsin State University-Whitewater; MA 1961, Northern Colorado University-Greeley

Arbic, Bernard J., Professor of Mathematics (1967-2000); BS 1962, Massachusetts Institute of Technology; MA 1967, Bowdoin College; PhD 1972, University of Wyoming

Behmer, David J., Professor of Biology (1967-1996); BS 1963, Wisconsin State College; MS 1965, PhD 1966, Iowa State University

Blashill, James R., Associate Professor of Criminal Justice and Fire Science(1995-2008); BS 1963, Wayne State University; MS 1976, Michigan State University

Boger, Thomas M., Associate Professor of Mathematics and Computer Science (1981-2015); BS 1973, MS 1974, Michigan State University

Brown, Lewis M., Professor, Geology and Physics (1979-2012); BA 1965, Cornell College; MS 1967, University of Iowa; PhD 1973, University of New Mexico

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 (deceased)

Carlson, Arthur F., Associate Professor of Physics (1947-1970); BS 1935, University of Minnesota. (deceased)

Carlson, Delphine, Associate Professor of Mathematics (1947-1969); BA 1934, MA 1938, University of Michigan (deceased)

Campagna, Carol A., Associate Professor of Nursing (1984-2001); BSN 1964, D'Youville College; MSN 1969, University of Colorado

Castor, William N., Professor of Political Science (1971-1994); BA 1951,

Middlebury College; MA 1952, Columbia University; PhD 1975, University of Denver (deceased)

Chandra, Purna, Professor of Microbiology (1967-1994); BS 1949, MS 1951, Agra University; PhD 1958, Oregon State University (deceased)

Chelberg, Raymond R., Professor of Chemistry (1946-1970); BS 1926, Gustavus Adolphus College; MS 1931, University of Minnesota (deceased)

Cole, Wallace, Associate Professor of Mathematics (1955-1969); BS 1926, MA 1928, University of Wisconsin (deceased)

Conboy, Richard T., Professor, Political Science/Coordinator of the Center for Social Research (1988-2011); BA 1967, MPA 1969, University of Dayton; PhD 1984, The American University

Connaughton, M. Carole, Professor of Nursing (1984-1999); BSN 1956, Saint Mary's College; MSN 1967 and PhD 1974, Indiana University

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 (deceased)

Coullard, Collette R., Professor of Mathematics and Computer Science (2004-2018); BS 1980, Lake Superior State College; MS 1981, PhD 1985, Northwestern University

Cullen, John C., Professor of Spanish (1967-2001); BA 1963, MA 1965, Michigan State University; PhD 1973, Interamerican University (deceased)

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 (deceased)

Delaney-Lehman, Maureen J., Associate Professor/Librarian (1989-2009); BM 1975, Western Michigan University; MS 1980, Michigan State University; MLS 1988, University of Kentucky

Dobbertin, Leslie A., Professor of Sociology/Chair, Social Sciences (1972-2013); BA 1965, Central Michigan University; MA 1972, Iowa State University; PhD 1989, Michigan State University

Dorrity, Daniel T., Professor of History/Dean, College of Arts, Letters and Social Sciences (1970-2014); BA 1966, MA 1967, Wayne State University; PhD 1973, University of Michigan (deceased)

Duesing, Paul R., Professor of Mechanical Engineering (1984-2013); BSME 1971, MSME 1973, University of Michigan; Licensed professional engineer for Michigan and Ohio

Duesing, Sherilyn R., Associate Professor of Mathematics (1993-2013); AS 1971, North Central Michigan College; BS 1976, Central Michigan University; MS 1998, Northern Michigan University

Duwe, Arthur E., Professor of Biological Science (1968-1991); BS 1949, Alma

College; MS 1950, PhD 1953, Ohio State University (deceased)

Erkkila, John E., Professor of Business and Economics (1990-2009); BS 1970, Lake Superior State College; MA 1971, University of Windsor; PhD 1988, University of Western Ontario

Fabbri, Anthony J., Associate Professor of Computer Science (1996-2008); BA 1965, MS 1967, Indiana State University; EdD 1995, University of Louisville

Flynn, Michael, Professor of English (1961-1986); BA 1954, Central Michigan University; MA 1964, Northern Michigan University (deceased)

Francisco, Wayne H., Assistant Professor of Criminal Justice (1973-1983); BS 1950, Eastern Michigan University; MA 1967, MS 1971, Michigan State University (deceased)

Gaertner, Georgegeen P., Associate Professor of English (1965-2000); BA 1959, Michigan State University; MA 1963, University of Michigan (deceased)

Gaertner, Robert C., Associate Professor of Finance (1965-2000); BBA 1964, University of Notre Dame; MBA 1965, Michigan State University (deceased)

Gimpel-Kabke, Lynn M., Assistant Professor of Nursing (1992-2016); BSN 1989, Lake Superior State University; MSM 1994, Northern Michigan 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 (deceased)

Gleason, Gilbert J., Professor of Biology (1961-1988); BS 1958, MA 1960, Central Michigan University (deceased)

Gregory, H. Lorraine, Assistant Professor of Mathematics, Education (2003-2018); BSc 1972, BEd 1984, University of Saskatchewan; MEd 1997, EdD 2001, Duquesne University

Gutowski, Mieczyslaw, Associate Professor of Mathematics (1984-2004); MS 1965, University of Lodz, Poland; PhD 1973, University of Gdansk, Poland

Haag, William L., Professor of Chemistry (1984-2001); BS 1961, Loras College; MS 1965, PhD 1971, University of Nebraska

Halsey, Alice I., Associate Professor of Nursing (1963-2000), BSN 1962, University of Michigan; MSN 1977, Wayne State University

Harris, Earle B., Associate Professor of English (1976-1987); AB 1946, University of Michigan; BD 1947, ThM 1964, Princeton Theological Seminary (deceased)

Harrison, Galen H., Assistant Professor of Mathematics (1963-1996); BS 1960, MA 1963, Michigan Technological University

Heyns, Terry, Professor of Fire Science (1989-2015); AB 1965, Saint Louis University; MA 1967, University of Kansas; Ph.D. 1989, Kansas State University

Howe, Margaret, Associate Professor of Humanities (1969-1981); AB 1932, Northwestern University; MA 1965, Northern Michigan University (deceased)

Hudson, John S., Associate Professor of Accounting (1970-2002); BA 1963, MA

1965, Michigan State University; MBA 1967, Western Michigan University

Jemison, Eugene F., Associate Professor of Humanities (1969-1986); BA 1946, Washburn University; MFA 1948, Kansas City Art Institute (deceased)

Jennings, Richard P., Professor of Speech (1970-December 1998); BA 1950, University of Michigan; Master of Divinity 1953, Virginia Theological University; MA 1970, Central Michigan University (deceased)

Johnson, Gary R., Professor, Political Science (1978-2015); BA 1972, Augustana College; MA 1975, PhD 1979, University of Cincinnati

Jones, Charles W., Professor of Chemistry (1970-2001); AB 1954, Western State College of Colorado; MS 1957, PhD 1973, Oklahoma State University

Keller, Barbara J., Professor of Chemistry (1999-2020); BS 1977, BS 1978, Idaho State University; BS 1986 Idaho State University, Pocatello, Idaho; PhD 1995, Montana State University, Bozeman, Montana

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); Honorary Title "Dean Emeritus" of Lake Superior State University; BS 1949, Michigan Technological University (deceased)

Kennedy, Robert E., Associate Professor of Engineering (1948-1971); BS 1932, MS 1939, University of Michigan (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 (deceased)

Land, Roger, Assistant Professor of Fire Science (1996-2015); BS 1972, Brigham Young University; MS 1974, University of Utah

Lehman, John W., Professor of Chemistry (1966-2001); BS 1960, McPherson College; PhD 1969, University of Colorado

Linderoth, Leon W., Professor of English (1968-2000), BA/BS 1958, Central Michigan University; MA 1960 and PhD 1966, Florida State University (deceased)

Madden, James P., Professor, Criminal Justice, Fire Science and EMS (1984-2012); BA 1971, William Carey College; MS 1975, University of Southern Mississippi

Madl, John T., Associate Professor of Mechanical Engineering (1967-2002); BSME 1965, MSME 1967, Michigan Technological University

Marinoni, Ann B., Professor; Management, Marketing and Entrepreneurship (1976-2012); BS 1975, Lake Superior State College; MBA 1977, Central Michigan University; PhD 1992, Michigan 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 (deceased)

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 (deceased)

McDonald, David M., Professor of Engineering (1973-2017); BSEE 1969, MSEE 1971, Michigan Technological University

McPherson-Doyle, Debra, Associate Professor of Recreation Studies and Exercise Science (1976-2016); BS 1974, Northern Michigan University, MA 1983, Northern Michigan University

Meehan, Mary Jo, Assistant Professor/Counselor (1982-2019); BS 1977, MA 1981, Northern Michigan University

Mickewich, Thomas, Professor of Mathematics (1967-2002); BA 1964, MA 1967, University of Maine

Money, Robert M., Professor of History (1969-2010); BA 1953, Northern Michigan University; MA 1958, University of Michigan (deceased)

Moody, James, Professor of History (1971-2010), Instructor of History (2010-2017); BA 1959, Greenville College; MA 1960, Michigan State University (deceased)

Mullin, C. Randolph (Randy), Professor of Physics/Coordinator of the Planetarium (1969-2009); BS 1959, St. Vincent College; PhD 1964, University of Notre Dame

Neveu, Ruth, Assistant Professor/Librarian (1977-2016); BA 1977, Lake Superior State College, MA 1984, University of Michigan

Otis, Franklin F., Professor of Mathematics (1948-1978); B.Ed., River Falls State, 1937; MS 1948, Wisconsin (deceased)

Person, Steven J., Professor of Biology (1973-2004); B.S. 1966, MS 1968, Iowa State University; PhD 1976, University of Alaska (deceased)

Poisson, Joseph A., Associate Professor of Physical Education (1963-1976); SS 1940, Northern Michigan University; MA 1957, University of Michigan (deceased)

Ratwik, Susan H., Professor of Psychology (1977-2013); BA 1969, University of Minnesota; MS 1975, PhD 1978, University of Notre Dame

Reilly, Raymond, E., Professor of Biology and Chemistry, (1966-1990); BS 1951, MS 1951, MS 1963, PhD 1970, Michigan State University (deceased)

Samson, 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 (deceased)

Sawyer, Timothy J., Professor of Psychology (1976-1989); BA 1972, Northern Michigan University; MA 1974, PhD 1976, University of Nevada

Schirer, Thomas E., Professor, Humanities and Philosophy/Department Head, Arts and Letters (1984-2014); BA 1973, MA 1976, University of California; PhD 1983, Friedrich-Alexander-University

Schmitgal-Snyder, Linda, Professor of Management (1989-2015); BS 1982, Lake Superior State College; M.Ed. 1990, Central Michigan University; MBA 1993, Central Michigan University; Ed.D. 2010, Central Michigan University

Schoenemann, Shirley, Associate Professor of Education (1983-2012); BA 1966, Western Michigan University; MAT 1986, Oakland University

Schwiderson, Keith E., Assistant Professor, Engineering and Technology (1976-2011); BS 1979, Lake Superior State University; MS 1981, Northern Michigan University

Shannon, MaryAnne P., Associate Dean/Professor, Nursing (1988-2011); BSN 1975, University of Michigan; MSN 1979, Wayne State University; PhD 2005, Michigan State University; Advanced Practice Nurse, Board Certified in Gerontological Nursing since 1991

Sherman, Karl J., Associate Professor of Accounting (1971-2000); BS 1965, Northern Michigan University; MS 1967, Southern Illinois 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

Speer Kirkpatrick, Nancy, Professor of Biology (1995-2016), Academic Dean-Schools of Biological Sciences, Mathematics and Computer Science, and Physical Sciences (2015-2016); BS 1972, MS 1979, and Ph.D. 1993, Miami University

Stai, Deborah K., Professor, Biological Sciences (1991-2011); BS 1974, BS 1978, Mankato State University; MA 1980, PhD 1989, Union Institute (deceased)

Stough, Bessie, Associate Professor of Mathematics (1947-1963); BA 1923, MA 1929, University of Michigan (deceased)

Suggitt, Randall G., Assistant Professor of Mathematics and Computer Science (1983-2012); BS 1976, Lake Superior State College; MA 1979, University of Montana

Thesing, Gary L., Professor of Mathematics (1971-1999), BA 1969, Saint Mary of the Plains College; MS 1964, University of Notre Dame; EdD 1971, Oklahoma State University

Thomsen, Viggo, Associate Professor of Biological Sciences (1947-1973); BA 1932, University of Michigan (deceased)

Toffolo, E. Gary, Professor of Humanities (1970-2001); BS 1958, Northwestern University; MA 1961, University of Chicago

Truckey, John, Associate Professor of Counseling (1966-1986); BS 1958, MA

1964, Northern Michigan University (deceased)

Vialpando, Edeltraute, Professor of Foreign Languages (1967-1988); PhD 1944, Charles University, Prague, Czechoslovakia (deceased)

Ward, Louis R., Professor of English (1961-1981); BA 1939, MA 1940, University of Colorado; PhD 1959, Purdue University (deceased)

Weber, Charles L., Associate Professor of Electrical Engineering (1970-1999), BS 1964 and MSEE 1970, Michigan Technological University

Wilson, Paul W., Professor of Mathematics (1963-2000), BS 1962 and MA 1963, Central Michigan University

Youngs, Stephen P., Professor and Psychometrist (1947-1968); BS 1930, Northern Michigan University; MEd 1941, Colorado. (deceased)

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Emeriti Staff



Adams, Ray, Dean, College of Engineering and Mathematics; BS 1975, MS 1978, Nicholls State College

Arbuckle, Robert D., President, Professor of History (1992-2002); BS 1964, Clarion State University; MA 1966, PhD 1972, Penn State University

Bugbee, Thomas R., Vice President for Student Affairs/Secretary to the Board of Trustees; BA 1973, Michigan State University; MA 1974, Eastern Michigan University (deceased)

DePlonty, Stella R., Assistant to the Provost for Academic Records (1960-2011)

Fenlon, Paul T., Director of Employment Services; BS 1964, Western Michigan University

Harger, Bruce T., Vice President for Academic Affairs and Provost (1967-2007); BA 1966, MA 1967, PhD 1991, Michigan State University

Markstrom, Mae E., Dean of the School of Health and Human Services (1968-1997); Nursing Diploma 1959, Grace Hospital of Nursing; BA 1970, Lake Superior State University; MSN 1977, Wayne State University; PhD 1991, Michigan State University

McLain, Tony L., President (2009-2014); BS 1969, MA 1971, Western Michigan University; PhD 1986, Michigan State University

Michels, Fredrick A., Dean of Academic Services (1976-2011); BS, University of Wisconsin; MLS, EdD, Western Michigan University

Mitchell, Peter T., President (2017-2018); A.B. 1967, Albion College; MA 1968, University of Michigan; EdS 1972, Indiana University; EdD 1981, Northwestern University; LHD 2007, Albion College

Munsell, William T., Financial Aid Director (1967-1998)

Pike, Harry E., Vice President for Student Programs and Services (1969-1997); BA 1957, University of Washington; PhD 1969, Michigan State University

Tomlinson, Earl C., Director of Financial Planning and Investments (1972-1980; 1984-1997); BS, Ferris State College; MA, Central Michigan University

White, Beverly E., Director of Human Resources (1976-2011); BS, Lake Superior State College; MBA, Lake Superior State University

Youngblood, Betty J., President (2002-2007); BA 1965, Oakland University; MA 1966, PhD 1970, University of Minnesota

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Biology: Bachelor of Science



Program Description

The Bachelor of Science degree in biology combines theory and concepts of biology with intensive, hands-on experiences in our state-of-the-art laboratories and a wealth of close-by field sites. Students build on a core of biology classes by selecting the physiology and taxonomy classes and other electives that best fit their interests.

The program is an excellent preparation for biology or related careers. Our graduates are currently employed as doctors, dentists, veterinarians, biological researchers, laboratory technicians, consultants and teachers. Many careers in biology require education beyond the baccalaureate degree and LSSU's biology program has a proven record of excellent preparation for professional and graduate school.

Animal Biology concentration - In this program, you will study the physiology, nutrition, behavior, and health of animals, with focus on species that are economic resources or beloved companions. Includes instruction in molecular and cell biology, microbiology, nutrition and physiology, ecology and behavior, genetics and evolutionary biology, disease prevention, and applications to specific species and phyla. As an animal biology major, you'll have the chance to put your theoretical knowledge into practice by working with wild and domesticated animals in hands-on situations. It will prepare you for employment in laboratories, zoos, farms, or animal shelters.

Food and Ecology concentration - prepares students for specific careers or graduate studies in particular aspects of the food system. These careers range from technical, policy, outreach, and research work with federal, local and tribal government agencies; university research, food businesses; NGOs working to improve health and nutrition, advocacy groups, industry groups. The skills required for these careers thus range across a number of disciplines. This program provides the required basis in biological sciences and adds choices in other disciplines to let students tailor their program to their specific interests. Students interested in pursuing graduate school in the sciences should consider adding additional chemistry classes, including organic chemistry, to their schedule. The program requires that students complete an apprenticeship class with an organization working in an aspect of the food system and complete a senior project.

Pre-Medical concentration - prepares students for medical, dental, optometry, podiatry, chiropractic, and physician assistant graduate studies. Biology students will work with a pre-professional advisor to select the electives best suited for the health professional program of their choice while also providing a well-rounded biology education. This program has an embedded chemistry minor that meets the requirements of most U.S. medical schools. The LSSU Biology department is recognized by all health professional schools in Michigan as a top

rate biology program.

LSSU participates in the Michigan State University College of Human Medicine's Early Assurance Program. During their junior year, students who excel in the LSSU biology pre-medical program may apply to the College of Human Medicine, and selected students will be assured of admission and begin a relationship with MSU College of Human Medicine during their senior year of college.

Pre-Veterinary concentration - with an embedded chemistry minor, prepares students to enter veterinary college after graduation from LSSU. It was designed to meet the specific requirements for the Michigan State University-College of Veterinary Medicine, but our students go to vet schools all over the country, for example North Carolina State, Oklahoma State and University of Illinois. This program stresses not only academics, but also the animal care experience that is critical for gaining admission to a veterinary college.

Program Learning Outcomes:

Thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Effectively communicate the results or outcomes of a scientific investigation in multiple formats.

Engage in professional activities related to the study of biological sciences and practice good professional ethics.

Available degrees (see specific requirements further down the page):

- [Bachelor of Science Biology](#)
- [Bachelor of Science Biology, Animal Biology Concentration](#)
- [Bachelor of Science Biology, Food and Ecology Concentration](#)
- [Bachelor of Science Biology, Pre-Medical Concentration](#)
- [Bachelor of Science Biology, Pre-Veterinary Concentration](#)

Degree Requirements

Bachelor of Science Biology

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1

- [BIOL499](#) Senior Symposium 1

Focal Courses in Biology (7 - 8 credits)

Physiology Elective (1 course from)

- [BIOL315](#) Plant Physiology 4
- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Cell Biology 4

Taxonomy Elective (1 course from)

- [BIOL202](#) Field Botany 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [BIOL306](#) Mycology 3
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [NRES475](#) Aquatic Entomology 3

Biology Cognates (21 credits)

21 credits of any BIOL courses not used to satisfy one of the other requirements, or any NRES courses other than [NRES199](#), [NRES299](#), [NRES250](#), [NRES398](#), [NRES399](#), [NRES450](#), NRES490, [NRES495](#), or [NRES499](#). A minimum of 17 credits must be from 300/400 level courses. At least one elective must be a 400 level course.

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Science 4
- Physical Science (CHEM, PHYS, GEOL) course with lab 4

Free Electives - 16 - 19 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Animal Biology Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Animal Biology (20 credits)

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrae Anatomy 4
- [BIOL330](#) Animal Physiology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL420](#) Evolutionary Analyses 3
- [BIOL335](#) Animal Nutrition 3
- or**
- [BIOL426](#) Animal Disease and Zoonoses 3

Cognates (Choose 12 credits from)

Zoology:

- [NRES240](#) Natural History of Vertebrates 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [NRES475](#) Aquatic Entomology 3

or/and

Animal Health:

- [BIOL306](#) Mycology 3
- [BIOL423](#) Immunology* 4
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [CHEM353](#) Toxicology* 4

Support Courses (17 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3

Free Electives - 21 - 24 credits as needed to reach 124 total credits

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Requires [CHEM225](#) and [CHEM351](#)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Food and Ecology Concentration

Biology Foundation and Research Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Food Systems (12-13 credits)

- [BIOL307](#) US Food Systems 3
- [BIOL202](#) Plant Sciences: Identification and Diversity 3
- [BIOL235](#) Protected Horticulture 3
- [BIOL389](#) Apprenticeship in (Food Systems) 3-4

Speciality Cognates (6 - 11 credits)

Choose One Area:

Policy and Communications (select 3 classes - 9 credits)

- [POLI130](#) Intro to State and Local Government 3
- [POLI301](#) Policy Analysis and Evaluation 3
- [COMM302](#) Argumentation and Advocacy 3
- or**
- [COMM320](#) Public Relations 3

Production (11 credits)

- [BIOL232](#) Introduction to Aquaponics 4
- [BIOL306](#) Mycology 3
- [BIOL315](#) Plant Sciences: Structure and Function 4

Marketing (select 2 classes - 6 credits)

- [MRKT281](#) Introduction to Marketing 3
- [MRKT384](#) Social Media Marketing 3
- [MRKT386](#) Mobile Marketing 3

Analytics (select 3 classes - 8-9 credits)

- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [EVRN131](#) Introduction to GIS 3
- [EVRN225](#) Intermediate GIS 2
- [EVRN325](#) Geospatial Analysis 3

Support Courses (8 credits)*

- [CHEM115](#) General Chemistry 5
- [MATH111](#) College Algebra 3

Free Electives - credits as needed to reach 124 total credits.

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Students interested in science graduate programs should consult with their advisor regarding additional chemistry courses.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Medical Concentration

Biology Courses (34 credits)

- [BIOL121](#) Human Anatomy and Physiology I 4
- [BIOL122](#) Human Anatomy and Physiology II 4
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology* 4

- [BIOL421](#) Adv Cell & Molecular Biology* 4

Advanced Study - Select 17 credits from the following list:

- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL380](#) Hematology 4
- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [BIOL406](#) Immunohematology 3
- [BIOL422](#) Parasitology 3
- [BIOL423](#) Immunology 3
- [BIOL425](#) Virology 3
- [BIOL426](#) Animal Disease and Zoonosis 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL455](#) Body Fluids Analysis 3
- [BIOL480](#) Advanced Clinical Microbiology 4

Support Courses

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II
- [HLTH328](#) Multicultural Approaches to Health Care 3
- [PSYC101](#) Introduction to Psychological Science 3
- [SOCY101](#) Introduction to Sociology 4

Free Electives - 12 - 14 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Veterinary Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology* 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1

- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Seminar 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Adv Cell & Molecular Biology* 4

Taxonomy Elective (1 course from)

- [BIOL306](#) Mycology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3

Support Courses (37 credits)

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business/Life Science 4
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II 4

Advanced Study - Select 17 credits from the following list:

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL335](#) Animal Nutrition* 3
- [BIOL380](#) Hematology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL423](#) Immunology 4
- [BIOL426](#) Animal Disease and Zoonoses 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL480](#) Advanced Microbiology 4

*These courses required by MSU-CVM.

Free Electives - 9 - 11 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Chemistry: Bachelor of Science

Program Description

The Chemistry Program at Lake Superior State University is now accredited by the American Chemical Society (ACS). According to the 2011 National Occupational Employment and Wage Estimator, more people are employed as chemists and chemical technicians than in any other job classification in the life and physical science occupations (<http://stats.bls.gov>). With many free electives and a common general education core, a chemistry degree can also be used in combination with other majors or minors such as pre-professional (medicine, pharmacy, veterinary, law, etc.), engineering, business, biology, and many more to match student interest and career plans.

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

The LSSU chemistry program has been approved by the American Chemical Society, and may provide certified degrees in Chemistry, Forensic Chemistry, Biochemistry Pre-Professional, and Environmental Chemistry if a student chooses this track. In addition, the BS in Chemistry Secondary Education degree may also be certified by the ACS. Graduates completing the prescribed requirements are awarded an ACS certificate signifying their completion of the approved degree and can qualify for membership in the Society upon graduation.

American Chemical Society
Committee on Professional Training
155 Sixteenth Street, N.W.,
Washington, D.C. 20036

Program Learning Outcomes:

Demonstrate proficiency in the five Chemistry subdisciplines defined by the American Chemical Society, including analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry.

Demonstrate readiness for employment as a chemist, science technician, or chemical technician at the baccalaureate level or graduate and professional level study.

With the guidance of a faculty mentor, develop a well-designed, well-executed,

and clearly communicated research project that contributes to scientific knowledge in the field of Chemistry.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Chemistry](#)
- [Bachelor of Science Chemistry, Secondary Teaching](#)

Degree Requirements

Bachelor of Science Chemistry

Chemistry Degree Requirements (57 credits minimum)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM261](#) Inorganic Chemistry 4
- [CHEM310](#) Applied Spectroscopy 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introductory Biochemistry 4
- [CHEM361](#) Physical Chemistry I 4
- [CHEM362](#) Physical Chemistry II 3
- [CHEM363](#) Physical Chemistry Lab 1
- [CHEM395](#) Junior Seminar 1
- [CHEM461](#) Advanced Inorganic Chemistry 3
- [CHEM462](#) Advanced Inorganic Chemistry Lab 1
- [CHEM495](#) Senior Project 2
- [CHEM499](#) Senior Seminar 1
- CHEM/CCHM Electives 300 level or higher (3 cr min)

Support Courses (20-21 credits)

- [USEM101](#) University Seminar I: Foundation Success 1
- [BUSN211](#) Business Statistics 3
- **or**
- [MATH207](#) Principles of Statistical Methods 3
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- **or**
- [MATH112](#) Calculus for Business & Life Science I 4
- [EGNR140](#) Linear Algebra Num Meth Engineers 2
- [EGNR245](#) Calculus App for Technology 3
- Two semesters of college physics with laboratory (8 cr min)

General Electives (24 credits)

General Education: All LSSU bachelor's degree candidates must complete the

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of 2.00 is required in your General Education Requirements.

Bachelor of Science Chemistry, Secondary Teaching

Chemistry Requirements (44 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM261](#) Inorganic Chemistry 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introduction to Biochemistry 4
- [CHEM361](#) Physical Chemistry I 4
- [CHEM362](#) Physical Chemistry II 4
- [CHEM363](#) Physical Chemistry Lab 1
- [CHEM395](#) Junior Seminar 1
- [CHEM499](#) Senior Seminar 1

For American Chemical Society certified degree, additionally required (total lab hours must be at least 400 hours). See Department Chair for special rules regarding ACS certification:

- CHEM Elective 300 or higher (3 cr min)
- [CHEM495](#) Senior Project 2

Complete one methods course from the following:

- [EDUC443](#) Science Methods for Secondary Teachers 3 **or**
- [EDUC453](#) Directed Study in Science Methods 3

Support Courses (19 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [BUSN211](#) Business Statistics 3 **or**
- [MATH207](#) Principles of Statistical Methods 3
- [PHYS221](#) Principles of Physics I 4 **or**
- [PHYS231](#) Appl Phys Engineer/Scientist I 4
- [PHYS222](#) Principles of Physics II 4 **or**
- [PHYS232](#) Appl Phys Engineer/Scientist II 4

Professional Education Requirements and Education Cognates- see [Secondary Education](#).

Approved Teaching Minor Recommended - see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Secondary Education: Bachelor of Arts/Science

Program Description

The Secondary Education program is highlighted by in-depth study in a subject major and a subject minor, extended field experience in secondary school settings, and focused development of the knowledge and skills critical for effective teachers. The program leads to a bachelor of arts or a bachelor of science degree in the student's major area.

Secondary-level teacher certification in Michigan permits individuals to teach the subject areas, in which they hold endorsements, at grades 6-12. The subject majors and minors provide the required coursework for the related endorsements. Completing the coursework and passing the corresponding Michigan Test for Teacher Certification subject test enable graduates to meet the requirements of No Child Left Behind and to be highly qualified in their subject areas.

Subject major and minor options are listed below. Specific requirements for these are found in the appropriate sections of this catalog.

Majors	Minors
Chemistry	Chemistry
English Language and Literature	English Language and Literature
Integrated Science	Mathematics
Mathematics	
Social Science	

Students begin their studies in the secondary education program with a focus on general education requirements, an academic major and an academic minor. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major and minor, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or the fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification subject test in the major must be passed prior to beginning student teaching.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional

strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Secondary Education: Bachelor of Arts/Sciences programs are:

Academic Major: Choose one from the above (see requirements under the subject area in this catalog)

Optional Academic Minor: Choose one from list above (see requirements in the Minors section of this catalog)

Professional Education Sequence (35 credits)

- [EDUC250](#) Student Diversity & Schools 4
- [EDUC301](#) Learning Theory and Teaching Practice 3
- [EDSE301](#) Introduction to Special Education 3
- [EDUC350](#) Integrating Technology into 21st Century Learning Environments 3
- [EDUC415](#) General Instructional Methods 2
- [EDUC440](#) Reading in the Content Area 3
- EDUC44X or EDUC45X Methods in major and in minor (minimum credits) 3
- [EDUC460](#) Classroom Management 2
- [EDUC480](#) Directed Teaching: Seminar 2
- [EDUC492](#) Directed Teaching 10

Education Cognates (4 credits)

- [EDUC101](#) Self as Learner 1
- [MATH207](#) Principles of Statistical Methods 3

Formal admission to the program, qualification for student teaching, and successful completion of the program requires the following:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher
- Completion of all required courses in the education cognates, teaching major and teaching minor with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Secondary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); FREN151-FREN152 or FREN251-FREN252; or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Conservation Biology: Bachelor of Science

Program Description

The BS in Conservation Biology prepares students for careers whose goal is to solve a wide range of environmental challenges such as invasive species, altered landscapes, species extinctions, or the restoration of degraded aquatic and terrestrial ecosystems. Our selection of rigorous field based courses in watersheds, soils, forestry, ecology (general, fish, wildlife or plant), and organisms (mammalogy, ornithology, ichthyology, or entomology) offers a strong set of foundational courses in the natural sciences. Combining this coursework with interdisciplinary courses and GIS technology adds the breadth needed to formulate sustainable solutions to local, regional and global conservation challenges. Electives allow students to tailor the program to their interests and career goals. Students may choose as a capstone experience, a summer semester internship working in a professional capacity in conservation biology or a senior thesis research project. Students will be prepared for careers or for graduate work in conservation biology or a broad range of related areas.

The Human Dimensions Concentration prepares students for careers in global, national and community conservation advocacy programs including environmental outreach and policy development and communication. This multi-disciplinary program combines a strong core in the biological sciences with classes in geographic information science, communications, business and economics, and political science. The program is flexible, allowing students to select classes that best match their educational and career goals. Students conclude their program by completing a conservation related service learning project for a conservation organization, unit of government, or business (e.g., land conservancies, Michigan Department of Environmental Quality, watershed organizations, zoos and aquariums).

Program Learning Outcomes:

Foundation: Students in the Conservation Biology program will thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation or experiential learning project.

Capstone Project - Capstone project: Students in the Conservation Biology program will design and conduct a scientific investigation or experiential learning project (ELP) using appropriate tools and techniques in order to demonstrate skill in the practice of conservation biology.

Communication and outreach - Students in the Conservation Biology program will effectively communicate the results or outcomes of their independent project in multiple formats.

Professionalism - Students in the Conservation Biology program will engage in professional activities related to the study, conservation, or management of natural resources.

Post-graduation - careers and further education - Graduates of the Conservation Biology

program will go on to careers in conservation biology or proceed to graduate school to further their education.

Available degrees (see specific degree requirements further down on page):

- [Bachelor of Science Conservation Biology](#)
- [Bachelor of Science Conservation Biology, Human Dimensions Concentration](#)

Degree Requirements

Bachelor of Science Conservation Biology

Departmental Requirements

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [NRES230](#) Introduction to Soil Science 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES284](#) Principles of Forest Conservation 4
- [NRES286](#) Principles of Watersheds 3
- [NRES287](#) Conservation Biology 3
- [NRES299](#) Sophomore Seminar 1
- [NRES304](#) The Human Environment 3
- [BIOL337](#) General Ecology 3
- [BIOL420](#) Evolutionary Analysis 3
- [NRES470](#) Restoration Ecology 3
- [NRES499](#) Senior Capstone 1

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [EVRN131](#) Introduction to GIS and GPS 3
- [EVRN225](#) Intermediate GIS 3
- [EVRN311](#) Environmental Law 3
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Science 4

Global Perspective - Select 1 course from:

- [ECON307](#) Environmental Economics 3
- [SOCY227](#) Population and Ecology 3
- [POLI342](#) International Environmental Policy 3
- Study Abroad 3+

Internship Option

- [NRES398](#) Planning Experiential Learning Project 1
- [NRES497](#) Internship in Conservation Biology 3

or

Research Option

- [NRES399](#) Research Project Design 1
- [NRES495](#) Senior Project 2

Free Electives to total 124 credits. At least 6 elective credits must be from courses at the 300 level or higher.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Conservation Biology, Human Dimensions Concentration

Departmental Requirements

- [BIOL131](#) General Biology I 4
- [BIOL132](#) General Biology II 4
- [NRES199](#) Freshman Seminar 1
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [NRES230](#) Introduction to Soil Science 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES284](#) Principles of Forest Conservation 4
- [NRES286](#) Principles of Watersheds 3
- [NRES287](#) Conservation Biology 3
- [NRES299](#) Sophomore Seminar 1
- [NRES304](#) The Human Environment 3
- [BIOL337](#) General Ecology 3
- [BIOL420](#) Evolutionary Analysis 3
- [NRES470](#) Restoration Ecology 3
- [NRES499](#) Senior Capstone 1

Support Courses

- [CHEM115](#) General Chemistry I 5
- [EVRN131](#) Introduction to GIS and GPS 3
- [EVRN225](#) Intermediate GIS 3

- [EVRN311](#) Environmental Law 3
- [MATH111](#) College Algebra 3

Marketing & Management* - 1 course from:

- [MGMT360](#) Management Concepts & Applications 3
- [MRKT281](#) Marketing Principles & Strategies 3
- [MRKT385](#) Services Marketing 3

Political Science* - 1 course from:

- [POLI130](#) Introduction State & local Government 4
- [POLI201](#) Public Administration 3

Communication* - 1 course from:

- [COMM280](#) Understanding Mass Media 3
- [COMM302](#) Argumentation & Advocacy 3
- [COMM320](#) Public Relations 4
- [COMM416](#) Communication in Leadership 3

Global Perspective* - 1 course from:

- [ECON307](#) Environmental Economics 3
- [SOCY227](#) Population and Ecology 3
- [POLI342](#) International Environmental Policy 3
- Study Abroad 3+

***At least 2 of the designated electives must be 300 or 400 level**

Internship Option

- [NRES398](#) Planning Experiential Learning Project 1
- [NRES497](#) Internship in Conservation Biology 3

or

Research Option

- [NRES399](#) Research Project Design 1
- [NRES495](#) Senior Project 2

Free Electives to total 124 credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Secondary Education: Bachelor of Arts/Science

Program Description

The Secondary Education program is highlighted by in-depth study in a subject major and a subject minor, extended field experience in secondary school settings, and focused development of the knowledge and skills critical for effective teachers. The program leads to a bachelor of arts or a bachelor of science degree in the student's major area.

Secondary-level teacher certification in Michigan permits individuals to teach the subject areas, in which they hold endorsements, at grades 6-12. The subject majors and minors provide the required coursework for the related endorsements. Completing the coursework and passing the corresponding Michigan Test for Teacher Certification subject test enable graduates to meet the requirements of No Child Left Behind and to be highly qualified in their subject areas.

Subject major and minor options are listed below. Specific requirements for these are found in the appropriate sections of this catalog.

Majors	Minors
Chemistry	Chemistry
English Language and Literature	English Language and Literature
Integrated Science	Mathematics
Mathematics	
Social Science	

Students begin their studies in the secondary education program with a focus on general education requirements, an academic major and an academic minor. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major and minor, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or the fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification subject test in the major must be passed prior to beginning student teaching.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional

strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Secondary Education: Bachelor of Arts/Sciences programs are:

Academic Major: Choose one from the above (see requirements under the subject area in this catalog)

Optional Academic Minor: Choose one from list above (see requirements in the Minors section of this catalog)

Professional Education Sequence (35 credits)

- [EDUC250](#) Student Diversity & Schools 4
- [EDUC301](#) Learning Theory and Teaching Practice 3
- [EDSE301](#) Introduction to Special Education 3
- [EDUC350](#) Integrating Technology into 21st Century Learning Environments 3
- [EDUC415](#) General Instructional Methods 2
- [EDUC440](#) Reading in the Content Area 3
- EDUC44X or EDUC45X Methods in major and in minor (minimum credits) 3
- [EDUC460](#) Classroom Management 2
- [EDUC480](#) Directed Teaching: Seminar 2
- [EDUC492](#) Directed Teaching 10

Education Cognates (4 credits)

- [EDUC101](#) Self as Learner 1
- [MATH207](#) Principles of Statistical Methods 3

Formal admission to the program, qualification for student teaching, and successful completion of the program requires the following:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher
- Completion of all required courses in the education cognates, teaching major and teaching minor with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Secondary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); FREN151-FREN152 or FREN251-FREN252; or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Fisheries and Wildlife Management: Bachelor of Science

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.

Program Learning Outcomes:

Scientific Literature - Students in the Fisheries and Wildlife Management program will thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Scientific Investigation - Students in the Fisheries and Wildlife Management program will design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Communication - Students in the Fisheries and Wildlife Management program will effectively communicate the results or outcomes of their scientific investigation in multiple formats.

External Validity - Graduates of the Fisheries and Wildlife Management concentrations will be prepared to meet certification requirements of the American Fisheries Society or The Wildlife Society.

Professionalism - Graduates of the Fisheries and Wildlife Management program will have developed and demonstrate a sense of professionalism/work ethic.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Fisheries and Wildlife Management](#)
- [Bachelor of Science Fisheries and Wildlife Management, Conservation Officer Concentration](#)
- [Bachelor of Science Fisheries and Wildlife Management, Fisheries Management Concentration](#)
- [Bachelor of Science Fisheries and Wildlife Management, Wildlife Management Concentration](#)

Degree Requirements

Bachelor of Science Fisheries and Wildlife Management

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
 - [BIOL132](#) General Biology II: Organisms 4
 - [NRES199](#) Freshman Seminar 1
 - [BIOL202](#) Plant Sciences I: Identification and Diversity 3
- or**
- [NRES284](#) Forestry 4
 - [NRES203](#) Fundamentals of Natural Resources 3
 - [BIOL220](#) Genetics 4
 - [BIOL243](#) Vertebrate Anatomy 4
- or**
- [BIOL330](#) Animal Physiology 4
 - [NRES250](#) Quantitative Biology 3
 - [BIOL280](#) Biometrics 3
 - [NRES299](#) Sophomore Seminar 1
 - [NRES310](#) Ichthyology 3
 - [NRES311](#) Mammology 3
 - [NRES312](#) Ornithology 3
 - [NRES333](#) Fish Ecology 3
 - [BIOL337](#) General Ecology 3
 - [NRES339](#) Wildlife Ecology 3
 - [NRES345](#) Limnology 3
 - [NRES399](#) Research Project Design 1
 - [NRES432](#) Fisheries Management 3
 - [NRES439](#) Wildlife Management 3
 - [NRES495](#) Senior Project 2
 - [NRES499](#) Senior Capstone 1
 - NRES or BIOL Electives 3

Support Courses

- [CHEM115](#) General Chemistry I 5
 - [CHEM116](#) General Chemistry II 5
 - [CHEM208](#) Survey of Organic Chemistry with Biological Apps 4
- or**
- [PHYS221](#) Principles of Physics I 4
 - [EVRN131](#) Introduction to GIS and GPS 2
 - [MATH111](#) College Algebra 3
 - [MATH112](#) Calculus for Business & Life Sciences 4

Free Electives - 10-11 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Conservation Officer Concentration

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
- [BIOL132](#) General Biology II: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [BIOL202](#) Plant Sciences I: Identification and Diversity 3
- **or**
- [NRES284](#) Principles of Forestry 4
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES299](#) Sophomore Seminar 1
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- **or**
- [NRES312](#) Ornithology 3
- [NRES333](#) Fish Ecology 3
- [BIOL337](#) General Ecology 3
- [NRES339](#) Wildlife Ecology 3
- [NRES345](#) Limnology 3
- [NRES399](#) Research Project Design 1
- [NRES432](#) Fisheries Management 3
- [NRES439](#) Wildlife Management 3
- [NRES495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [EVRN131](#) Introduction to GIS and GPS 2
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Sciences 4

Conservation Officer Concentration Requirements (18 - 21 credits)

- [CJUS101](#) Introduction Criminal Justice 3
- [CJUS102](#) Police Process 3
- [CJUS197](#) Physical Fitness for Public Safety 1
- [CJUS201](#) Firearms Training 1
- [CJUS313](#) Crisis Intervention 3
- **or**
- [CJUS321](#) Ethical Issues 3
- [PSYC101](#) Introduction to Psychology 4
- [SOCY101](#) Introduction to Sociology 4
- **or**
- [SOCY102](#) Social Problems 4
- [COMM225](#) Interpersonal Communication 3

Free Electives to total 125 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Fisheries Management Concentration

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
- [BIOL132](#) General Biology II: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [BIOL243](#) Vertebrate Anatomy 4
- **or**
- [BIOL330](#) Animal Physiology 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES299](#) Sophomore Seminar 1
- [NRES310](#) Ichthyology 3
- [NRES333](#) Fish Ecology 3
- [BIOL337](#) General Ecology 3
- [NRES345](#) Limnology 3
- [NRES372](#) Freshwater Fish Culture 3
- [NRES399](#) Research Project Design 1
- [NRES432](#) Fisheries Management 3
- [NRES475](#) Aquatic Entomology 3
- [NRES495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1
- NRES or BIOL Electives 8

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM208](#) Survey of Organic Chemistry with Biological Apps 4
- **or**
- [PHYS221](#) Principles of Physics I 4
- [EVRN131](#) Introduction to GIS and GPS 2
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Sciences 4

Human Dimensions - 3 credits from:

- [ECON307](#) Environmental Economics 3

- [EVRN311](#) Environmental Law 3
- [NRES304](#) The Human Environment 3
- [POLI342](#) International Environmental Policy 3

Free Electives - 12 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Wildlife Management Concentration

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
- [BIOL132](#) General Biology II: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [BIOL202](#) Plant Sciences I: Identification and Diversity 3
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [BIOL243](#) Vertebrate Anatomy 4
- **or**
- [BIOL330](#) Animal Physiology 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES284](#) Principles of Forestry 4
- [NRES299](#) Sophomore Seminar 1
- [NRES311](#) Mammology 3
- [NRES312](#) Ornithology 3
- [BIOL337](#) General Ecology 3
- [NRES339](#) Wildlife Ecology 3
- [NRES399](#) Research Project Design 1
- [NRES439](#) Wildlife Management 3
- [NRES495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1
- NRES or BIOL Electives 3

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [EVRN131](#) Introduction to GIS and GPS 2
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Sciences 4

Physical Science* - 3-4 credits from:

- [NRES230](#) Introduction to Soil Science 4

- [NRES286](#) Principles of Watersheds 3
- [PHYS221](#) Principles of Physics I 4

Policy/Admin/Law - 9 credits from:

- [NRES287](#) Conservation Biology 3
- [ECON307](#) Environmental Economics 3
- [EVRN311](#) Environmental Law 3
- [NRES304](#) The Human Environment 3
- [POLI342](#) International Environmental Policy 3

Free Electives - 10 credits

*Students considering graduate school should select [PHYS221](#)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Geology: Bachelor of Science



Program Description

Geology examines the dynamic Earth and its physical, chemical and biologic history. It involves the study of changes that are taking and have taken place and the forces that cause these changes. For example, geologists interpret the movements of the continents over geologic time and the formation of mountains, volcanoes and other features of the Earth's surface. Geologists attempt to understand our physical environment from which we derive most of the natural resources essential to civilization. They investigate the processes that led to the formation of mineral deposits, and oil, gas and coal. They also study environmental change throughout the history of the Earth and how those changes and the development of life are related. Geologists attempt to predict natural disasters such as earthquakes, volcanic eruptions, and landslides, and they are very active in modeling groundwater flow to develop water reserves for municipalities and to protect groundwater from contamination. Geologists study the natural world and apply their knowledge to achieve harmony between the human race and its environment.

Program Learning Outcomes:

Knowledge & Professional Skills: The Geology graduate will demonstrate 1. theoretical and practical knowledge of geologic principles; 2. Teamwork, 3. Professional behavior, 4. communication skills

Readiness for Graduate Study and/or Employment: The Geology graduate will demonstrate readiness graduate school or for geoscience employment such as: an environmental geologist, public sector geoscientist, mud logger, geophysicist, mine geologist, exploration geologist, science technician, etc.

Scholarship: The university supports scholarship where undergraduate students have the opportunity to engage in geoscience research, often publishable, working with faculty mentors.

Technical Skills: The Geology graduate will solve geologic problems by demonstrating competence conducting field and laboratory studies; 2. creating and interpreting geoscience maps and cross sections, 3. analyzing geologic data sets and software and/or technology.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Geology](#)
- [Bachelor of Science Geology, Environmental Geology Concentration](#)
- [Bachelor of Science Geology, Water and Climate Concentration](#)

Degree Requirements

Bachelor of Science Geology

Geology Course Requirements (51 credits)

- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL308](#) Structural Geology Systems 5
- [GEOL315](#) Geoenvironmental Systems 5
- [GEOL322](#) Geochemical Systems 4
- [GEOL334](#) Hydrologic Systems Surface & Ground Water 4
- [GEOL355](#) Stratigraphy and Sedimentation 4
- [GEOL380](#) Introduction to Field Geology 3
- [GEOL431](#) Geophysical Systems 5
- [GEOL440](#) Technology in Geology 2
- [GEOL450](#) Geology Seminar I 2
- [GEOL451](#) Geology Seminar II 2
- [GEOL468](#) Tectonic Systems 5
- [GEOL480](#) Advanced Field Geology 3

Support Courses (27-28 credits)

- [NRES199](#) Freshman Seminar 1
- [CHEM115](#) General Chemistry I 5
- [PHYS221](#) Principles of Physics I* 4
- **or**
- [PHYS231](#) Applied Physics Engineer/Scientist I 4
- [CHEM116](#) General Chemistry II 5
- **or**
- [PHYS222](#) Principles of Physics II* 4
- **or**
- [PHYS232](#) Applied Physics Engineer/Scientist II 4
- [EVRN131](#) Introduction to GIS/GPS 3
- [MATH111](#) College Algebra* 3
- [MATH112](#) Calculus for Business and Life Sciences* 4
- **or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Principles of Statistical Methods 3
- **or**
- [MATH308](#) Probability and Mathematical Statistics 3
- **or**
- [BUSN211](#) Business Statistics 3
- **or**
- [BIOL280](#) Biostatistics 3

*Students with adequate preparation in mathematics or are considering graduate school are advised to take [MATH151](#) and [MATH152](#) and [PHYS231](#) and [PHYS232](#) and [CHEM115](#) and [CHEM116](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Environmental Geology Concentration

Geology Course Requirements (42 credits)

- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL308](#) Structural Geology Systems 5
- [GEOL315](#) Geoenvironmental Systems 4
- [GEOL322](#) Geochemical Systems 4
- [GEOL334](#) Hydrologic Systems 4
- [GEOL380](#) Introduction to Field Geology 3
- [GEOL431](#) Geophysical Systems 4
- [GEOL440](#) Technology in Geology 2
- [GEOL450](#) Geology Seminar I 2
- [GEOL451](#) Geology Seminar II 2
- [GEOL480](#) Advanced Field Geology 3

Support Courses (42 credits)

- [NRES199](#) Freshman Seminar 1
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [PHYS221](#) Principles of Physics I* 4
- or**
- [PHYS231](#) Applied Physics Engineer/Scientist I 4
- [EVRN131](#) Introduction to GIS/GPS 3
- [EVRN311](#) Environmental Law 3
- [EVRN341](#) Fate & Transport Environment 4
- [NSCI103](#) Environmental Science 3
- [NRES230](#) Introduction to Soil Science 4
- [MATH111](#) College Algebra* 3
- [MATH112](#) Calculus for Business and Life Sciences* 4
- or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Principles of Statistical Methods 3
- or**
- [MATH308](#) Probability and Mathematical Statistics 3
- or**
- [BUSN211](#) Business Statistics 3
- or**
- [BIOL280](#) Biostatistics 3

Distributed Electives (16 credits minimum)

- [CHEM208](#) Survey Organic Chemistry/Biol Apps 4
- [CHEM225](#) Organic Chemistry I 4

- [CHEM231](#) Quantitative Analysis 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [ECON307](#) Environmental Economics 3
- [EVRN211](#) Field Data Methods 1
- [EVRN225](#) Intermediate GIS 3
- [EVRN315](#) Human Impacts on Environment 4
- [EVRN317](#) Environmental Health Apps 4
- [EVRN325](#) Geospatial Analysis 3
- [EVRN365](#) Applied Geospatial Technologies 4
- [EVRN389](#) Environmental Research Methods 3
- [NRES399](#) Research Project Design 1
- [EVRN435](#) Environmental Systems 3
- [EVRN495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1
- [FIRE312](#) Hazardous Material Management 4
- [GEOG108](#) Meteorology & Climatology 4
- [GEOL355](#) Stratigraphy and Sedimentation 4
- [GEOL490](#) Research Topics in Geology 1-4
- [GEOL495](#) Senior Project 2
- [POLI342](#) International Environmental Policy 3

*Students with adequate preparation in mathematics and/or interested in graduate school are advised to take [MATH151](#) and [MATH152](#) and [PHYS231](#) and [PHYS232](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Water and Climate Concentration Geology Course Requirements (39 credits)

- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL308](#) Structural Geology Systems 5
- [GEOL315](#) Geoenvironmental Systems 4
- [GEOL322](#) Geochemical Systems 4
- [GEOL334](#) Hydrologic Systems 4
- [GEOL380](#) Introduction to Field Geology 3
- [GEOL431](#) Geophysical Systems 4
- [GEOL440](#) Technology in Geology 2
- [GEOL450](#) Geology Seminar I 2
- [GEOL451](#) Geology Seminar II 2

Support Courses (38-39 credits)

- [NRES199](#) Freshman Seminar 1
- [CHEM115](#) General Chemistry I 5
- [PHYS221](#) Principles of Physics I* 4
- **or**
- [PHYS231](#) Applied Physics Engineer/Scientist I 4
- [CHEM116](#) General Chemistry II 5
- **or**
- [PHYS222](#) Principles of Physics II* 4
- **or**
- [PHYS232](#) Applied Physics Engineer/Scientist II 4
- [EVRN131](#) Introduction to GIS/GPS 3
- [EVRN389](#) Environmental Research Methods 3
- [GEOG108](#) Meteorology & Climatology 4
- [NSCI116](#) Introduction to Oceanography 4
- [NRES286](#) Principles of Watersheds 3
- [MATH111](#) College Algebra* 3
- [MATH112](#) Calculus for Business and Life Sciences* 4
- **or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Principles of Statistical Methods 3
- **or**
- [MATH308](#) Probability and Mathematical Statistics 3
- **or**
- [BUSN211](#) Business Statistics 3
- **or**
- [BIOL280](#) Biostatistics 3

Distributed Electives (10 credits minimum)

- [EVRN211](#) Field Data Methods 1
- [EVRN225](#) Intermediate GIS 3
- [EVRN325](#) Geospatial Analysis 3
- [EVRN311](#) Environmental Law 3
- [EVRN315](#) Human Impacts on Environment 4
- [EVRN365](#) Applied Geospatial Technologies 4
- [EVRN341](#) Fate and Transport Environment 4
- [EVRN495](#) Senior Project 2
- [GEOL355](#) Stratigraphy and Sedimentation 4
- [GEOL480](#) Advanced Field Geology 3
- [GEOL495](#) Senior Research 2
- [GEOL490](#) Research Topics in Geology 1-4
- [NSCI103](#) Environmental Science 3
- [NRES230](#) Introduction to Soil Science 4
- [NRES284](#) Principles of Forest Conservation 4
- [NRES345](#) Limnology 4
- [NRES399](#) Research Project Design 1
- [NRES499](#) Senior Capstone 1

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher

is also required in your Major, as well as in your General Education Requirements.

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Elementary Education: Bachelor of Arts/Science



Program Description

The Elementary Education program is highlighted by in-depth study in a subject major, subject concentration, or student-focused concentration, extended field experience in elementary school settings; and focused development of the knowledge and skills critical for effective teachers.

Elementary-level teacher certification in Michigan permits individuals to teach in self-contained classrooms at grade K - 8, and in all subjects at grades K - 5. Individuals may also qualify to teach the subjects of their academic major or minors in grades 6 - 8.

Students begin their studies with a focus on general education requirements, and an academic major or specific concentration. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major or concentration, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification Elementary Education tests must be passed prior to beginning student teaching.

Note: Candidates who pass the Michigan Test for Teacher Certification in their major or concentration meet the requirements of the No Child Left Behind Act and are considered "highly qualified" for the subject areas of the endorsements shown on their Michigan teaching certificates.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Elementary Education Bachelor of Arts/Sciences are:

Teaching Concentration - Students may complete one of the following options:

- **Academic Concentration:** Major in either Language Arts or Mathematics (see requirements in this catalog for these teaching majors)

or

- **Language Arts and Mathematics Concentration** (see requirements listed below)

or

- **Early Childhood Education Concentration** (see requirements listed below)

Language Arts and Mathematics Concentration (25 credits)

- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- [ENGL320](#) Responding to Writing 3
- [THEA112](#) Acting for Beginners 3
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH321](#) History of Mathematics 3
- [MATH112](#) Calculus for Business & Life Sciences 4

or

- [MATH151](#) Calculus I 4

Early Childhood Education Concentration (28 credits)

- [CHLD150](#) Observation and Assessment 4
- [CHLD210](#) Infants and Toddlers 4
- [CHLD225](#) Emergent Literacy 3
- [CHLD245](#) Early Childhood Curriculum 3
- [CHLD270](#) Administration of Early Childhood Programs 2
- [CHLD310](#) Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- [CHLD440](#) Family and Community Partnerships 3
- [CHLD480](#) Directed Teaching Seminar 1
- [CHLD492](#) Directed Teaching : Early Childhood 5

Elementary Planned Program (49 credits)

- [MATH103](#) Number Systems & Problem Solving 4
- [MATH104](#) Geometry & Measurement 4
- [MATH207](#) Principles of Statistical Methods 3
- [BIOL104](#) Survey of General Biology 4
- [NSCI101](#) Great Lakes Region: Chem, Phy, and other Laws of Nature 4
- [NSCI102](#) Great Lakes Region: Geology and Resources 4
- [POLI110](#) American Government 4
- [GEOG201](#) World Regional Geography 4
- [HIST131](#) United States History I 4
- [HIST321](#) History of Michigan 2
- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL222](#) English Grammar & Language in Context 3
- [ENGL335](#) Children's Literature in the Classroom 3
- [CHLD225](#) Emergent Literacy 3

Professional Education Sequence (48 credits)

- [EDUC101](#) Self as Learner 1
- [EDUC250](#) Student Diversity & Schools 4
- [EDUC301](#) Learning Theory and Teaching Practice 3
- [EDUC330](#) Reading in the Elementary Classroom 3
- [EDUC350](#) Integrating Technology into 21st Learning Environments 3
- [EDSE301](#) Introduction to Special Education 3
- [EDUC410](#) Corrective Reading in the Classroom 3
- [EDUC411](#) Elementary Language Arts and Methods Across the Curriculum 2
- [EDUC415](#) General Instructional Methods 2
- [EDUC420](#) Math Methods for Elementary Teachers 2
- [EDUC421](#) Science Methods for Elementary Teachers 2
- [EDUC422](#) Social Studies Methods for Elementary Teachers 2
- [EDUC423](#) Arts Methods for Classroom Teachers 2
- [EDUC424](#) Health/Physical Education Methods for Classroom Teachers 2
- [EDUC460](#) Classroom Management 2
- [EDUC480](#) Directed Teaching Seminar 2
- [EDUC492](#) Directed Teaching 10

Formal admission to the Elementary Education program, qualification for student teaching, and successful completion of the program requires:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher.
- Completion of all required courses in the teaching major or concentration with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the elementary planned program with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Elementary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program

approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Mathematics: Bachelor of Science

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 concentration 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 Certification:

A completion of professional education coursework, including a semester of student teaching, prepares students for elementary or secondary teacher certification in Michigan and Ontario.

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.

Program Learning Outcomes (BS Mathematics):

Develop and clearly express mathematical concepts in written and oral communication. (*Communication*)

Use computing, gather evidence, discover patterns, create models, experiment with data, and solve theoretical or applied problems. (*Problem Solving*)

Use symbolic, analytical and quantitative skills and formal mathematical tools and techniques to analyze problems, synthesize solutions, and write proofs. (*Analysis*)

Apply mathematical methodologies and adhere to ethical and professional standards in their senior capstone project. (*Professional Responsibility*)

Program Learning Outcomes (BS Mathematics, Elementary Teaching):

Use mathematical processes, axiomatic systems, computing, algorithms, and logical reasoning to solve problems and communicate mathematical ideas. (*Mathematical Processes and Number Concepts*)

Describe, analyze and generalize patterns, algebraic relationships and functions using the tools of algebra and calculus. (*Patterns, Algebraic Relationships and Functions*)

Apply geometric principles in Euclidean, analytic, transformational and vector geometry to analyze geometric objects, form conjectures, solve problems and prove theorems. (*Measurement and Geometry*)

Organize, analyze and interpret data, sets and relations using the tools of statistics, probability and discrete mathematics. (*Data Analysis, Statistics, Probability, and Discrete Mathematics*)

Make instructional choices that reflect the integrated nature of mathematical concepts and mathematical practices within and among the mathematical domains. (*Instructional Choices*)

Program Learning Outcomes (BS Mathematics, Secondary Teaching)

Use mathematical processes, axiomatic systems, computing, algorithms, and logical reasoning to solve problems and communicate mathematical ideas. (*Mathematical Processes and Number Concepts*)

Describe, analyze, and generalize patterns, algebraic relationships and functions using the tools of algebra and calculus. (*Patterns, Algebraic Relationships, and Functions*)

Apply geometric principles in Euclidean, analytic, transformational and vector geometry to analyze geometric objects, form conjectures, solve problems and prove theorems. (*Measurement and Geometry*)

Organize, analyze and interpret data, sets and relations using the tools of statistics, probability and discrete mathematics. (*Data Analysis, Statistics, Probability, and Discrete Mathematics*)

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Mathematics](#)
- [Bachelor of Science Mathematics, Elementary Teaching](#)
- [Bachelor of Science Mathematics, Secondary Teaching](#)
- [Bachelor of Science Mathematics, Actuarial and Business Applications Concentration](#)

Degree Requirements

Bachelor of Science Mathematics

Departmental Requirements: (55 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH216](#) Discrete Mathematics and Problem Solving 3
- [MATH305](#) Linear Algebra 3
- [MATH308](#) Probability and Mathematical Statistics 3
- [MATH309](#) Applied Statistics 4
- [MATH310](#) Differential Equations 3
- [MATH341](#) Abstract Algebra I 3
- [MATH351](#) Graph Theory 3
- [MATH401](#) Mathematical Modeling 3
- [MATH411](#) Advanced Calculus 3
- [MATH490](#) Research Topics in Mathematics 3
- Additional MATH course numbered above [MATH216](#) 3-4

Other Requirements (14 credits)

- [CSCI103](#) Survey of Computer Science 3
- [CSCI105](#) Intro to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [PHYS231](#) Applied Physics for Engineers and Scientists I 4

Free Electives or Academic Minor (32-36 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Mathematics, Elementary Teaching

In this program, students 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 [Elementary Education section of this catalog](#).

The program also includes general education requirements and a professional education sequence. Students complete their initial teacher education courses in their sophomore year, and then apply for formal admission to the Teacher Education Program.

Degree Requirements:

Mathematics Requirements (37 credits)

- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI106](#) Web Page Design and Development 3
- [MATH103](#) Number Systems and Problem Solving 4
- [MATH104](#) Geometry & Measurement 4
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH207](#) Principles of Statistical Methods 3
- [MATH215](#) Fundamental Concepts of Math 3
- [MATH305](#) Linear Algebra 3
- [MATH321](#) History of Mathematics 3
- [MATH325](#) College Geometry 3

For information regarding the Professional Education Sequence and Elementary Planned Program, see [Elementary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Bachelor of Science Mathematics, Secondary Teaching

In this program, students will complete a major in mathematics tailored to the needs of a secondary teacher. Computer science courses are included, and students work extensively with computer and calculator technology as it applies to classroom teaching.

This program also includes general education requirements and a professional education sequence. Students complete their initial teacher education courses in their sophomore year and then apply for formal admission to the Teacher Education Program.

Graduates earn a bachelor's degree, which includes a semester of student teaching, in order to become certified to teach.

Degree Requirements:

Mathematics Requirements (42 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH207](#) Principles of Statistical Methods 3
- [MATH215](#) Fundamental Concepts of Math 3
- [MATH216](#) Discrete Mathematics and Problem Solving 3
- [MATH251](#) Calculus III 4
- [MATH305](#) Linear Algebra 3
- [MATH310](#) Differential Equations 3
- [MATH321](#) History of Mathematics 3
- [MATH325](#) College Geometry 3

- [MATH341](#) Abstract Algebra I 3
- [MATH401](#) Mathematical Modeling 3

Complete one methods course from the following:

- [EDUC442](#) Math Methods Secondary Teacher 3
- [EDUC452](#) Directed Study Math Methods Secondary Teacher3

Cognate

- [CSCI105](#) Intro. to Computer Programming 3
- or
- [CSCI121](#) Prin. of Computer Programming 4

Professional Education Sequence and Education Cognates- see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Bachelor of Science Mathematics, Actuarial and Business Applications Concentration

Departmental Requirements: (52 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH216](#) Discrete Mathematics and Problem Solving 3
- [MATH305](#) Linear Algebra 3
- [MATH308](#) Probability and Mathematical Statistics 3
- [MATH309](#) Applied Statistics 4
- [MATH310](#) Differential Equations 3
- [MATH341](#) Abstract Algebra I 3
- [MATH351](#) Graph Theory 3
- [MATH401](#) Mathematical Modeling 3
- [MATH411](#) Advanced Calculus 3
- [MATH490](#) Research Topics in Mathematics 3

Cognates (17 credits)

- [CSCI103](#) Survey of Computer Science 3
- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [ECON201](#) Principles of Macroeconomics 3
- [FINC341](#) Managerial Finance 4

A student choosing this emphasis will complete a minor in accounting-finance (24 credits).

Free Electives (11-15 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Elementary Education: Bachelor of Arts/Science



Program Description

The Elementary Education program is highlighted by in-depth study in a subject major, subject concentration, or student-focused concentration, extended field experience in elementary school settings; and focused development of the knowledge and skills critical for effective teachers.

Elementary-level teacher certification in Michigan permits individuals to teach in self-contained classrooms at grade K - 8, and in all subjects at grades K - 5. Individuals may also qualify to teach the subjects of their academic major or minors in grades 6 - 8.

Students begin their studies with a focus on general education requirements, and an academic major or specific concentration. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major or concentration, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification Elementary Education tests must be passed prior to beginning student teaching.

Note: Candidates who pass the Michigan Test for Teacher Certification in their major or concentration meet the requirements of the No Child Left Behind Act and are considered "highly qualified" for the subject areas of the endorsements shown on their Michigan teaching certificates.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Elementary Education Bachelor of Arts/Sciences are:

Teaching Concentration - Students may complete one of the following options:

- **Academic Concentration:** Major in either Language Arts or Mathematics (see requirements in this catalog for these teaching majors)

or

- **Language Arts and Mathematics Concentration** (see requirements listed below)

or

- **Early Childhood Education Concentration** (see requirements listed below)

Language Arts and Mathematics Concentration (25 credits)

- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- [ENGL320](#) Responding to Writing 3
- [THEA112](#) Acting for Beginners 3
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH321](#) History of Mathematics 3
- [MATH112](#) Calculus for Business & Life Sciences 4

or

- [MATH151](#) Calculus I 4

Early Childhood Education Concentration (28 credits)

- [CHLD150](#) Observation and Assessment 4
- [CHLD210](#) Infants and Toddlers 4
- [CHLD225](#) Emergent Literacy 3
- [CHLD245](#) Early Childhood Curriculum 3
- [CHLD270](#) Administration of Early Childhood Programs 2
- [CHLD310](#) Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- [CHLD440](#) Family and Community Partnerships 3
- [CHLD480](#) Directed Teaching Seminar 1
- [CHLD492](#) Directed Teaching : Early Childhood 5

Elementary Planned Program (49 credits)

- [MATH103](#) Number Systems & Problem Solving 4
- [MATH104](#) Geometry & Measurement 4
- [MATH207](#) Principles of Statistical Methods 3
- [BIOL104](#) Survey of General Biology 4
- [NSCI101](#) Great Lakes Region: Chem, Phy, and other Laws of Nature 4
- [NSCI102](#) Great Lakes Region: Geology and Resources 4
- [POLI110](#) American Government 4
- [GEOG201](#) World Regional Geography 4
- [HIST131](#) United States History I 4
- [HIST321](#) History of Michigan 2
- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL222](#) English Grammar & Language in Context 3
- [ENGL335](#) Children's Literature in the Classroom 3
- [CHLD225](#) Emergent Literacy 3

Professional Education Sequence (48 credits)

- [EDUC101](#) Self as Learner 1
- [EDUC250](#) Student Diversity & Schools 4
- [EDUC301](#) Learning Theory and Teaching Practice 3
- [EDUC330](#) Reading in the Elementary Classroom 3
- [EDUC350](#) Integrating Technology into 21st Learning Environments 3
- [EDSE301](#) Introduction to Special Education 3
- [EDUC410](#) Corrective Reading in the Classroom 3
- [EDUC411](#) Elementary Language Arts and Methods Across the Curriculum 2
- [EDUC415](#) General Instructional Methods 2
- [EDUC420](#) Math Methods for Elementary Teachers 2
- [EDUC421](#) Science Methods for Elementary Teachers 2
- [EDUC422](#) Social Studies Methods for Elementary Teachers 2
- [EDUC423](#) Arts Methods for Classroom Teachers 2
- [EDUC424](#) Health/Physical Education Methods for Classroom Teachers 2
- [EDUC460](#) Classroom Management 2
- [EDUC480](#) Directed Teaching Seminar 2
- [EDUC492](#) Directed Teaching 10

Formal admission to the Elementary Education program, qualification for student teaching, and successful completion of the program requires:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher.
- Completion of all required courses in the teaching major or concentration with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the elementary planned program with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Elementary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program

approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Medical Laboratory Science: Bachelor of Science



Program Description

Program is Not accepting new students

The Bachelor of Science Medical Laboratory Science has two available degree concentrations: Medical Laboratory Science, Clinical Concentration and Medical Laboratory Science, Academic Concentration.

Medical laboratory scientists (clinical laboratory scientists, medical technologists) perform most of the clinical tests conducted in hospital, veterinary, state, and health laboratories. Most institutions employing medical laboratory scientists require them to be board-certificated by the American Society for Clinical Pathology (ASCP). (Some institutions also accept certification through the American Medical Technologists (AMT).) The Medical Laboratory Science, Clinical Concentration and the Medical Laboratory Science, Academic Concentration degrees are two alternative routes to obtaining ASCP certification. The Academic Concentration is also excellent preparation for graduate school in many biomedical-related fields.

The Academic Concentration is designed to result in a Bachelor of Science degree in four years. When you finish the Academic Concentration you will receive a Bachelor of Science in Medical Laboratory Science, but you will not be eligible to take the ASCP Board of Certification exam. In order to become eligible to take the certification exam, you must first be accepted into, and complete, a six- to twelve-month clinical experience at an independent hospital-based MLS program that is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). LSSU cannot guarantee acceptance into any of the hospital-based programs.

The Clinical Concentration is designed to be completed in four and a half years. When you finish the Clinical Concentration you will receive a Bachelor of Science in Medical Laboratory Science and you will be eligible to take the ASCP Board of Certification exam. The last six months of the Clinical Concentration consist of a clinical experience at one of our partner hospital labs (our Clinical Affiliates). Because our Clinical Affiliates can accommodate only a limited number of students each year, *admission into the Clinical Concentration is by competitive application in the spring of your junior year.*

Program Learning Outcomes:

Recall fundamental principles of each discipline used in the medical laboratory.

Given the necessary data, draw accurate conclusions about the quality of a clinical laboratory test and suggest appropriate action.

Given a set of clinical laboratory data, draw accurate conclusions about the health of the patient and suggest a correct course of action.

Safely and accurately perform basic medical laboratory test procedures.

Use the scientific method to formulate and test hypotheses.

Communicate clearly in writing.

Exhibit professional behavior and attitudes.

After completing a clinical internship at an appropriate medical institution, obtain a passing score on the Board of Certification exam for Medical Laboratory Scientists.

Available degrees (See specific degree requirements further down the page):

- [Medical Laboratory Science, Academic Concentration](#)
- [Medical Laboratory Science, Clinical Concentration](#)

Degree Requirements

Medical Laboratory Science, Academic Concentration

Departmental Requirements

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshmen Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL206](#) Medical Laboratory Practices 2
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL306](#) Mycology 3
- [BIOL330](#) Animal Physiology 4
- [BIOL337](#) General Ecology 3
- [BIOL380](#) Hematology 4
- [BIOL399](#) Planning Research Project 1
- [BIOL406](#) Immunohematology 3
- [BIOL422](#) Parasitology 3
- [BIOL423](#) Immunology 4
- [BIOL455](#) Body Fluids Analysis 4
- [BIOL480](#) Advanced Clinical Microbiology 4
- [BIOL499](#) Senior Symposium 1

Directed Elective: Choose one of:

- [BIOL425](#) Virology 3
- [BIOL433](#) Histology 3

- [CHEM326](#) Organic Chemistry II 4

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introductory Biochemistry 4
- [MATH111](#) College Algebra 3
- [MATH207](#) Principles of Statistical Methods 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Medical Laboratory Science, Clinical Concentration

The degree in Medical laboratory science includes the following courses in order to qualify to take the national registry examinations.

Departmental Requirements

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshmen Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL206](#) Medical Laboratory Practices 2
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL306](#) Mycology 3
- [BIOL330](#) Animal Physiology 4
- [BIOL380](#) Hematology 4
- [BIOL399](#) Planning Research Project 1
- [BIOL406](#) Immunohematology 3
- [BIOL422](#) Parasitology 3
- [BIOL423](#) Immunology 4
- [BIOL455](#) Body Fluids Analysis 4
- [BIOL460](#) Clinical Internship 12*
- [BIOL480](#) Advanced Clinical Microbiology 4
- [BIOL499](#) Senior Symposium 1

Directed Elective: Choose one of:

- [BIOL425](#) Virology 3
- [BIOL433](#) Histology 3
- [CHEM326](#) Organic Chemistry II 4

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introductory Biochemistry 4
- [MATH111](#) College Algebra 3
- [MATH207](#) Principles of Statistical Methods 3

*The clinical internship will add an additional six months to the time required to earn this degree.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 135 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Nursing: Bachelor of Science

Program Description

Professional nursing blends a unique body of knowledge from the sciences, social sciences and humanities with a compassionate heart and a sensitive spirit to provide holistic care to those in need.

The School of Nursing offers two curricular tracks to the bachelor of science degree in nursing; the four-year, pre-licensure program and the two-year, completion program for the registered nurse. The programs provide you with the opportunity to acquire knowledge, values and skills necessary for the practice of professional nursing.

Course requirements provide liberal backgrounds in physical science, social science and humanities. This curriculum provides a solid basis for the variety of roles in nursing practice. The nursing curriculum provides an interdisciplinary major and, therefore, does not require a minor to meet graduation requirements. These nursing programs are approved by the Michigan Board of Nursing and the BSN program is accredited by the Commission on Collegiate Nursing Education.

*One Dupont Circle, NW Suite 530
Washington, DC 20036
Telephone: (202) 887-6791
Fax: (202) 887-8476*

Mission Statement:

To graduate competent students who are able to safely provide compassionate nursing care utilizing theory and evidence based practice.

Program Learning Outcomes:

Liberal Education for Baccalaureate Generalist Nursing Practice: Appraises a solid base in liberal education for nursing practice.

Basic Organizational and System Leadership for Quality Care and Patient Safety: Synthesizes knowledge and skills in leadership, quality Improvement, and patient safety to provide quality health care.

Scholarship for Evidence-Based Practice: Evaluates research for potential application for evidence-based practice.

Information Management and Application of Patient Care Technology: Designs knowledge and skills in information management and patient care technology in the delivery of quality patient care.

Health Care Policy, Finance, and Regulatory Environments: Analyzes health care policies, including financial and regulatory, directly and indirectly influencing the nature and functioning of the healthcare system.

Inter-professional Communication and Collaboration for Improving Patient Health Outcomes: Appraises communication and collaboration among health care professionals and patients to deliver high quality and safe patient care.

Clinical Prevention and Population Health: Determines health promotion and disease prevention at the individual and population health levels.

Professionalism and Professional Values: Emulates professionalism and inherent values of altruism, autonomy, human dignity, integrity, and social justice.

Baccalaureate Generalist Nursing Practice: Synthesizes nursing practice with patients, individuals, families, groups, communities, and populations across the lifespan and across the continuum of healthcare environments and the variations of care, the increased complexity, and the increased use of health care resources inherent in caring for patients.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Nursing](#)
- [Bachelor of Science Nursing, Post-Licensure Completion Program, Completion Program for RN Students](#)

Degree Requirements

Bachelor of Science Nursing, Pre-Licensure Program

Pre-Nursing Entrance Requirements:

To qualify as a pre-nursing major, applicants must satisfy University admission requirements described in the admission section of the Catalog.

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 School of Nursing for admission to the nursing major. Admission is based upon 1) completing a current application in its entirety by the deadline of each semester, 2) successful completion of selected pre-nursing courses, 3) academic achievement, 4) a negative criminal background report, 5) ability to meet physical demands of program with or without accommodation 6) completion of TEAS test with passing score, and 7) verification of CPR training.

It is recommended that students be able to demonstrate computer literacy — basic word processing, library and Internet searches. Mathematics competency is required prior to the sophomore year. Entrance into nursing requires a grade point average of 2.7 or above in core pre-nursing and nursing courses. A maximum of 28 students will be accepted for each fall and spring semester. Canadian Immigration Service may deny a visa for clinical in Ontario on the basis of a conviction for a crime or for substance abuse.

Required academic courses are separated into three groups:

1. Nursing support courses - anatomy and physiology, microbiology, applied chemistry, mathematics, psychology, sociology, nutrition, pharmacology, pathophysiology, informatics in the health sciences, multicultural approach to health care and statistics).
2. General education requirements (English, humanities and speech).
3. Nursing courses

Progression Requirements in Nursing:

A grade of C or above is required in all courses. A grade of D in other general education or elective courses is accepted.

Transfer credit will be granted on an individual basis. Only those courses with a grade of C or better are transferable. Credits for Anatomy & Physiology courses and pharmacology are transferable for five years.

Time requirement for program completion is four academic years; however, completion may require more than four years for students who cannot maintain the high credit load each semester. Progression and readmission policies are detailed in the Nursing Student Handbook.

Students are responsible for transportation to and from clinical agencies, as well as all additional costs incurred by enrollment in the nursing program. Costs, academic and general information are listed in the Nursing Student Handbook and viewable on-line.

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.). There may be differences in testing in other states and provincial jurisdictions. 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 School of Nursing dean and direct questions to the Michigan Board of Nursing and the Immigration Service prior to considering entry in the program.

Nursing (61 credits)

- [NURS211](#) Intro. to Professional Nursing 3
- [NURS212](#) Health Appraisal 4
- [NURS213](#) Fundamentals of Nursing 6
- [NURS325](#) Nursing of Childbearing Families 5
- [NURS326](#) Nursing of Children & Families 5
- [NURS327](#) Adult Nursing I 8
- [HLTH328](#) Multicultural Approaches to Health Care 3
- [NURS431](#) Adult Nursing II 8
- [NURS432](#) Nursing of Populations 5
- [NURS433](#) Community Mental Health Nursing 5
- [NURS434](#) Nursing Research 3
- [NURS435](#) Management in Nursing 4
- [NURS436](#) Nursing Issues 2

Support Courses (44 credits)

- [BIOL121](#) Human Anatomy & Physiology I* 4
- [BIOL122](#) Human Anatomy & Physiology II* 4
- [BIOL223](#) Clinical Microbiology 3
- [CHEM108](#) Applied Chemistry * 3
- [CHEM110](#) Applied Organic & Biochemistry 4
- [HLTH208](#) Principles of Human Nutrition 3
- [HLTH209](#) Pharmacology 3
- [HLTH232](#) Pathophysiology 3
- [HLTH235](#) Healthcare Informatics 2
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC101](#) Introduction to Psychology* 4
- [PSYC155](#) Lifespan Development* 3
- [SOCY101](#) Introduction to Sociology* 4
- [USEM101](#) University Seminar I: Foundation Success 1

**Prerequisite courses for entrance to the program.*

General Electives (5 - 6 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Nursing, Post-Licensure Completion Program, Completion Program for RN Students

No applications are being accepted at this time for this degree

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 minimum cumulative grade point average of 2.7 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 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. Credit by departmental exam is also available to students upon request.

Required Admission Credentials:

Submit to Admissions Office: standard LSSU Application for Admission; transcripts from previous nursing school(s) and college(s). Submit to School of Nursing: copy of current Michigan or Ontario professional nursing license and immunization records. All credentials must be on file preceding semester of entry.

Transfer Credits:

Transfer credits may be granted on an individual basis for equivalent general education and support courses. Only those courses with a grade of C or better may be transferred. A maximum of 32 semester hours credit in basic nursing courses may be transferred. Credit for pharmacology courses is acceptable for five years.

The expectation is that completion of this program will take no more than two years.

Progression and readmission policies are detailed in the Nursing Student Handbook.

Students are responsible for transportation to clinical agencies and all 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 and Escanaba. For further course information contact the main campus School of Nursing at 906-635-2288.

Nursing (61 credits)

- [NURS325](#) Nursing of Childbearing Families 5
- [NURS326](#) Nursing of Children & Families 5
- [NURS327](#) Adult Nursing I 8
- [NURS328](#) Multicultural Approach to Health Care 3
- [NURS352](#) Health Issues of Aging Populations 3
- [NURS360](#) Professional Nursing Concepts 4
- [NURS363](#) Individual/Family Assessment 5
- [NURS431](#) Adult Nursing II 8
- [NURS432](#) Nursing of Populations 5
- [NURS433](#) Community Mental Health Nursing 5
- [NURS434](#) Nursing Research 3
- [NURS435](#) Management in Nursing 4
- [NURS437](#) Nursing Leadership and Issues 3

Health Sciences (11 credits)

- [HLTH208](#) Principles of Human Nutrition* 3
- [HLTH209](#) Pharmacology* 3
- [HLTH232](#) Pathophysiology 3
- [HLTH235](#) Healthcare Informatics 2

Other Disciplines (28 credits)

- [BIOL121](#) Human Anatomy & Physiology I* 4
- [BIOL122](#) Human Anatomy & Physiology* 4

- [BIOL223](#) Clinical Microbiology* 3
- [CHEM108](#) Applied Chemistry* 3
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC101](#) Introduction to Psychology* 4
- [PSYC155](#) Lifespan Development* 3
- [SOCY101](#) Introduction to Sociology* 4

**Prerequisite courses for entrance to the program.*

General Electives

**Credit by departmental exam (or NLN examination, passing at a 50 percentile or higher) is also available to students upon request. For further information, contact the main campus School of Nursing at 906-635-2288.*

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Political Science: Bachelor of Arts/Science

Program Description

Political science is the systematic study of government, politics and public policy. It is one of a number of liberal arts majors that prepare students for a broad range of career opportunities.

Political science majors choose one of four tracks or concentrations: general political science, pre-law, public administration or historical and comparative politics. 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.

Program Learning Outcomes:

Critical Thinking: Students will demonstrate the ability to think critically and analytically about politics.

Communication: Students will communicate effectively, both orally and in writing, about political issues and theories.

World View: Students will discuss and analyze the world and contemporary political issues from perspectives other than their own.

Think Globally: Students will demonstrate the ability to think globally.

Analysis: Students will analyze domestic and international political events and behaviors through the use of political theories and concepts.

Available degrees (see specific degree requirements further down the page):

[Bachelor of Arts/Science Political Science-General](#)

[Bachelor of Arts/Science Political Science-Pre-Law](#)

[Bachelor of Science Political Science-Public Administration](#)

Degree Requirements

Bachelor of Arts/Science Political Science--General

The general political science concentration is designed to provide a broad education in political science. It is most appropriate for students who plan to attend graduate school in political science and for those with an interest in government and politics who wish to get a broad, liberal education. 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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
- **or**
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2

A minimum of one course in each of three political science fields, and two courses in one of the fields:

- American Politics ([POLI301](#), [POLI325](#), [POLI367](#), [POLI467](#)) 3-4
- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Additional political science electives to reach 40 credits.

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

General Political Science Cognates

- [COMM302](#) Argumentation and Advocacy 3
- **or**
- [COMM320](#) Public Relations 4
- [ECON201](#) Principles of Macroeconomics 3
- [ENGL306](#) Technical Writing 3
- **or**
- [ENGL221](#) Creative Writing 3
- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [PHIL205](#) Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would

be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); FREN151-FREN152 or FREN251-FREN252 or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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

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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
or
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI120](#) Introduction to Legal Processes 3
- [POLI130](#) Introduction to State and Local Government 4
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI222](#) Introduction to the Legal Profession 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [POLI467](#) Constitutional Law and Civil Liberties 4

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

- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Additional political science electives to reach 42 credits

A minimum of 21 credits must be at the 300/400 level. (At least nine of these credits must be at the 400 level.)

Pre-Law Cognates

- [ACTG132](#) Principles of Accounting I 4
- [COMM302](#) Argumentation and Advocacy 3
- [ENGL306](#) Technical Writing 3
or
- [ENGL221](#) Creative Writing 3

- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [LAWS102](#) Legal Research and Case Analysis 3
- [LAWS202](#) Legal Writing and Analysis 3
- [PHIL205](#) Logic 3

Two law courses in different disciplines from the following:

- [BUSN350](#) Business Law I 3
- [BUSN355](#) Business Law II 3
- [CJUS250](#) Correctional Law 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS409](#) Procedural Criminal Law 3
- [EVRN311](#) Environmental Law 3
- [INTB375](#) International Business Law 3
- [MGMT451](#) Labor Law 4
- [POLI301](#) Policy Analysis and Evaluation 3
- [POLI342](#) International Environmental Policy 3
- [POLI499](#) Political Science/Public Administration Internship 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Political Science--Public Administration

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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
- **or**
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI130](#) Introduction to State and Local Government 4
- [POLI201](#) Introduction to Public Administration 3

- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI301](#) Policy Analysis and Evaluation 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI401](#) Principles of Public Administration 3
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [POLI499](#) Public Administration Internship 3

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

- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Public Administration Cognates

- [ACTG132](#) Principles of Accounting I 4
- [COMM302](#) Argumentation and Advocacy 3
- **or**
- [COMM320](#) Public Relations 4
- [ECON201](#) Principles of Macroeconomics 3
- [ECON305](#) Public Finance 3
- [ENGL306](#) Technical Writing 3
- **or**
- [ENGL221](#) Creative Writing 3
- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [MGMT360](#) Management Concepts & Applications 3
- [MGMT365](#) Human Resource Management 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Arts/Science Political Science--Historical and Comparative Politics

The historical and comparative politics concentration is designed to provide a broad education in these areas of political science. It is most appropriate for students who plan to attend graduate school in political science or history and for those with an interest in working in the international community. 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 and History Courses

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4

or

- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [HIST101](#) History of World Civilization I 4
- [HIST102](#) History of World Civilization II 4

Area Studies-Europe:

- [HIST315](#) Europe Napoleon World War I 4
- or**
- [HIST316](#) Europe in the 20th Century 4
 - [POLI331](#) Comparative Politics of Europe 4

Issue Studies-International Relations:

- [HIST250](#) The Atlantic World 3
- [POLI241](#) Introduction to International Relations 4

Issue Studies-US Foreign Policy:

- [HIST441](#) History American Foreign Policy 1776-1950 3
- [POLI411](#) U.S. Foreign Policy 3

Additional political science or history electives to reach 40 credits. A minimum of 21 credits must be at the 300/400 level, with at least nine of these at the 400 level.

General Political Science Cognates

- [COMM302](#) Argumentation and Advocacy 3
- or**
- [COMM320](#) Public Relations 4
 - [ECON201](#) Principles of Macroeconomics 3
 - [ENGL306](#) Technical Writing 3
- or**
- [ENGL221](#) Creative Writing 3
 - [PHIL205](#) Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Political Science: Bachelor of Arts/Science

Program Description

Political science is the systematic study of government, politics and public policy. It is one of a number of liberal arts majors that prepare students for a broad range of career opportunities.

Political science majors choose one of four tracks or concentrations: general political science, pre-law, public administration or historical and comparative politics. 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.

Program Learning Outcomes:

Critical Thinking: Students will demonstrate the ability to think critically and analytically about politics.

Communication: Students will communicate effectively, both orally and in writing, about political issues and theories.

World View: Students will discuss and analyze the world and contemporary political issues from perspectives other than their own.

Think Globally: Students will demonstrate the ability to think globally.

Analysis: Students will analyze domestic and international political events and behaviors through the use of political theories and concepts.

Available degrees (see specific degree requirements further down the page):

[Bachelor of Arts/Science Political Science-General](#)

[Bachelor of Arts/Science Political Science-Pre-Law](#)

[Bachelor of Science Political Science-Public Administration](#)

Degree Requirements

Bachelor of Arts/Science Political Science--General

The general political science concentration is designed to provide a broad education in political science. It is most appropriate for students who plan to attend graduate school in political science and for those with an interest in government and politics who wish to get a broad, liberal education. 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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
- **or**
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2

A minimum of one course in each of three political science fields, and two courses in one of the fields:

- American Politics ([POLI301](#), [POLI325](#), [POLI367](#), [POLI467](#)) 3-4
- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Additional political science electives to reach 40 credits.

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

General Political Science Cognates

- [COMM302](#) Argumentation and Advocacy 3
- **or**
- [COMM320](#) Public Relations 4
- [ECON201](#) Principles of Macroeconomics 3
- [ENGL306](#) Technical Writing 3
- **or**
- [ENGL221](#) Creative Writing 3
- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [PHIL205](#) Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would

be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); FREN151-FREN152 or FREN251-FREN252 or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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

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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
or
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI120](#) Introduction to Legal Processes 3
- [POLI130](#) Introduction to State and Local Government 4
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI222](#) Introduction to the Legal Profession 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [POLI467](#) Constitutional Law and Civil Liberties 4

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

- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Additional political science electives to reach 42 credits

A minimum of 21 credits must be at the 300/400 level. (At least nine of these credits must be at the 400 level.)

Pre-Law Cognates

- [ACTG132](#) Principles of Accounting I 4
- [COMM302](#) Argumentation and Advocacy 3
- [ENGL306](#) Technical Writing 3
or
- [ENGL221](#) Creative Writing 3

- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [LAWS102](#) Legal Research and Case Analysis 3
- [LAWS202](#) Legal Writing and Analysis 3
- [PHIL205](#) Logic 3

Two law courses in different disciplines from the following:

- [BUSN350](#) Business Law I 3
- [BUSN355](#) Business Law II 3
- [CJUS250](#) Correctional Law 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS409](#) Procedural Criminal Law 3
- [EVRN311](#) Environmental Law 3
- [INTB375](#) International Business Law 3
- [MGMT451](#) Labor Law 4
- [POLI301](#) Policy Analysis and Evaluation 3
- [POLI342](#) International Environmental Policy 3
- [POLI499](#) Political Science/Public Administration Internship 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Political Science--Public Administration

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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
- **or**
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI130](#) Introduction to State and Local Government 4
- [POLI201](#) Introduction to Public Administration 3

- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI301](#) Policy Analysis and Evaluation 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI401](#) Principles of Public Administration 3
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [POLI499](#) Public Administration Internship 3

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

- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Public Administration Cognates

- [ACTG132](#) Principles of Accounting I 4
- [COMM302](#) Argumentation and Advocacy 3
- **or**
- [COMM320](#) Public Relations 4
- [ECON201](#) Principles of Macroeconomics 3
- [ECON305](#) Public Finance 3
- [ENGL306](#) Technical Writing 3
- **or**
- [ENGL221](#) Creative Writing 3
- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [MGMT360](#) Management Concepts & Applications 3
- [MGMT365](#) Human Resource Management 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Arts/Science Political Science--Historical and Comparative Politics

The historical and comparative politics concentration is designed to provide a broad education in these areas of political science. It is most appropriate for students who plan to attend graduate school in political science or history and for those with an interest in working in the international community. 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 and History Courses

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4

or

- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [HIST101](#) History of World Civilization I 4
- [HIST102](#) History of World Civilization II 4

Area Studies-Europe:

- [HIST315](#) Europe Napoleon World War I 4
- or**
- [HIST316](#) Europe in the 20th Century 4
 - [POLI331](#) Comparative Politics of Europe 4

Issue Studies-International Relations:

- [HIST250](#) The Atlantic World 3
- [POLI241](#) Introduction to International Relations 4

Issue Studies-US Foreign Policy:

- [HIST441](#) History American Foreign Policy 1776-1950 3
- [POLI411](#) U.S. Foreign Policy 3

Additional political science or history electives to reach 40 credits. A minimum of 21 credits must be at the 300/400 level, with at least nine of these at the 400 level.

General Political Science Cognates

- [COMM302](#) Argumentation and Advocacy 3
- or**
- [COMM320](#) Public Relations 4
 - [ECON201](#) Principles of Macroeconomics 3
 - [ENGL306](#) Technical Writing 3
- or**
- [ENGL221](#) Creative Writing 3
 - [PHIL205](#) Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Psychology: Bachelor of Arts/Science



Program Description

Psychology is the scientific study of behavior and mental processes in humans and animals. This degree provides students with the knowledge and skills for a wide variety of careers.

Grounded in the American Psychological Association's Guidelines for the Undergraduate Major: Version 2.0, this comprehensive four-year program emphasizing research, experimentation, computer applications and a senior-research sequence is excellent preparation for graduate work at the master's or Ph.D. level in a wide variety of psychology disciplines.

Upon successful completion of the Junior Seminar in Psychological Science (PSYC399), psychology majors may elect to continue in the Psychology - Psychological Science concentration or switch to the Psychology - General Psychology concentration.

Other Qualifications — A master's degree in psychology is usually the minimum requirement for careers in school psychology, I/O psychology, mental health counseling, marriage and family counseling, forensic psychology, and data collection/analysis. 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.

Program Learning Outcomes:

Goal 1: Knowledge Base in Psychology - Students should demonstrate fundamental knowledge and comprehension of the major concepts, theoretical perspectives, historical trends, and empirical findings to discuss how psychological principles apply to behavioral problems.

Goal 2: Scientific Inquiry and Critical Thinking - The skills in this domain involve the development of scientific reasoning and problem solving, including effective research methods.

Goal 3: Ethical and Social Responsibility in a Diverse World - The skills in this domain involve the development of ethically and socially responsible behaviors for professional and personal settings in a landscape that involves increasing diversity.

Goal 4: Communication - Students should demonstrate competence in writing and in oral and interpersonal communication skills.

Goal 5: Professional Development - The emphasis of this goal is on application of psychology-specific content and skills, effective self-reflection, project-management skills, teamwork skills, and career preparation.

Degree Requirements

Bachelor of Arts/Science Psychology, Psychological Science Concentration

Required Psychology Core Courses (27 credits)

- [PSYC101](#) Introduction to Psychological Science 3
- [PSYC199](#) Freshman Seminar in Behavioral Science 2
- [PSYC210](#) Statistics 3
- [PSYC212](#) Experimental Psychology 4
- [PSYC396](#) Tests and Measurements 3
- [PSYC399](#) Junior Seminar in Psychological Science 3
- [PSYC456](#) History & Systems of Psychology 3
- [PSYC494](#) Senior Research Practicum I 2
- [PSYC495](#) Senior Research Practicum II 3
- [PSYC499](#) Senior Seminar in Psychological Science 1

Elective Psychology Courses (18 credits)

Select One Course from each Content Area:

Biological

- [PSYC459](#) Behavioral Neuroscience 4

Cognitive

- [PSYC311](#) Learning and Motivation 4
- [PSYC457](#) Cognition 4

Personality/Social

- [PSYC217](#) Social Psychology 3
- [PSYC357](#) Personality Theory 3

Developmental/Applied

- [PSYC155](#) Lifespan Development 3
- [PSYC240](#) Behavior Management 3
- [PSYC259](#) Abnormal Psychology 3
- [PSYC301](#) Exceptional Child and Adolescent 3
- [PSYC385](#) Health Psychology 3

Practicum Experience

- [PSYC305](#) Psychology Research Practicum 3
- [PSYC306](#) Applied Psychology Practicum 3

PSYC Elective 300+ Level (3 credits)

Psychology Cognate

Select One Course From:

- [BIOL105](#) Function of the Human Body 4
- [BIOL122](#) Human Anatomy & Physiology II 4
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4

Breadth Area Requirement

Psychology majors may select one of the following options:

Option 1: Complete an approved Minor (minimum of 20 credits) and does not include Minor: Psychology.

Option 2: Complete a Cognate of at least 20 credits in courses approved by the advisor.

Option 3: Complete an Associate degree that does not include a Psychology Minor or Behavioral Sciences Concentration.

Option 4: Complete a second BA/BS degree or major.

(For any of the above options, nine credits must be at the 300-400 Level.)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree: One year of a modern language other than English (if taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#)). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Arts/Science Psychology, General Psychology Concentration

Required Psychology Core Courses (27 credits)

- [PSYC101](#) Introduction to Psychological Science 3
- [PSYC155](#) Lifespan Development 3
- [PSYC199](#) Freshman Seminar in Behavioral Science 2
- [PSYC210](#) Statistics 3
- [PSYC212](#) Experimental Psychology 4
- [PSYC396](#) Tests and Measurements 3
- [PSYC399](#) Junior Seminar in Psychological Science 3
- [PSYC456](#) History & Systems of Psychology 3

- [PSYC490](#) Research Topics in Psychology 3

Elective Psychology Courses (18 credits)

Select One Course from each Content Area:

Biological

- [PSYC459](#) Behavioral Neuroscience 4

Cognitive

- [PSYC311](#) Learning and Motivation 4
- [PSYC457](#) Cognition 4

Personality/Social

- [PSYC217](#) Social Psychology 3
- [PSYC357](#) Personality Theory 3

Developmental/Applied

- [PSYC240](#) Behavior Management 3
- [PSYC259](#) Abnormal Psychology 3
- [PSYC301](#) Exceptional Child and Adolescent 3
- [PSYC385](#) Health Psychology 3

Practicum Experience

- [PSYC305](#) Psychology Research Practicum 3
- [PSYC306](#) Applied Psychology Practicum 3

PSYC Elective 300+ Level (3 credits)

Psychology Cognate

Select One Course From:

- [BIOL105](#) Function of the Human Body 4
- [BIOL122](#) Human Anatomy & Physiology II 4
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4

Breadth Area Requirement

Psychology majors may select one of the following options:

Option 1: Complete an approved Minor (minimum of 20 credits) and does not include Minor: Psychology.

Option 2: Complete a Cognate of at least 20 credits in courses approved by the advisor.

Option 3: Complete an Associate degree that does not include a Psychology Minor or Behavioral Sciences Concentration.

Option 4: Complete a second BA/BS degree or major.

(For any of the above options, nine credits must be at the 300-400 Level.)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree: One year of a modern language other than English (if taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); FREN151-FREN152 or FREN251-FREN252 or [SPAN161-SPAN162](#)). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Minor: Chemistry-Secondary Teaching

Degree Requirements

Total Credits Required: 25

- [CHEM110](#) Applied Organic & Biochemistry 4
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM231](#) Quantitative Analysis 4
- [CHEM332](#) Instrumental Analysis 4
- [EDUC443](#) Science Methods-Secondary 3
or
- [EDUC453](#) Directed Study: Science Methods 3

Students must earn a grade of C or better in each course. A minimum gpa of 2.70 or higher is required for this minor.

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Chemistry: Bachelor of Science

Program Description

The Chemistry Program at Lake Superior State University is now accredited by the American Chemical Society (ACS). According to the 2011 National Occupational Employment and Wage Estimator, more people are employed as chemists and chemical technicians than in any other job classification in the life and physical science occupations (<http://stats.bls.gov>). With many free electives and a common general education core, a chemistry degree can also be used in combination with other majors or minors such as pre-professional (medicine, pharmacy, veterinary, law, etc.), engineering, business, biology, and many more to match student interest and career plans.

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

The LSSU chemistry program has been approved by the American Chemical Society, and may provide certified degrees in Chemistry, Forensic Chemistry, Biochemistry Pre-Professional, and Environmental Chemistry if a student chooses this track. In addition, the BS in Chemistry Secondary Education degree may also be certified by the ACS. Graduates completing the prescribed requirements are awarded an ACS certificate signifying their completion of the approved degree and can qualify for membership in the Society upon graduation.

American Chemical Society
Committee on Professional Training
155 Sixteenth Street, N.W.,
Washington, D.C. 20036

Program Learning Outcomes:

Demonstrate proficiency in the five Chemistry subdisciplines defined by the American Chemical Society, including analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry.

Demonstrate readiness for employment as a chemist, science technician, or chemical technician at the baccalaureate level or graduate and professional level study.

With the guidance of a faculty mentor, develop a well-designed, well-executed,

and clearly communicated research project that contributes to scientific knowledge in the field of Chemistry.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Chemistry](#)
- [Bachelor of Science Chemistry, Secondary Teaching](#)

Degree Requirements

Bachelor of Science Chemistry

Chemistry Degree Requirements (57 credits minimum)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM261](#) Inorganic Chemistry 4
- [CHEM310](#) Applied Spectroscopy 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introductory Biochemistry 4
- [CHEM361](#) Physical Chemistry I 4
- [CHEM362](#) Physical Chemistry II 3
- [CHEM363](#) Physical Chemistry Lab 1
- [CHEM395](#) Junior Seminar 1
- [CHEM461](#) Advanced Inorganic Chemistry 3
- [CHEM462](#) Advanced Inorganic Chemistry Lab 1
- [CHEM495](#) Senior Project 2
- [CHEM499](#) Senior Seminar 1
- CHEM/CCHM Electives 300 level or higher (3 cr min)

Support Courses (20-21 credits)

- [USEM101](#) University Seminar I: Foundation Success 1
- [BUSN211](#) Business Statistics 3
- **or**
- [MATH207](#) Principles of Statistical Methods 3
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- **or**
- [MATH112](#) Calculus for Business & Life Science I 4
- [EGNR140](#) Linear Algebra Num Meth Engineers 2
- [EGNR245](#) Calculus App for Technology 3
- Two semesters of college physics with laboratory (8 cr min)

General Electives (24 credits)

General Education: All LSSU bachelor's degree candidates must complete the

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of 2.00 is required in your General Education Requirements.

Bachelor of Science Chemistry, Secondary Teaching

Chemistry Requirements (44 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM261](#) Inorganic Chemistry 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introduction to Biochemistry 4
- [CHEM361](#) Physical Chemistry I 4
- [CHEM362](#) Physical Chemistry II 4
- [CHEM363](#) Physical Chemistry Lab 1
- [CHEM395](#) Junior Seminar 1
- [CHEM499](#) Senior Seminar 1

For American Chemical Society certified degree, additionally required (total lab hours must be at least 400 hours). See Department Chair for special rules regarding ACS certification:

- CHEM Elective 300 or higher (3 cr min)
- [CHEM495](#) Senior Project 2

Complete one methods course from the following:

- [EDUC443](#) Science Methods for Secondary Teachers 3 **or**
- [EDUC453](#) Directed Study in Science Methods 3

Support Courses (19 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [BUSN211](#) Business Statistics 3 **or**
- [MATH207](#) Principles of Statistical Methods 3
- [PHYS221](#) Principles of Physics I 4 **or**
- [PHYS231](#) Appl Phys Engineer/Scientist I 4
- [PHYS222](#) Principles of Physics II 4 **or**
- [PHYS232](#) Appl Phys Engineer/Scientist II 4

Professional Education Requirements and Education Cognates- see [Secondary Education](#).

Approved Teaching Minor Recommended - see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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English Language and Literature: Bachelor of Arts

Program Description

The English Language and Literature - Secondary Teaching program prepares graduates for secondary-level teacher certification in Michigan, which permits individuals to teach English in grades 6-12. See Secondary Education for additional information. The major is housed in the Department of English.

Featuring small classes, close reading of great works of literature, many opportunities for writing and research, and supervision by faculty who know their students, LSSU English programs emphasize the human letters and language study, and give students many opportunities to excel at what they love.

English Education students have ample opportunities to help coordinate local literary events and festivals as part of their coursework. They are also encouraged to join the English Club, work as editors on student and professional journals, and enter the Stellanova Osborn Poetry Contest and the LSSU Short Story Contest.

In this program, students will complete a teaching major in English Language and Literature and additional professional education requirements that will prepare them for a career in teaching at the secondary level.

Program Learning Outcomes:

Instructional Choices - Candidates will make instructional choices that consider the integrated nature of the English language arts, the relationship between culture and language, and the principles of rhetoric and communication.

Grammar and Language - Candidates will value both prescriptive and descriptive grammars and conventions of English and appreciate the dynamic nature of English as a language shaped by historical, social, and cultural influences.

Context - Candidates will consider the broad progression of literary history and critical movements across time and space – including North American literature, classic and world literature, YA literature, visual texts, and critical theory – and place texts in context.

Text Analysis - Candidates will synthesize knowledge of genre, craft, literary history, and criticism to analyze texts.

Literacy and Scholarship Practices - Candidates will value, apply, and recommend effective literacy and scholarship practices.

Degree Requirements

English Requirements (34 credits)

- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL222](#) English Grammar and Language in Context 3
- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- [ENGL320](#) Responding to Writing 3
- [ENGL336](#) Young Adult Literature and Culture 3
- [ENGL345](#) Studies in Classic Texts 3
- [ENGL435](#) Studies in Visual Texts 3
- [ENGL380](#) History of Literary Criticism 3
- [ENGL490](#) Senior Thesis 2
- [ENGL499](#) Senior Thesis 2

English and Literacy Education Methods (6 credits):

- [EDUC440](#) Reading in the Content Area 3
- [EDUC441](#) Secondary English Methods 3
or
- [EDUC451](#) Ind Study English Methods 3

Professional Education Sequence and Education Cognates- see [Secondary Education](#).

Approved Teaching Minor Recommended - see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); or [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Minor: English Language and Literature - Secondary Teaching

Degree Requirements

Total Credits Required: 30

English Requirements:

- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL222](#) English Grammar & Language in Context 3
- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- [ENGL320](#) Responding to Writing 3
- [ENGL336](#) Young Adult Literature and Culture 3
- [ENGL345](#) Studies in Classic Texts 3
- [ENGL435](#) Studies in Visual Texts 3

Education Requirements:

- [EDUC440](#) Reading in the Content Area 3
- [EDUC441](#) Eng Lang Arts Meth Sec Teachers 3

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Integrated Science: Bachelor of Science

Program Description

The Secondary Education program for Integrated Science prepares educators to teach in grades 6-12 all courses in science, life science, physical science, biology, chemistry and physics. The degree program prepares individuals to qualify for Michigan Teacher certification in Integrated Science (program code DI).

Contact the School of Education for more information.

In addition to classroom teaching, graduates can pursue careers as science educators, curriculum specialists or enter graduate study in science, science education or related fields.

Program Learning Outcomes:

Candidates will make instructional choices that emphasize the hands-on, minds-on, real-world, phenomenon-based approach to science learning.

Candidates will accurately describe the principals and procedures of scientific investigation and the safe use of investigation processes.

Candidates will describe and give examples of the role of science in fostering and satisfying curiosity, in solving human problems, and in informing human decision making.

Candidates will synthesize knowledge of the interrelationships among the life, earth/space, and physical sciences and the cross cutting themes that connect the sciences to technology, math, and engineering.

Candidates will apply scientific research understanding and critical analysis skills to lead students in discussions of global and local aspects of issues such as the environment and human health.

With the guidance of a faculty mentor, candidates will develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge.

Degree Requirements

Science Core (69 credits)

- [BIOL105](#) Function of the Human Body 4
- [BIOL131](#) General Biology: Cells 4

- [BIOL132](#) General Biology: Organisms 4
- [BIOL220](#) Genetics 4
- [BIOL337](#) General Ecology 3
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM208](#) Survey Organic Chemistry/Biol Apps 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM395](#) Junior Seminar 1
- [CHEM499](#) Senior Seminar 1
- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [MATH111](#) College Algebra 3
- [MATH207](#) Principles of Statistical Methods 3
- [NSCI119](#) Astronomy 4
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II 4
- [GEOG108](#) Phy Geography: Meteorology and Climatology 4
- or**
- [NSCI116](#) Oceanography 4

Professional Education Sequence and Education Cognates- see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Minor: Mathematics - Secondary Teaching

Degree Requirements

Total Credits Required: 26

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH216](#) Discrete Mathematics and Problem Solving 3
- [MATH207](#) Principles of Statistical Methods 3
- [MATH321](#) History of Mathematics 3
- [MATH325](#) College Geometry 3
- [EDUC442](#) Math Methods for Secondary Teachers 3

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Mathematics: Bachelor of Science

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 concentration 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 Certification:

A completion of professional education coursework, including a semester of student teaching, prepares students for elementary or secondary teacher certification in Michigan and Ontario.

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.

Program Learning Outcomes (BS Mathematics):

Develop and clearly express mathematical concepts in written and oral communication. (*Communication*)

Use computing, gather evidence, discover patterns, create models, experiment with data, and solve theoretical or applied problems. (*Problem Solving*)

Use symbolic, analytical and quantitative skills and formal mathematical tools and techniques to analyze problems, synthesize solutions, and write proofs. (*Analysis*)

Apply mathematical methodologies and adhere to ethical and professional standards in their senior capstone project. (*Professional Responsibility*)

Program Learning Outcomes (BS Mathematics, Elementary Teaching):

Use mathematical processes, axiomatic systems, computing, algorithms, and logical reasoning to solve problems and communicate mathematical ideas. (*Mathematical Processes and Number Concepts*)

Describe, analyze and generalize patterns, algebraic relationships and functions using the tools of algebra and calculus. (*Patterns, Algebraic Relationships and Functions*)

Apply geometric principles in Euclidean, analytic, transformational and vector geometry to analyze geometric objects, form conjectures, solve problems and prove theorems. (*Measurement and Geometry*)

Organize, analyze and interpret data, sets and relations using the tools of statistics, probability and discrete mathematics. (*Data Analysis, Statistics, Probability, and Discrete Mathematics*)

Make instructional choices that reflect the integrated nature of mathematical concepts and mathematical practices within and among the mathematical domains. (*Instructional Choices*)

Program Learning Outcomes (BS Mathematics, Secondary Teaching)

Use mathematical processes, axiomatic systems, computing, algorithms, and logical reasoning to solve problems and communicate mathematical ideas. (*Mathematical Processes and Number Concepts*)

Describe, analyze, and generalize patterns, algebraic relationships and functions using the tools of algebra and calculus. (*Patterns, Algebraic Relationships, and Functions*)

Apply geometric principles in Euclidean, analytic, transformational and vector geometry to analyze geometric objects, form conjectures, solve problems and prove theorems. (*Measurement and Geometry*)

Organize, analyze and interpret data, sets and relations using the tools of statistics, probability and discrete mathematics. (*Data Analysis, Statistics, Probability, and Discrete Mathematics*)

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Mathematics](#)
- [Bachelor of Science Mathematics, Elementary Teaching](#)
- [Bachelor of Science Mathematics, Secondary Teaching](#)
- [Bachelor of Science Mathematics, Actuarial and Business Applications Concentration](#)

Degree Requirements

Bachelor of Science Mathematics

Departmental Requirements: (55 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH216](#) Discrete Mathematics and Problem Solving 3
- [MATH305](#) Linear Algebra 3
- [MATH308](#) Probability and Mathematical Statistics 3
- [MATH309](#) Applied Statistics 4
- [MATH310](#) Differential Equations 3
- [MATH341](#) Abstract Algebra I 3
- [MATH351](#) Graph Theory 3
- [MATH401](#) Mathematical Modeling 3
- [MATH411](#) Advanced Calculus 3
- [MATH490](#) Research Topics in Mathematics 3
- Additional MATH course numbered above [MATH216](#) 3-4

Other Requirements (14 credits)

- [CSCI103](#) Survey of Computer Science 3
- [CSCI105](#) Intro to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [PHYS231](#) Applied Physics for Engineers and Scientists I 4

Free Electives or Academic Minor (32-36 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Mathematics, Elementary Teaching

In this program, students 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 [Elementary Education section of this catalog](#).

The program also includes general education requirements and a professional education sequence. Students complete their initial teacher education courses in their sophomore year, and then apply for formal admission to the Teacher Education Program.

Degree Requirements:

Mathematics Requirements (37 credits)

- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI106](#) Web Page Design and Development 3
- [MATH103](#) Number Systems and Problem Solving 4
- [MATH104](#) Geometry & Measurement 4
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH207](#) Principles of Statistical Methods 3
- [MATH215](#) Fundamental Concepts of Math 3
- [MATH305](#) Linear Algebra 3
- [MATH321](#) History of Mathematics 3
- [MATH325](#) College Geometry 3

For information regarding the Professional Education Sequence and Elementary Planned Program, see [Elementary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Bachelor of Science Mathematics, Secondary Teaching

In this program, students will complete a major in mathematics tailored to the needs of a secondary teacher. Computer science courses are included, and students work extensively with computer and calculator technology as it applies to classroom teaching.

This program also includes general education requirements and a professional education sequence. Students complete their initial teacher education courses in their sophomore year and then apply for formal admission to the Teacher Education Program.

Graduates earn a bachelor's degree, which includes a semester of student teaching, in order to become certified to teach.

Degree Requirements:

Mathematics Requirements (42 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH207](#) Principles of Statistical Methods 3
- [MATH215](#) Fundamental Concepts of Math 3
- [MATH216](#) Discrete Mathematics and Problem Solving 3
- [MATH251](#) Calculus III 4
- [MATH305](#) Linear Algebra 3
- [MATH310](#) Differential Equations 3
- [MATH321](#) History of Mathematics 3
- [MATH325](#) College Geometry 3

- [MATH341](#) Abstract Algebra I 3
- [MATH401](#) Mathematical Modeling 3

Complete one methods course from the following:

- [EDUC442](#) Math Methods Secondary Teacher 3
- [EDUC452](#) Directed Study Math Methods Secondary Teacher3

Cognate

- [CSCI105](#) Intro. to Computer Programming 3
- or
- [CSCI121](#) Prin. of Computer Programming 4

Professional Education Sequence and Education Cognates- see [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

Bachelor of Science Mathematics, Actuarial and Business Applications Concentration

Departmental Requirements: (52 credits)

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH216](#) Discrete Mathematics and Problem Solving 3
- [MATH305](#) Linear Algebra 3
- [MATH308](#) Probability and Mathematical Statistics 3
- [MATH309](#) Applied Statistics 4
- [MATH310](#) Differential Equations 3
- [MATH341](#) Abstract Algebra I 3
- [MATH351](#) Graph Theory 3
- [MATH401](#) Mathematical Modeling 3
- [MATH411](#) Advanced Calculus 3
- [MATH490](#) Research Topics in Mathematics 3

Cognates (17 credits)

- [CSCI103](#) Survey of Computer Science 3
- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [ECON201](#) Principles of Macroeconomics 3
- [FINC341](#) Managerial Finance 4

A student choosing this emphasis will complete a minor in accounting-finance (24 credits).

Free Electives (11-15 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Social Science: Bachelor of Arts/Science

Program Description

The social science degree equips students with the knowledge and skills necessary to be effective citizens and to have rewarding careers in a wide range of employment settings, in both the public and private sectors.

The **Academic Minor** option provides students with the opportunity to complete an additional set of courses within a discipline of interest and relevance to their career goals.

The **Secondary Teaching Concentration** leads to a Michigan secondary (grades 6 - 12) teaching certificate with a Social Studies endorsement.

Program Learning Outcomes:

Historical Movements - Students will be able to synthesize major historical movements and their impact on democratic thought and participation.

Environment - Students will discuss the impact of humans on our environment and how our environment impacts our choices and behaviors.

Political System - Students will be able to communicate the complexities of the American political system through a discussion of how it is affected by the world political system and how it in turn affects the global political system.

Global Economy - Students will apply knowledge about global and personal economic decisions to encourage students to understand the interconnected nature of a global economy.

Civic Responsibility - Students demonstrate democratic values and civic responsibility through an understanding of social science research methods and the ability to see current issues as developments from our shared history.

Instructional Choices (for Sec. Teaching Conc.) - Students will make instructional choices that consider historical perspectives and developments that highlight the interconnected nature of economics, geography, and political science.

Degree Requirements

Economics:

- [ECON201](#) Principles of Macroeconomics 3

- [ECON202](#) Principles of Microeconomics 3

Geography:

- [GEOG201](#) World Regional Geography 4
- [GEOG306](#) Cultural Geography 4

History:

- [HIST101](#) History of World Civilization I 4
- [HIST102](#) History of World Civilization II 4
- [HIST131](#) United States History I 4
- [HIST132](#) United States History II 4
- [HIST250](#) The Atlantic World 3
- [HIST316](#) Europe in 20th Century 4
- [HIST321](#) Michigan History 2

Political Science:

- [POLI110](#) Introduction to American Government and Politics 4
- [POLI241](#) Introduction to International Relations 4
- [POLI367](#) Congress and the Presidency 4

Methods and Research:

- [POLI202](#) Soph Seminar Political Research and Statistics 3
- [HIST296](#) Historical Methods 2
- [HIST497](#) Senior Seminar in History 2

Minor or Concentration - Complete one of the following:

Academic Minor: Select an approved minor, to be completed with a minimum of 20 credits as listed in the catalog. The Academic Minor may not be History or Political Science. Complete Social Science Cognates.

Secondary Teaching Concentration: Complete Professional Education Sequence and Education Cognates - See [Secondary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

Academic Minor Option: A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major and Minor as well as in your General Education Requirements.

Secondary Teaching Concentration option: A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Secondary Education: Bachelor of Arts/Science

Program Description

The Secondary Education program is highlighted by in-depth study in a subject major and a subject minor, extended field experience in secondary school settings, and focused development of the knowledge and skills critical for effective teachers. The program leads to a bachelor of arts or a bachelor of science degree in the student's major area.

Secondary-level teacher certification in Michigan permits individuals to teach the subject areas, in which they hold endorsements, at grades 6-12. The subject majors and minors provide the required coursework for the related endorsements. Completing the coursework and passing the corresponding Michigan Test for Teacher Certification subject test enable graduates to meet the requirements of No Child Left Behind and to be highly qualified in their subject areas.

Subject major and minor options are listed below. Specific requirements for these are found in the appropriate sections of this catalog.

Majors	Minors
Chemistry	Chemistry
English Language and Literature	English Language and Literature
Integrated Science	Mathematics
Mathematics	
Social Science	

Students begin their studies in the secondary education program with a focus on general education requirements, an academic major and an academic minor. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major and minor, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or the fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification subject test in the major must be passed prior to beginning student teaching.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional

strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Secondary Education: Bachelor of Arts/Sciences programs are:

Academic Major: Choose one from the above (see requirements under the subject area in this catalog)

Optional Academic Minor: Choose one from list above (see requirements in the Minors section of this catalog)

Professional Education Sequence (35 credits)

- [EDUC250](#) Student Diversity & Schools 4
- [EDUC301](#) Learning Theory and Teaching Practice 3
- [EDSE301](#) Introduction to Special Education 3
- [EDUC350](#) Integrating Technology into 21st Century Learning Environments 3
- [EDUC415](#) General Instructional Methods 2
- [EDUC440](#) Reading in the Content Area 3
- EDUC44X or EDUC45X Methods in major and in minor (minimum credits) 3
- [EDUC460](#) Classroom Management 2
- [EDUC480](#) Directed Teaching: Seminar 2
- [EDUC492](#) Directed Teaching 10

Education Cognates (4 credits)

- [EDUC101](#) Self as Learner 1
- [MATH207](#) Principles of Statistical Methods 3

Formal admission to the program, qualification for student teaching, and successful completion of the program requires the following:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher
- Completion of all required courses in the education cognates, teaching major and teaching minor with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Secondary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); FREN151-FREN152 or FREN251-FREN252; or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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CJUS197

Physical Fitness for Public Safety

(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Law enforcement students (MCOLES) take course both semesters of their senior year.

Source: Academic Catalog 2017-18

CJUS201

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. Prerequisite: Criminal justice student, sophomore standing or permission of instructor. Course may be repeated twice for credit, to a maximum of 3 credits.

Source: Academic Catalog 2017-18

CJUS409

Procedural Criminal Law

(3,0) 3

Principles, duties and mechanics of criminal procedures as applied to important areas of arrest, search and seizure.
Prerequisite: CJUS319; or permission of MCOLES Director.

Source: Academic Catalog 2017-18

CJUS411

Police Operations

(5,0) 5

A capstone course for Michigan Commission on Law Enforcement Standards (MCOLES) Criminal Justice certification students. Court functions, domestic violence law and procedures, ethical issues, civil disputes, interpersonal relations, juvenile offenders and other related topics. Prerequisite: Permission of MCOLES Director.

Source: Academic Catalog 2017-18

CJUS444

Criminalistics

(3,3) 4

Criminalistics 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 MCOLES mandated hours. Prerequisite: CJUS243 or permission of MCOLES Director.

Source: Academic Catalog 2017-18

EMED189

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.

Source: Academic Catalog 2017-18

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Accounting: Bachelor of Science



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. 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.

150 Hour Concentration:

Students desiring to become Certified Public Accountants must complete 150 hours of coursework as required by the State of Michigan. LSSU students on this path will work with an advisor to select 26 additional credits beyond the accounting degree's required 124 credits. LSSU's accounting degree curriculum includes the courses required by the State of Michigan. Thus, students are encouraged to complete courses in other business areas that align with their academic and career objectives and help prepare them for the CPA exam. During their last semester, students will be required to complete **ACTG450 CPA Exam Preparation (3 credits)** as an independent study.

Program Learning Outcomes:

Accounting Theory and Practice - Apply accounting standards to information for financial accounting, managerial/cost accounting, governmental accounting, auditing, tax and accounting information systems purposes.

Effective Communication - Record, report and communicate accounting information relevant to internal and external users.

Business Ethics - Apply ethical accounting practices.

Global Business Awareness – Apply knowledge of international accounting issues.

Teamwork - Work productively as a member of a team.

Business Knowledge - Apply knowledge of business-core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [BUSN121](#) Introduction to Business 3
- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government and Society 3
- [BUSN466](#) Business Policy 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Introduction Management Information Systems 3
- [MGMT360](#) Management Concepts and Apps 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles and Strategy 3

Major Requirements (41 Credits)

- [ACTG232](#) Intermediate Accounting I 4
- [ACTG233](#) Intermediate Accounting II 4
- [ACTG332](#) Cost Management I 4
- [ACTG333](#) Cost Management II 4
- [ACTG334](#) Accounting Information Systems 3
- [ACTG421](#) Federal Taxation Accounting I 3
- [ACTG422](#) Federal Taxation Accounting II 3
- [ACTG427](#) Auditing 4
- [ACTG432](#) Advanced Accounting I Consolidations 4
- [ACTG433](#) Advanced Accounting II Governmental 4
- [MATH111](#) College Algebra 3
- [BUSN101](#) Freshman Seminar 1

Electives (8-10 Credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Biochemistry Pre-Professional: Bachelor of Science

Program Description

The Chemistry Program at Lake Superior State University is now accredited by the American Chemical Society (ACS). According to the 2011 National Occupational Employment and Wage Estimator, more people are employed as chemists and chemical technicians than in any other job classification in the life and physical science occupations (<http://stats.bls.gov>). With many free electives and a common general education core, a chemistry degree can also be used in combination with other majors or minors such as pre-professional (medicine, pharmacy, veterinary, law, etc.), engineering, business, biology, and many more to match student interest and career plans.

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

The LSSU chemistry program has been approved by the American Chemical Society, and may provide certified degrees in Chemistry, Forensic Chemistry, Biochemistry Pre-Professional, and Environmental Chemistry if a student chooses this track. In addition, the BS in Chemistry Secondary Education degree may also be certified by the ACS. Graduates completing the prescribed requirements are awarded an ACS certificate signifying their completion of the approved degree and can qualify for membership in the Society upon graduation.

American Chemical Society
Committee on Professional Training
155 Sixteenth Street, N.W.,
Washington, D.C. 20036

Program Learning Outcomes:

Demonstrate proficiency in the five Chemistry subdisciplines defined by the American Chemical Society, including analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry.

Demonstrate readiness for employment as a chemist, science technician, or chemical technician at the baccalaureate level or graduate and professional level study.

With the guidance of a faculty mentor, develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge in the field of Biochemistry.

Degree Requirements

Chemistry Degree Requirements (48 credits minimum)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM261](#) Inorganic Chemistry 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introductory Biochemistry 4
- [CHEM353](#) Introductory Toxicology 3
- [CHEM361](#) Physical Chemistry I 4
- [CHEM363](#) Physical Chemistry Lab 1
- [CHEM395](#) Junior Seminar 1
- [CHEM452](#) Biochemistry II 4
- [CHEM499](#) Senior Seminar 1

For American Chemical Society certified degree, additionally required (total lab hours must be at least 400 hours). See Department Chair for special rules regarding ACS certification:

- [CHEM495](#) Senior Project 2

Biology Courses (16 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL220](#) Genetics 4
- Any BIOL 400 level course 4

Support Courses (20 credits)

- [USEM101](#) University Seminar: Foundation Success 1
- [BUSN211](#) Business Statistics 3
- **or**
- [MATH207](#) Principles of Statistical Methods 3
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [PHYS231](#) Applied Physics I 4
- [PHYS232](#) Applied Physics II 4

General Electives (16 credits minimum)

General Education: All LSSU bachelor's degree candidates must complete the

LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of a 2.00 or higher is required in your General Education Requirements.

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Biology: Bachelor of Science



Program Description

The Bachelor of Science degree in biology combines theory and concepts of biology with intensive, hands-on experiences in our state-of-the-art laboratories and a wealth of close-by field sites. Students build on a core of biology classes by selecting the physiology and taxonomy classes and other electives that best fit their interests.

The program is an excellent preparation for biology or related careers. Our graduates are currently employed as doctors, dentists, veterinarians, biological researchers, laboratory technicians, consultants and teachers. Many careers in biology require education beyond the baccalaureate degree and LSSU's biology program has a proven record of excellent preparation for professional and graduate school.

Animal Biology concentration - In this program, you will study the physiology, nutrition, behavior, and health of animals, with focus on species that are economic resources or beloved companions. Includes instruction in molecular and cell biology, microbiology, nutrition and physiology, ecology and behavior, genetics and evolutionary biology, disease prevention, and applications to specific species and phyla. As an animal biology major, you'll have the chance to put your theoretical knowledge into practice by working with wild and domesticated animals in hands-on situations. It will prepare you for employment in laboratories, zoos, farms, or animal shelters.

Food and Ecology concentration - prepares students for specific careers or graduate studies in particular aspects of the food system. These careers range from technical, policy, outreach, and research work with federal, local and tribal government agencies; university research, food businesses; NGOs working to improve health and nutrition, advocacy groups, industry groups. The skills required for these careers thus range across a number of disciplines. This program provides the required basis in biological sciences and adds choices in other disciplines to let students tailor their program to their specific interests. Students interested in pursuing graduate school in the sciences should consider adding additional chemistry classes, including organic chemistry, to their schedule. The program requires that students complete an apprenticeship class with an organization working in an aspect of the food system and complete a senior project.

Pre-Medical concentration - prepares students for medical, dental, optometry, podiatry, chiropractic, and physician assistant graduate studies. Biology students will work with a pre-professional advisor to select the electives best suited for the health professional program of their choice while also providing a well-rounded biology education. This program has an embedded chemistry minor that meets the requirements of most U.S. medical schools. The LSSU Biology department is recognized by all health professional schools in Michigan as a top

rate biology program.

LSSU participates in the Michigan State University College of Human Medicine's Early Assurance Program. During their junior year, students who excel in the LSSU biology pre-medical program may apply to the College of Human Medicine, and selected students will be assured of admission and begin a relationship with MSU College of Human Medicine during their senior year of college.

Pre-Veterinary concentration - with an embedded chemistry minor, prepares students to enter veterinary college after graduation from LSSU. It was designed to meet the specific requirements for the Michigan State University-College of Veterinary Medicine, but our students go to vet schools all over the country, for example North Carolina State, Oklahoma State and University of Illinois. This program stresses not only academics, but also the animal care experience that is critical for gaining admission to a veterinary college.

Program Learning Outcomes:

Thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Effectively communicate the results or outcomes of a scientific investigation in multiple formats.

Engage in professional activities related to the study of biological sciences and practice good professional ethics.

Available degrees (see specific requirements further down the page):

- [Bachelor of Science Biology](#)
- [Bachelor of Science Biology, Animal Biology Concentration](#)
- [Bachelor of Science Biology, Food and Ecology Concentration](#)
- [Bachelor of Science Biology, Pre-Medical Concentration](#)
- [Bachelor of Science Biology, Pre-Veterinary Concentration](#)

Degree Requirements

Bachelor of Science Biology

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1

- [BIOL499](#) Senior Symposium 1

Focal Courses in Biology (7 - 8 credits)

Physiology Elective (1 course from)

- [BIOL315](#) Plant Physiology 4
- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Cell Biology 4

Taxonomy Elective (1 course from)

- [BIOL202](#) Field Botany 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [BIOL306](#) Mycology 3
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [NRES475](#) Aquatic Entomology 3

Biology Cognates (21 credits)

21 credits of any BIOL courses not used to satisfy one of the other requirements, or any NRES courses other than [NRES199](#), [NRES299](#), [NRES250](#), [NRES398](#), [NRES399](#), [NRES450](#), NRES490, [NRES495](#), or [NRES499](#). A minimum of 17 credits must be from 300/400 level courses. At least one elective must be a 400 level course.

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Science 4
- Physical Science (CHEM, PHYS, GEOL) course with lab 4

Free Electives - 16 - 19 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Animal Biology Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Animal Biology (20 credits)

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrae Anatomy 4
- [BIOL330](#) Animal Physiology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL420](#) Evolutionary Analyses 3
- [BIOL335](#) Animal Nutrition 3
- or**
- [BIOL426](#) Animal Disease and Zoonoses 3

Cognates (Choose 12 credits from)

Zoology:

- [NRES240](#) Natural History of Vertebrates 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [NRES475](#) Aquatic Entomology 3

or/and

Animal Health:

- [BIOL306](#) Mycology 3
- [BIOL423](#) Immunology* 4
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [CHEM353](#) Toxicology* 4

Support Courses (17 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3

Free Electives - 21 - 24 credits as needed to reach 124 total credits

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Requires [CHEM225](#) and [CHEM351](#)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Food and Ecology Concentration

Biology Foundation and Research Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Food Systems (12-13 credits)

- [BIOL307](#) US Food Systems 3
- [BIOL202](#) Plant Sciences: Identification and Diversity 3
- [BIOL235](#) Protected Horticulture 3
- [BIOL389](#) Apprenticeship in (Food Systems) 3-4

Speciality Cognates (6 - 11 credits)

Choose One Area:

Policy and Communications (select 3 classes - 9 credits)

- [POLI130](#) Intro to State and Local Government 3
- [POLI301](#) Policy Analysis and Evaluation 3
- [COMM302](#) Argumentation and Advocacy 3
- or**
- [COMM320](#) Public Relations 3

Production (11 credits)

- [BIOL232](#) Introduction to Aquaponics 4
- [BIOL306](#) Mycology 3
- [BIOL315](#) Plant Sciences: Structure and Function 4

Marketing (select 2 classes - 6 credits)

- [MRKT281](#) Introduction to Marketing 3
- [MRKT384](#) Social Media Marketing 3
- [MRKT386](#) Mobile Marketing 3

Analytics (select 3 classes - 8-9 credits)

- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [EVRN131](#) Introduction to GIS 3
- [EVRN225](#) Intermediate GIS 2
- [EVRN325](#) Geospatial Analysis 3

Support Courses (8 credits)*

- [CHEM115](#) General Chemistry 5
- [MATH111](#) College Algebra 3

Free Electives - credits as needed to reach 124 total credits.

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Students interested in science graduate programs should consult with their advisor regarding additional chemistry courses.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Medical Concentration

Biology Courses (34 credits)

- [BIOL121](#) Human Anatomy and Physiology I 4
- [BIOL122](#) Human Anatomy and Physiology II 4
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology* 4

- [BIOL421](#) Adv Cell & Molecular Biology* 4

Advanced Study - Select 17 credits from the following list:

- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL380](#) Hematology 4
- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [BIOL406](#) Immunohematology 3
- [BIOL422](#) Parasitology 3
- [BIOL423](#) Immunology 3
- [BIOL425](#) Virology 3
- [BIOL426](#) Animal Disease and Zoonosis 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL455](#) Body Fluids Analysis 3
- [BIOL480](#) Advanced Clinical Microbiology 4

Support Courses

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II
- [HLTH328](#) Multicultural Approaches to Health Care 3
- [PSYC101](#) Introduction to Psychological Science 3
- [SOCY101](#) Introduction to Sociology 4

Free Electives - 12 - 14 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Veterinary Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology* 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1

- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Seminar 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Adv Cell & Molecular Biology* 4

Taxonomy Elective (1 course from)

- [BIOL306](#) Mycology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3

Support Courses (37 credits)

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business/Life Science 4
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II 4

Advanced Study - Select 17 credits from the following list:

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL335](#) Animal Nutrition* 3
- [BIOL380](#) Hematology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL423](#) Immunology 4
- [BIOL426](#) Animal Disease and Zoonoses 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL480](#) Advanced Microbiology 4

*These courses required by MSU-CVM.

Free Electives - 9 - 11 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Business Administration: Bachelor of Science

Program Description

The Business Administration degree provides students with a broad overview of business concepts, along with particular emphasis in one functional area as identified by the minor selected. The intent of this degree is to create a well-rounded graduate with a basic understanding of all aspects of a business organization, both in the office and on the workplace floor. This degree is designed specifically for individuals who acquired training at community colleges, technical institutes, industry-related schools, etc., or have several years of workplace experience, and want to continue their education in the area of business.

Program Learning Outcomes:

Business Core: Apply knowledge of business core subjects.

Business Plan: Apply skills in research, communication and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [BUSN121](#) Introduction to Business 3
- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government & Society 3
- [BUSN466](#) Business Policy 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Introduction Management Information Systems 3
- [MGMT360](#) Management Concepts and Applications 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles and Strategy 3

Major Requirements (4 Credits)

- [BUSN101](#) Freshman Seminar 1

- [MATH111](#) College Algebra 3

Disciplinary Requirement: Pick one Minor from the following:

- Accounting-Finance
- Economics-Finance
- Human Resource Management
- International Business
- Marketing
- Public Relations
- Sports Marketing
- Cognate of 15 or more credits approved by the Dean

*Students can not double major in discipline in which minor is selected.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Business Administration - Entrepreneurship: Bachelor of Science

Program Description

The entrepreneurship major is designed to develop students' skills so that they are both confident and competent in analyzing new business ideas; refining a vision of a new business into the kind of business plan lenders and investors are likely to approve; and, translating the business plan into the start-up, launch, daily management, and growth and exit strategies most relevant and feasible for a small business venture. The entrepreneurship major also prepares students for working within a small, entrepreneurial firm, as an employee with specific business skills tailored to the needs of the smaller firm. The study of entrepreneurship includes classes in marketing, accounting, management, and entrepreneurship, and requires an internship placement in a small firm or as an advisor to a small firm. These courses, along with the common professional business core courses, will provide students with the knowledge, training, and practical experience required to become successful small business owners, counselors, and employees.

Program Learning Outcomes:

Business Plan Development - Develop a sound and viable business plan for a new venture.

Human Resource Development - Explain tools to motivate and retain workers in a small firm.

Pitch Deck - Present a professional-level PowerPoint presentation to the class.

Pro Forma Financial Statements - Develop pro forma balance sheet and income statement.

Business Knowledge – Apply knowledge of business core subjects.

Professional Skills – Apply professional-level skills in research, communication, critical thinking, and business ethics.

Degree Requirements

Common Professional Component (48 Credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [BUSN121](#) Introduction to Business 3

- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government & Society 3
- [BUSN466](#) Business Policy 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Introduction Management Information Systems 3
- [MGMT360](#) Management Concepts and Applications 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles and Strategy 3

Major Requirements (7 credits)

- [BUSN101](#) Freshman Seminar 1
- [BUSN399](#) Internship 3
- [MATH111](#) College Algebra 3

Minimum 21 Credits from 3 disciplines should be selected from the following list:

- [ACTG334](#) Accounting Information Systems 3
- [BUSN389](#) Entrepreneurship 3
- [INTB289](#) Competing in the Global Market Place 3
- [INTB486](#) International Marketing 3
- [MGMT365](#) Human Resource Management 3
- [MGMT380](#) Principles of Leadership 3
- [MGMT464](#) Organizational Behavior 3E
- [MGMT476](#) Employee Training and Development 3
- [MRKT283](#) Principles of Selling 3
- [MRKT385](#) Services Marketing
- [MRKT387](#) Advertising Theory and Practice 3
- [MRKT388](#) Retail Management 3

Free Electives to reach 124 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Business Administration - International Business: Bachelor of Science



Program Description

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

Program Learning Outcomes:

International Business Knowledge – Apply international business knowledge in the areas of management, marketing, economics, and business law.

Cultural Systems - Analyze how cultural, economic, geographical and political paradigms impact ethical issues in various international business decision processes.

Synthesis - Evaluate nature, significance and context of managerial activities as undertaken by leadership in various organizations in international business contexts.

Critical Thinking - Work in teams, use critical thinking to analyze and solve problems and effectively communicate legal issues pertaining to international business law and international business operations.

International Marketing, Culture and Communication - Function effectively in situations characterized by cultural diversity. This includes awareness of own cultural intelligence and awareness of the cultural intelligence of others.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills – Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [BUSN121](#) Introduction to Business 3
- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government & Society 3
- [BUSN466](#) Business Policy 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Introduction Management Information Systems 3
- [MGMT360](#) Management concepts & Applications 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles and Strategy 3

Major Requirements (34 Credits)

- [BUSN101](#) Freshman Seminar 1
- [ECON408](#) International Economics 3
- [INTB289](#) Competing in the Global Marketplace 3
- [INTB375](#) International Business Law 3
- [INTB420](#) Comparative International Management 3
- [INTB486](#) International Marketing 3
- [MATH111](#) College Algebra 3
- International Experience ([BUSN399](#) or [INTD310](#) or [INTD410](#)) 3

Regional Electives (Minimum 3-4 Credits)

Language Electives (Minimum 8 Credits)

Free Electives to reach 124 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Business Administration - Management: Bachelor of Science



Program Description

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

Program Learning Outcomes:

Leadership - Utilize exceptional interpersonal skills, inclusive practices and performance management strategies to engage and develop team and talent.

Management Practice - Develop goals, and design and implement control mechanisms toward the successful achievement of those goals, for themselves and others.

Communication of Ethical and Critical Thinking - Make ethical decisions, utilizing critical thinking skills, and clearly communicate the decisions made along with the rationale.

Technology - Describe the role and impact of technology on managers and the organization.

Data-Driven Decision-Making - Develop and implement data-driven management decision-making in business operations.

Business Law - Define and explain the basic principles of contract, personal property and sales, agency, partnerships, corporate law, commercial paper law that apply to business transactions, etc.

Labor Law - Define and explain labor law through case study method as it relates to Civil Rights Act, Age Discrimination Act, Family Medical Leave Act, OSHA, Unfair Labor Practices (union and employers), National Labor Relations Act, antitrust laws, representative elections procedures, and other legislations, etc.

HR Management - Define and explain all the functions of human resource management: recruiting, selecting, training and development, compensation, performance appraisals, labor relations, etc.

Business Knowledge - Apply knowledge of business core subjects. **Professional Skills** - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 Credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [BUSN121](#) Introduction to Business 3
- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government & Society 3
- [BUSN466](#) Business Policy 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Introduction Management Information Systems 3
- [MGMT360](#) Management Concepts and Applications 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles and Strategy 3

Major Requirements (30 Credits)

- [BUSN101](#) Freshman Seminar 1
- [BUSN308](#) Managing Cultural Differences 3
- [BUSN355](#) Business Law II 3
- [MGMT365](#) Human Resource Management 3
- [MGMT380](#) Principles of Leadership 3
- [MGMT451](#) Labor Law 4
- [MGMT464](#) Organizational Behavior 3
- [MGMT469](#) Collective Bargaining 3
- [MGMT476](#) Employee Training Development 4
- [MATH111](#) College Algebra 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Business Administration - Marketing: Bachelor of Science



Program Description

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

Program learning Outcomes:

Basic Marketing Knowledge - Apply knowledge of marketing and other functional areas of business and their relationship to each other.

Decision Making - Research, synthesize, analyze and accurately interpret quantitative and qualitative information to drive effective marketing decision making.

Communication in Marketing - Communicate effectively, orally and in writing, their marketing observations, findings, research, and recommendations to a large audience.

Employability Skills - Apply entry-level, marketable skills appropriate to a marketing-related position and team in industry, such as in sales, event planning, marketing communications, public relations, retailing, market analysis, or product management.

Use of Marketing Technology - Use technology to assist with the synthesis and analysis of data, oral and written communications, and group collaboration.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4

- [BUSN121](#) Introduction to Business 3
- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government & Society 3
- [BUSN466](#) Business Policy 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Introduction Management information systems 3
- [MGMT360](#) Management Concepts and Applications 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles and Strategy 3

Major Requirements (Minimum 31 Credits)

- [BUSN101](#) Freshman Seminar 1
- [MRKT381](#) Consumer Behavior 3
- [MRKT480](#) Marketing Research 3
- [MRKT481](#) Marketing Management 3
- [MATH111](#) College Algebra 3
- Four Marketing Electives* 12
- Two Business Electives ** 6-8

*Electives in Marketing, [INTB486](#), or [COMM320](#)

**Electives in 300/400 level courses in BUSN, MGMT, ECON, FINC, ACTG, INTB.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Cannabis Business: Bachelor of Science

Program Description

The bachelor of science in Cannabis Business provides students with the knowledge and skills necessary to launch a business in the rapidly expanding industry related to cannabis. This program is designed for future managers, supervisors, and entrepreneurs in a cannabis enterprise. The program has at its foundation the basics of business and business management and then applies those principles to specific cannabis businesses such as cultivation facilities and dispensaries. This program is well rounded and is designed to lead to a wide range of employment opportunities. The unique issues related to state, federal, provincial and international laws are evaluated and analyzed in order to plan, develop and launch a cannabis business within legal constraints. These courses, along with the common professional business core courses, will provide students with the knowledge, training, and practical experience required to become successful small business owners, counselors, and employees.

Students are encouraged, but not required, to take elective courses in the associate program in Cannabis Science in order to augment their skills in safety and testing.

Program Learning Outcomes:

E-Marketing - Use digital, social, and mobile marketing to promote a business or product.

Cannabis Business - Identify, describe, analyze and synthesize businesses in the cannabis industry, including, but not limited to, medicinal, cultivation, dispensary, processing, materials, testing and safety.

Cannabis and Society - Explain, analyze and compare and contrast state, federal, provincial and international laws related to growing, distributing, selling and marketing cannabis products and describe the effects of cannabis on society.

Cannabis Economics - Think critically and analytically about the legalization of cannabis and its effects on employment, policy and the economy.

Cannabis Entrepreneurship - Prepare a business canvas, pitch deck and

marketing plan for a startup cannabis business.

Horticulture – Apply foundational understanding of growing and harvesting that is needed to manage a cultivation operation.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Core (45 Credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [BUSN121](#) Introduction to Business 3
- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government & Society 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Introduction Management Information Systems 3
- [MGMT360](#) Management Concepts and Applications 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles and Strategy 3

Major Requirements (38 Credits)

- [BIOL104](#) Survey of General Biology 4
- [BIOL235](#) Intro to Protected Horticulture 3
- [BUSN101](#) Freshman Seminar 1
- [BUSN308](#) Managing Cultural Differences 3
- [CBUS122](#) Survey of Cannabis Business 2
- [CBUS203](#) Cannabis Economics 3
- [CBUS305](#) Business Cannabis Cultivation/Disp 3
- [CBUS360](#) Cannabis Law and Policy 1
- [CBUS389](#) Cannabis Entrepreneurship 3
- [CBUS466](#) Cannabis Business Policy 3
- [MRKT283](#) Principles of Selling 3
- [MRKT381](#) Consumer Behaviors 3
- [MATH111](#) College Algebra 3
- [SOCY420](#) Sociology of Cannabis 3

E-Marketing Certification (9 credits)

- [MRKT383](#) Digital Marketing 3
- [MRKT384](#) Social Media Marketing 3
- [MRKT386](#) Mobile Marketing 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Cannabis Chemistry: Bachelor of Science



Program Description

The bachelor of science in Cannabis Chemistry equips graduates with the skills necessary to gain employment in the emerging cannabis markets in Michigan, the United States, and beyond. Cannabis Chemistry graduates earn over 600 hours of hands-on, laboratory experience to prepare them for a career as chemist in the cannabis field. Cannabis chemists leave trained on state of the art instrumentation and in techniques that are industry standards. The chemistry program at Lake Superior State University is approved by the American Chemical Society.

Program Learning Outcomes:

Demonstrate proficiency in the following Chemistry subdisciplines: analytical chemistry, biochemistry, and organic chemistry.

The B.S. Cannabis Chemistry student will be well-prepared for employment within the field or graduate-level study.

With the guidance of a faculty mentor, develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge in the field of Cannabis Chemistry.

Degree Requirements

Chemistry Degree Requirements (51 credits minimum)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CCHM120](#) Cannabis Chemistry 1
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CCHM240](#) Cannabis Plant Sample Prep 2
- [CCHM245](#) Cannabis Chemistry II 1
- [CHEM310](#) Applied Spectroscopy 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [CCHM350](#) Cannabis Chemistry III 1
- [CHEM351](#) Introductory Biochemistry 4
- [CHEM353](#) Introductory Toxicology 3
- [CHEM355](#) Medicinal Chemistry 3

- [CHEM395](#) Junior Seminar 1
- [CCHM440](#) Cannabis Separations Chemistry 4
- [CHEM499](#) Senior Seminar 1

Biology Courses (15 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL204](#) General Microbiology 4
- [BIOL235](#) Intro to Protected Horticulture 3

Support Courses (10 credits)

- [USEM101](#) University Seminar I: Foundations for Success 1
- [MATH111](#) College Algebra 3
- [BUSN211](#) Business Statistics 3
- or
- [MATH207](#) Principles of Statistical Methods 3
- [ECON202](#) Principles of Microeconomics 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of 2.00 is required in your General Education Requirements.

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Computer Engineering: Bachelor of Science

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. This accredited* program blends practical computer science courses in computer organization, databases, operating systems, and networks with traditionally hands-on electrical engineering courses in digital circuits, digital system, microcontrollers, computer programming, and digital signal processing. This combination gives you a broad-based education that ties software to hardware and theory to application. Some of the program highlights are:

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

Cooperative Education

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

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Departmental Requirements:

Mathematics

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH308](#) Probability and Mathematical Statistics 3
- [MATH310](#) Differential Equations 3

Sciences

- [CHEM115](#) General Chemistry I 5
- [PHYS231](#) Applied Physics for Engineers and Scientists I 4
- [PHYS232](#) Applied Physics for Engineers and Scientists II 4

Computer Science

- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [CSCI201](#) Data Structures and Algorithms 4
- [CSCI341](#) Discrete Structures for Computer Science 4
- **or**
- [EGEE425](#) Digital Signal Processing 3
- [CSCI434](#) Operating System Concepts 3

Engineering

- [EGEE125](#) Digital Fundamentals 4
- [EGEE210](#) Circuit Analysis 4
- [EGEE250](#) Microcontroller Fundamentals 4
- [EGEE280](#) Introduction to Signal Processing 5
- [EGEE320](#) Digital Design 4
- [EGEE355](#) Microcontroller Systems 4
- [EGEE370](#) Electronic Devices 4
- [EGNR101](#) Introduction to Engineering 2
- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGNR340](#) Advanced Numerical Methods for Engineers 1
- [EGNR346](#) Probability and Statistics Lab for Engineers 1

Technical Electives (Minimum 13 Credits):

For students obtaining a concentration, the concentration electives must meet the requirements listed below. Otherwise, all 13 technical elective credits may be selected from the list of technical electives.

- [CSCI281](#) Intro to UNIX and Networking (or higher level CSCI) 3
- [EGEE310](#) Network Analysis (or higher level EGEE) 3
- [EGEM220](#) Statics 3
- [EGME275](#) Engineering Materials (or higher level EGME) 3
- [EGET310](#) Electronic Manufacturing Processes 4
- [EGRS365](#) Programmable Logic Controllers 3
- [EGRS460](#) Control Systems 4
- [MATH215](#) Fund Concepts of Mathematics (or higher level MATH) 3
- or any course from the listed concentrations

Robotics and Automation Concentration (C or better grade required for all courses)

- [EGRS385](#) Robotics Engineering 4
- [EGRS430](#) Systems Integration and Machine Vision 4
- [EGRS435](#) Automated Manufacturing Systems 3

Sustainable Energy Concentration (C or better grade required for all courses)

- [EGNR261](#) Energy Systems and Sustainability 3
- [EGNR361](#) Energy Systems and Sustainability Lab 1

Complete two courses from:

- [EGEE330](#) Electro-Mechanical Systems 4
- [EGEE411](#) Power Distribution and Transmission 3
- [EGEE475](#) Power Electronics 4
- [EGNR362](#) Vehicle Energy Systems 3

Senior Sequence (Complete one of the following sequences):

Industrial Project

- [EGNR491](#) Engineering Design Project I 3
- [EGNR495](#) Engineering Design Project II 3

Cooperative Project

- [EGNR250](#) Cooperative Education 2
- [EGNR450](#) Cooperative Education Project I 4
- [EGNR451](#) Cooperative Education Project II 3
- [EGNR491](#) Engineering Design Project I 3

Research Project

- [EGNR260](#) Engineering Research Methods 2
- [EGNR460](#) Engineering Research Project I 4
- [EGNR461](#) Engineering Research Project II 2

32 credits from Mathematics (including [EGNR340](#)) and Natural Sciences is

required.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Computer Networking: Bachelor of Science

Program Description

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

Students will have hands-on experience with Linux, Novell and Windows platforms, as well as networking hardware and operating system installation.

Some of the highlights of the program are:

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

Program Learning Outcomes:

Analyze the needs of a user, design a computer network to satisfy those needs, and install, modify and maintain the network environment relative to both hardware and software. (*Analyze Needs*)

Design, install, and implement appropriate security, intrusion detection, and troubleshooting techniques and methodologies in a communication network. (*Design*)

Evaluate changes in technology, security, and user needs based on accepted and updated best practices in the field. (*Security and Best Practices*)

Communicate technical information relative to problems and solutions to both other professionals in the field as well as involved non-technical persons. (*Communications*)

Degree Requirements

Departmental Requirements (59 credits)

Departmental GPA must be 2.50 or higher

- [CSCI103](#) Survey of Computer Science 3

- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI106](#) Web Page Design and Development 3
- [CSCI121](#) Principles of Programming 4
- [CSCI163](#) Troubleshooting & Repair of Personal Computers 3
- [CSCI211](#) Database Applications 3
- [CSCI221](#) Computer Networks 3
- [CSCI248](#) Network Operating Systems I 3
- [CSCI263](#) Managing Computer Security 3
- [CSCI281](#) Intro. to UNIX and Networking 3
- [CSCI292](#) Computer Networking Project 4
- [CSCI323](#) Routers and switches 3
- [CSCI348](#) Network Operating Systems II 3
- [CSCI351](#) Mobile Applications Development 3
- [CSCI371](#) Multi-Platform Application Development 3
- [CSCI412](#) UNIX System Administration 3
- [CSCI418](#) Senior Project I 3
- [CSCI419](#) Senior Project II 3
- [CSCI422](#) Network and Computer Security 3

Support Courses (12 credits)

- [BUSN121](#) Introduction to Business 3
- [BUSN231](#) Business Communications 3
- [MATH111](#) College Algebra 3
- [MATH207](#) Princ. of Statistical Methods 3
- [ENGL306](#) Technical Writing 3

Free Electives (17 -20)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.50 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Computer Science: Bachelor of Science

Program Description

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

Program Learning Outcomes:

Analyze the needs of a user, design a computer software system to satisfy those needs, and write and debug computer programs needed for that system. (*Analyze Needs*)

Evaluate and implement solutions to programming problems using appropriate algorithms, programming languages, user interfaces, and utilities. (*Implement*)

Evaluate changes in technology, software, and user needs based on accepted and updated best practices in the field. (*Best Practices*)

Communicate technical information relative to problems and solutions to both other professionals in the field as well as involved non-technical persons. (*Communication*)

Degree Requirements

Departmental Requirements (62 credits). Departmental GPA minimum of 2.50 or higher.

- [CSCI103](#) Survey of Computer Science 3
- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [CSCI201](#) Data Structures and Algorithms 4
- [CSCI211](#) Database Applications 3
- [CSCI221](#) Computer Networks 3
- [CSCI263](#) Managing Computer Security 3
- [CSCI291](#) Computer Science Project 4
- [CSCI321](#) Computer Graphics 3
- [CSCI325](#) Web Applications w PHP & Javascript 3
- **or**
- [CSCI326](#) Web Applications w ASP.NET 3
- [CSCI341](#) Discrete Structures for Computer Science 4
- [CSCI342](#) Advanced Programming Techniques 4

- [CSCI351](#) Mobile Applications Development 3
- [CSCI371](#) Multi-Platform Application Development 3
- [CSCI411](#) Adv Database & Project Management 3
- [CSCI415](#) Computer Organization & Architecture 3
- [CSCI434](#) Operating Systems Concepts 3
- [CSCI418](#) Senior Project I 3
- [CSCI419](#) Senior Project II 3

Mathematics Requirements (10 credits)

- [MATH131](#) College Trigonometry 3
- [MATH112](#) Calculus for Business & Life Science 4
- **or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Prin. of Statistical Methods 3

Other Requirements (6 credits)

- [BUSN121](#) Introduction to Business 3
- [ENGL306](#) Technical Writing 3

Free Electives (13-16 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.50 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Conservation Biology: Bachelor of Science

Program Description

The BS in Conservation Biology prepares students for careers whose goal is to solve a wide range of environmental challenges such as invasive species, altered landscapes, species extinctions, or the restoration of degraded aquatic and terrestrial ecosystems. Our selection of rigorous field based courses in watersheds, soils, forestry, ecology (general, fish, wildlife or plant), and organisms (mammalogy, ornithology, ichthyology, or entomology) offers a strong set of foundational courses in the natural sciences. Combining this coursework with interdisciplinary courses and GIS technology adds the breadth needed to formulate sustainable solutions to local, regional and global conservation challenges. Electives allow students to tailor the program to their interests and career goals. Students may choose as a capstone experience, a summer semester internship working in a professional capacity in conservation biology or a senior thesis research project. Students will be prepared for careers or for graduate work in conservation biology or a broad range of related areas.

The Human Dimensions Concentration prepares students for careers in global, national and community conservation advocacy programs including environmental outreach and policy development and communication. This multi-disciplinary program combines a strong core in the biological sciences with classes in geographic information science, communications, business and economics, and political science. The program is flexible, allowing students to select classes that best match their educational and career goals. Students conclude their program by completing a conservation related service learning project for a conservation organization, unit of government, or business (e.g., land conservancies, Michigan Department of Environmental Quality, watershed organizations, zoos and aquariums).

Program Learning Outcomes:

Foundation: Students in the Conservation Biology program will thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation or experiential learning project.

Capstone Project - Capstone project: Students in the Conservation Biology program will design and conduct a scientific investigation or experiential learning project (ELP) using appropriate tools and techniques in order to demonstrate skill in the practice of conservation biology.

Communication and outreach - Students in the Conservation Biology program will effectively communicate the results or outcomes of their independent project in multiple formats.

Professionalism - Students in the Conservation Biology program will engage in professional activities related to the study, conservation, or management of natural resources.

Post-graduation - careers and further education - Graduates of the Conservation Biology

program will go on to careers in conservation biology or proceed to graduate school to further their education.

Available degrees (see specific degree requirements further down on page):

- [Bachelor of Science Conservation Biology](#)
- [Bachelor of Science Conservation Biology, Human Dimensions Concentration](#)

Degree Requirements

Bachelor of Science Conservation Biology

Departmental Requirements

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [NRES230](#) Introduction to Soil Science 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES284](#) Principles of Forest Conservation 4
- [NRES286](#) Principles of Watersheds 3
- [NRES287](#) Conservation Biology 3
- [NRES299](#) Sophomore Seminar 1
- [NRES304](#) The Human Environment 3
- [BIOL337](#) General Ecology 3
- [BIOL420](#) Evolutionary Analysis 3
- [NRES470](#) Restoration Ecology 3
- [NRES499](#) Senior Capstone 1

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [EVRN131](#) Introduction to GIS and GPS 3
- [EVRN225](#) Intermediate GIS 3
- [EVRN311](#) Environmental Law 3
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Science 4

Global Perspective - Select 1 course from:

- [ECON307](#) Environmental Economics 3
- [SOCY227](#) Population and Ecology 3
- [POLI342](#) International Environmental Policy 3
- Study Abroad 3+

Internship Option

- [NRES398](#) Planning Experiential Learning Project 1
- [NRES497](#) Internship in Conservation Biology 3

or

Research Option

- [NRES399](#) Research Project Design 1
- [NRES495](#) Senior Project 2

Free Electives to total 124 credits. At least 6 elective credits must be from courses at the 300 level or higher.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Conservation Biology, Human Dimensions Concentration

Departmental Requirements

- [BIOL131](#) General Biology I 4
- [BIOL132](#) General Biology II 4
- [NRES199](#) Freshman Seminar 1
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [NRES230](#) Introduction to Soil Science 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES284](#) Principles of Forest Conservation 4
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- [NRES287](#) Conservation Biology 3
- [NRES299](#) Sophomore Seminar 1
- [NRES304](#) The Human Environment 3
- [BIOL337](#) General Ecology 3
- [BIOL420](#) Evolutionary Analysis 3
- [NRES470](#) Restoration Ecology 3
- [NRES499](#) Senior Capstone 1

Support Courses

- [CHEM115](#) General Chemistry I 5
- [EVRN131](#) Introduction to GIS and GPS 3
- [EVRN225](#) Intermediate GIS 3

- [EVRN311](#) Environmental Law 3
- [MATH111](#) College Algebra 3

Marketing & Management* - 1 course from:

- [MGMT360](#) Management Concepts & Applications 3
- [MRKT281](#) Marketing Principles & Strategies 3
- [MRKT385](#) Services Marketing 3

Political Science* - 1 course from:

- [POLI130](#) Introduction State & local Government 4
- [POLI201](#) Public Administration 3

Communication* - 1 course from:

- [COMM280](#) Understanding Mass Media 3
- [COMM302](#) Argumentation & Advocacy 3
- [COMM320](#) Public Relations 4
- [COMM416](#) Communication in Leadership 3

Global Perspective* - 1 course from:

- [ECON307](#) Environmental Economics 3
- [SOCY227](#) Population and Ecology 3
- [POLI342](#) International Environmental Policy 3
- Study Abroad 3+

***At least 2 of the designated electives must be 300 or 400 level**

Internship Option

- [NRES398](#) Planning Experiential Learning Project 1
- [NRES497](#) Internship in Conservation Biology 3

or

Research Option

- [NRES399](#) Research Project Design 1
- [NRES495](#) Senior Project 2

Free Electives to total 124 credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Creative Writing: Bachelor of Arts



Program Description

Featuring small workshop classes and instruction by faculty who are published authors, the Creative Writing program of the School of English and Language Studies emphasizes the art and craft of imaginative writing in a range of genres, including poetry, fiction, non-fiction, and performance writing.

Every year the Creative Writing program holds the Osborn Poetry Contest and Short Story contest. Opportunities for publishing and editing are available through work on the literary journal, the student-edited journal or the monthly magazine. Guest writers, public readings and other events are also featured.

Program Learning Outcomes:

Creation - Students will use the elements of craft and the writing process to (1) develop, (2) plan, (3) create, and (4) complete book-length works of literary merit in a genre of their choice.

Critique - The ability to evaluate and articulate how the aspects of craft, such as image, voice, character, sound, story, and setting, contribute to a text's literary, aesthetic, or emotional effects, using the vocabulary of the discipline.

Revision - The ability to judge and reflect thoughtfully on reader feedback and to isolate and manipulate craft elements in revising poetry, prose, and drama.

Publishing/Pathways - Students will (1) analyze the process by which creative work is evaluated for publication and (2) identify significant trends in publishing.

Pathways - Consider the concept of and determine how to create a sustainable writing life consistent with the University's mission to lead students on "paths to rewarding careers and productive, satisfying lives."

Literature - Students illustrate the ability to (1) read literature closely and (2) borrow craft techniques from professional authors.

Critical Response - Students (1) reflect critically on multiple genres and (2) express constructive feedback to others (a) orally and (b) in writing.

Meta-cognition/Process - Students illustrate the ability to (1) reflect meta-cognitively about process, (a) using feedback from others as well as (b) self-reflection to.

Degree Requirements

Required Courses (48 credits)

- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL223](#) Creative Writing II 3
- [ENGL301](#) Creative Prose Writing 3
- [ENGL302](#) Poetry Writing 3
- [ENGL303](#) Performance Writing 3
- [ENGL409](#) Advanced Writing Workshop 3
- [ENGL480](#) Creative Writing Portfolio I 3
- [ENGL482](#) Creative Writing Portfolio II 3

Select one sequence from:

- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- **or**
- [ENGL233](#) English Literature I 3
- [ENGL234](#) English Literature II 3

Select two additional literature courses at the 300/400 level

Select two additional professional writing skills courses from:

- [ENGL222](#) English Grammar and Language in Context 3
- [ENGL306](#) Technical Writing 3
- [ENGL398](#) Community Workshop Internship 3
- [ENGL399](#) Publishing Internship 3
- [JOUR211](#) Newswriting 3
- [CSCI106](#) Web Page Design and Development 3

Select one theatre course from:

- [THEA251](#) History of Drama and Theatre I 3
- [THEA252](#) History of Drama and Theatre II 3
- [THEA333](#) Studies in the Drama: The Genre and Theater in Context 3
- [THEA309](#) Theatre Studies: (Topic) 3

English Cognate

- [USEM101](#) University Seminar I: Foundation Success 1

Minor (minimum 20 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher

is also required in your Major, as well as in your General Education Requirements.

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Criminal Justice: Bachelor of Science



Program Description

Our program has been in place for over forty years and we have an **outstanding reputation for producing well educated and well trained criminal justice practitioners**. Most or many of your classes will be taught by former and active police officers, corrections officers and lawyers. The program combines academic and hands-on training. Courses in criminal investigation, firearms training and agency internships will help you acquire the necessary skills to excel in your future careers.

The Criminal Justice program has been providing students with an opportunity to achieve self-actualization in a number of broad areas. These include, but are not limited to:

A strong focus on critical thinking. The emphasis on abstract thinking using concepts and a focus on critical thinking begins with the CJUS 101 Introduction to Criminal Justice and carries forward to advanced courses. This regiment introduces and acclimates students into a more advanced mindset to help attain academic excellence throughout their four years at LSSU.

A multi-faceted approach. The Department exposes students to varied approaches within tracks in Criminal Justice. This involves understanding the different disciplines and examining how they inter-relate on particular issues. The program also focuses on both macro and micro level of analyses in helping to gain a more comprehensive understanding of issues under study.

A strong emphasis on Practical Application and Skill Development. The program prides itself on emphasizing and implementing application as a central component in many of its courses. Students are expected to refine and build on their knowledge from prior course work in the application of concepts in real life scenarios. The scenario structure allows students to apply the knowledge in independent and group work to identify, pre-plan, problem solve, and create solutions. Our students further have the opportunity to apply concepts during Senior Internships while placed at agencies across the state and nation.

A strong emphasis on Life Long Learning Skills. The program takes pride in being part of an elite academic community that offers undergraduate students the opportunity to undertake actual research. The program believes that all courses taught in the curriculum enhance the student's ability to be Life Long Learners and provides students the necessary tools to conduct a research project. It is identified that our students will be better prepared for graduate school, law school, or other areas of life where these skills can be applied.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and

Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (36 credits)

- [USEM101](#) University Seminar I: Foundation Success 1
- [CJUS101](#) Introduction to Criminal Justice 3
- [CJUS102](#) Police Process 3
- [CJUS243](#) Investigation 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS321](#) Ethical Issues in Public Safety 3
- [CJUS345](#) Statistics and Design for Public Safety 4
- [CJUS401](#) Senior Seminar 3
- [CJUS402](#) Criminal Justice Internship 3-9
- [CJUS409](#) Procedural Criminal Law 3
- CJUS 300/400 Level Electives 4

Select one of the following:

- [CJUS140](#) Criminological Theory and Correctional Client Growth 3
- or
- [SOCY214](#) Criminology 3

Support Courses (16-17 credits)

- [POLI120](#) Introduction to Legal Processes 3
- [PSYC101](#) Introduction to Psychology 4
- [PSYC259](#) Abnormal Psychology 3
- Approved Diversity Course 3

Select one of the following:

- [POLI110](#) Introduction American Government and Politics 4
- or
- [POLI160](#) Introduction Canadian Government Politics 3

Complete at least one Concentration other than MCOLES:

Generalist

- [CJUS110](#) Introduction to Corrections 3
- [CJUS212](#) Loss Control 3
- CJUS200/300/400 Level Electives 9
- CJUS300/400 Level Electives 6

Select one of the following:

- [CJUS313](#) Crisis Intervention Deviant Behavior 3
or
- [CJUS411](#) Police Operations 5

Select one of the following:

- [CJUS325](#) Homeland Security/Emergency Service 3
or
- [CJUS355](#) Juvenile Justice 3

(Generalist can only be paired with MCOLES Concentration)

Conservation Officer

- [BIOL132](#) General Biology: Organisms 4
- [NRES203](#) Fund of Natural Resources 3
- [CJUS444](#) Criminalistics 4
- [EMED189](#) Medical First Responder 3
- [EVRN131](#) Introduction to GIS and GPS 3
- [FIRE101](#) Introduction to Fire Science 3
- [FIRE102](#) Wildland and Rural Fire 3
- [NSCI103](#) Environmental Science 3
- [NSCI104](#) Environmental Science Lab 1

Select two of the following:

- [BIOL202](#) Field Botany 3
- [NRES240](#) Natural History of the Vertebrate 3
- [NRES310](#) Ichthyology 3
- [NRES312](#) Ornithology 3

Public Safety

- [CJUS203](#) Cyberterrorism 3
- [CJUS206](#) Law Enforcement/Loss Control Internship 3
- [CJUS302](#) Hate Crimes 3
- [CJUS444](#) Criminalistics 4
- [FIRE101](#) Introduction to Fire Science 3
- [FIRE204](#) Fire Protection Hydraulics and Pumps 3
- [FIRE206](#) Fire Protection Systems, Equipment, Indust Fire Protection 3
- [FIRE211](#) Tactics and Strategy 3
- [FIRE219](#) Firefighter Essentials 3
- [FIRE220](#) Fire Science Certification 4
- [EMED189](#) Medical First Responder 3

Select one of the following:

- [CJUS313](#) Crisis Intervention Deviant Behavior 3
or
- [CJUS411](#) Police Operations 5

Law Enforcement

- [CJUS110](#) Introduction to Corrections 3
- [CJUS201](#) Firearms Training 1
- [CJUS203](#) Cyberterrorism 3
- [CJUS206](#) Law Enforcement/Loss Control Internship 3
- [CJUS212](#) Loss Control 3
- [CJUS302](#) Hate Crimes 3
- [CJUS444](#) Criminalistics 4
- [FIRE101](#) Introduction to Fire Science 3

Select one of the following:

- [CJUS313](#) Crisis Intervention Deviant Behavior 3
- or
- [CJUS411](#) Police Operations 5

Homeland Security

- [CJUS103](#) Introduction to Terrorism/Homeland Security 3
- [CJUS203](#) Cyberterrorism 3
- [CJUS204](#) Domestic and International Terrorism 3
- [CJUS302](#) Hate Crimes 3
- [CJUS303](#) Critical Infrastructure Protection 3
- [CJUS325](#) Homeland Security/Emergency Service 3
- [CJUS444](#) Criminalistics 4
- [FIRE101](#) Introduction to Fire Science 3
- [FIRE111](#) Hazardous Materials 3
- [POLI130](#) Introduction State/Local Government 4

Select one of the following:

- [CJUS313](#) Crisis Intervention Deviant Behavior 3
- or
- [CJUS411](#) Police Operations 5

Select one of the following:

- [POLI201](#) Introduction to Public Administration 3
- or
- [POLI241](#) Introduction to International Relations 4
- or
- [POLI334](#) Middle East Politics 3

Criminalistics

- [CJUS444](#) Criminalistics 4
- [BIOL131](#) General Biology: Cells 4
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introductory Biochemistry 4
- [MATH112](#) Calculus Business/Life Science 4
- [PHYS221](#) Principles of Physics I 4

Select one of the following:

- [CJUS313](#) Crisis Intervention Deviant Behavior 3
or
- [CJUS411](#) Police Operations 5

MCOLES

- [CJUS197](#) Physical Fitness Public Safety 1
- [CJUS197](#) Physical Fitness Public Safety 1
- [CJUS201](#) Firearms Training 1
- [CJUS301](#) Advanced Firearms 1
- [CJUS411](#) Police Operations 5
- [CJUS444](#) Criminalistics 4
- [CJUS450](#) Skills Academy 2
- [EMED189](#) Medical First Responder 3

A minimum of 24 credits of 300/400 level CJUS Coursework is required for graduation.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Early Childhood Education: Bachelor of Science



Program Description

The bachelor in early childhood education prepares professionals to provide high quality education and care for children birth through age eight in a wide variety of settings. Graduates are qualified to work as teachers and directors in private early childhood programs; state-funded preschool programs, such as Great Start Readiness Preschool; and federally-funded HeadStart programs. Students develop their understanding of typically and atypically developing children through integrated coursework and field experience, as well as two semester-long practicums. The required minor provides the opportunity for students to explore a related field, adding to their knowledge and skills for working with young children and their parents, or expanding their expertise for employment opportunities.

Program Learning Outcomes:

Candidates demonstrate their content area knowledge in the design, implementation, and evaluation of experiences that result in developmental and learning outcomes for each child.

Candidates apply their knowledge and understanding of young children's typical and atypical developmental needs to create healthy, respectful, supportive, and challenging learning environments for each child.

Candidates demonstrate in-depth knowledge of systematic observations, documentation, and assessment strategies through the effective use of these techniques to promote positive outcomes for each child.

Candidates demonstrate understanding and value of the important and complex characteristics of children's families and communities in their development of respectful, reciprocal relationships and partnerships.

Candidates demonstrate professional dispositions throughout coursework, field experience, and practicums.

Candidates demonstrate professional identification with and leadership skills in the early childhood field through articulating and advocating for sound professional practices and public policies.

Degree Requirements

Departmental Requirements (54 credits)

- [CHLD101](#) Introduction to Early Child Education 4
- [CHLD103](#) Learning Environments for the Young Child 4
- [CHLD150](#) Observation and Assessment 4
- [CHLD210](#) Infants and Toddlers 4
- [CHLD225](#) Emergent Literacy 3
- [CHLD241](#) STEM Foundations for the Young Child 4
- [CHLD242](#) Creativity & Humanities for the Young Child 4
- [CHLD245](#) Early Childhood Curriculum 3
- [CHLD260](#) Practicum I 4
- [CHLD270](#) Administration of Early Childhood Programs 2
- [CHLD310](#) Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- [CHLD330](#) Philosophical Foundations of Early Childhood Education 2
- [CHLD350](#) Early Childhood Facilities Management 2
- [CHLD410](#) Practicum II 4
- [CHLD440](#) Family and Community Partnerships 3
- [CHLD495](#) Senior Project 4

Cognate Requirements (12 credits)

- [EDUC101](#) Self as Learner 1
- [BIOL105](#) Function of the Human Body 4
- [EMED181](#) First Aid 1
- [HLTH104](#) Nutrition for Early Childhood 3
- [SOCY103](#) Cultural Diversity 3

Approved Minor (minimum 20 credits)

Free Electives (minimum 9 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Electrical Engineering: Bachelor of Science

Program Description

The electrical engineering program, which is accredited by EAC of ABET, combines topics from science, math and engineering in order to study and develop solutions to electrical and computer problems. The program contains a strong laboratory emphasis with plenty of opportunities to work on real electrical systems. Some of the program highlights are:

- The teaching emphasis is on preparing you to solve real-world problems.
- You have three choices for fulfillment of your senior year experience. You may pursue opportunities in cooperative education, industry-based projects or research projects.
- You will study assembly language, circuit design, microcontroller hardware and software, digital electronics, and networks.
- Engineering courses begin in your freshman year.
- The program provides an excellent mix of theory and practical laboratory experiences.

Your Degree Options — You may choose to follow one of the following degree concentrations while studying electrical engineering at LSSU. They are: Robotics and Automation Concentration, Digital Systems Concentration and Sustainable Energy Concentration. The Robotics and Automation Concentration provides you with a strong background in robotics, machine vision, sensors, communications and automation. The Digital Systems Concentration will give you additional knowledge in digital design, digital signal processing and microcontroller systems. The Sustainable Energy Concentration provides increased employment opportunities as demand for engineers with knowledge of the power industry and sustainable/renewable energies grows.

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

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and

make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Departmental Requirements:

Mathematics

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH308](#) Probability and Mathematical Statistics 3
- [MATH310](#) Differential Equations 3

Sciences

- [CHEM115](#) General Chemistry I 5
- [PHYS231](#) Applied Physics for Engineers and Scientists I 4
- [PHYS232](#) Applied Physics for Engineers and Scientists II 4

Engineering

- [EGEE125](#) Digital Fundamentals 4
- [EGEE210](#) Circuit Analysis 4
- [EGEE250](#) Microcontroller Fundamentals 4
- [EGEE280](#) Introductory Signal Processing 4
- [EGEE310](#) Network Analysis 4
- [EGEE330](#) Electro-Mechanical Systems 4
- [EGEE345](#) Fundamentals of Engineering Electromagnetics 3
- [EGEE370](#) Electronic Devices 4
- [EGEE475](#) Power Electronics 4
- [EGNR101](#) Introduction to Engineering 2
- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGNR265](#) "C" Programming 3
- [EGNR340](#) Advanced Numerical Methods for Engineers 1
- [EGNR346](#) Probability and Statistics Lab for Engineers 1
- [EGEM220](#) Statics 3
- [EGRS460](#) Control Systems 4

Technical Electives (Minimum of 13 credits):

For students obtaining a concentration, the concentration electives must meet

the requirements listed below. Otherwise, all 13 technical elective credits may be selected from the Technical Electives List.

- [EGEE320](#) Digital Design (or higher level EGEE) 3
- [EGEM320](#) Dynamics 3
- [EGET310](#) Electronic Manufacturing Processes 4
- [EGME225](#) Mechanics of Materials (or higher level EGME) 3
- [EGRS365](#) Programmable Logic Controllers 3
- [EGRS461](#) Design of Control Systems 4
- [MATH215](#) Fund Concepts of Mathematics (or higher MATH) 3
- or any course from the listed concentrations

Robotics and Automation Concentration (C or better grade required in all courses)

- [EGRS385](#) Robotics Engineering 4
- [EGRS430](#) Systems Integration & Machine Vision 4
- [EGRS435](#) Automated Manufacturing Systems 3

Digital Systems (C or better grade required in all courses)

- [EGEE320](#) Digital Design 4
- [EGEE355](#) Microcontroller Systems 4
- [EGEE425](#) Digital Signal Processing 3

Sustainable Energy Concentration (C or better grade required in all courses)

- [EGNR261](#) Energy Systems and Sustainability 3
- [EGNR361](#) Energy Systems and Sustainability Lab 1
- [EGEE411](#) Power Distribution and Transmission 3

Complete one course from:

- [EGNR362](#) Vehicle Energy Systems 3
- [EGME337](#) Thermodynamics 4

Senior Sequence (Complete one of the following sequences):

Industrial Project

- [EGNR491](#) Engineering Design Project I 3
- [EGNR495](#) Engineering Design Project II 3

Cooperative Project

- [EGNR250](#) Cooperative Education 2
- [EGNR450](#) Cooperative Education Project I 4
- [EGNR451](#) Cooperative Education Project II 3
- [EGNR491](#) Engineering Design Project I 3

Research Project

- [EGNR260](#) Engineering Research Methods 2
- [EGNR460](#) Engineering Research Project I 4
- [EGNR461](#) Engineering Research Project II 2

32 credits from Mathematics (including [EGNR340](#)) and Natural Sciences is required.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Electrical Engineering Technology: Bachelor of Science

Program Description

LSSU's Electrical Engineering Technology (EET) program integrates knowledge from areas of study such as science, math, computers, electrical engineering, management and economics in order to prepare you for an engineering technology career with the potential for growth into management. The EET program includes topics such as C programming, robotics, programmable logic controllers (PLCs), digital system design, embedded microprocessor systems, and circuit board layout and population. Most technical classes in the curriculum include a laboratory along with the lecture.

Students pursuing the BS degree in EET have the option to minor in Robotics Technology. LSSU is one of a few universities in the U.S. to offer an extensive Robotics Technology minor as part of the BS degree in EET and is home to one of the best robotics educational facilities in North America. The minor in Robotics Technology will be indicated on your transcripts.

Some of the program highlights are:

- The program provides an excellent mix of theory and practical laboratory experiences, preparing you to solve real-world problems.
- Engineering courses begin in the freshman year.
- Technical electives may be selected to obtain a minor in Robotics Technology.
- Less mathematics than the Electrical Engineering program.

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

Additional Degree Information

- *Option in:* General
- *Minor:* Robotics Technology

Program Learning Outcomes:

Apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline

Design systems, components, or processes meeting specified needs for broadly-

defined engineering problems appropriate to the discipline

Apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature

Conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes

Function effectively as a member as well as a leader on technical teams

Degree Requirements

Departmental Requirements

- [CHEM108](#) Applied Chemistry 3
- [CHEM109](#) Applied Chemistry Lab 1
- [ECON302](#) Managerial Economics 4
- [EGEE125](#) Digital Fundamentals (C or better required) 4
- [EGEE250](#) Microcontroller Fundamentals 4
- [EGEE320](#) Digital Design 4
- [EGEE355](#) Microcontroller Systems 4
- [EGET110](#) Applied Electricity (C or better required) 4
- [EGET175](#) Applied Electronics (C or better required) 4
- [EGET310](#) Electronic Manufacturing Processes 4
- [EGME141](#) Solid Modeling 3
- [EGNR101](#) Introduction to Engineering 2
- [EGNR140](#) Linear Algebra & Numerical Methods for Engineers 2
- [EGNR245](#) Calculus Applications for Technology 3
- [EGNR265](#) C Programming 3
- [EGNR310](#) Advanced Quality Engineering 3
- [EGRS365](#) Programmable Logic Controllers 3
- [EGRS380](#) Robotics Technology 2
- [EGRS381](#) Robotics Technology Lab 1
- [MATH111](#) College Algebra (C or better required) 3
- [MATH112](#) Calculus for Business and Life Science 4
- [MATH131](#) College Trigonometry 3
- [MATH207](#) Principles of Statistical Methods 3
- [MGMT375](#) Introduction to Supply Chain Management 3
- [PHYS221](#) Elements of Physics I (C or better required) 4
- [PHYS222](#) Elements of Physics II 4
- Technical Elective 2

Select one of the following Senior Sequence options to complete the Electrical Engineering Technology Degree:

Industrial Project

- [EGNR491](#) Engineering Design Project I 3
- [EGNR495](#) Engineering Design Project II 3

or

Cooperative Project

- [EGNR250](#) Cooperative Education 2
- [EGNR450](#) Cooperative Education Project I 2
- [EGNR451](#) Cooperative Education Project II 2
- [EGNR491](#) Engineering Design Project I 3

Technical Electives 10

- [CSCI163](#) Troubleshooting and Repair of Personal Computers 3
- EGEE305 Analog & Digital Electronics 3
- EGEE365 Vehicle Instrumentation 4
- [EGME141](#) Solid Modeling 3
- [EGME240](#) Assembly Modeling and GD&T 3
- [EGME275](#) Engineering Materials 3
- [EGME276](#) Strength of Materials Lab 1
- [EGME338](#) Fluid Mechanics 2
- [EGME310](#) Vehicle Development and Testing 2
- [EGMT225](#) Statics and Strength of Materials 4
- EGMT310 CNC Manufacturing Processes 4
- [EGMT332](#) Thermodynamics and Heat Transfer for Technologists 4
- [EGRS215](#) Robotics Technology 2
- [EGRS430](#) Systems Integration and Machine Vision 4
- [EGRS480](#) Control Systems & Automation 3
- [EGRS481](#) Control Systems & Automation Lab 1
- [MATH215](#) Fundamental Concepts of Math or higher 3

Students wishing to complete the Robotics Technology minor should take the following as technical or free electives:

- [EGRS430](#) Systems Integration and Machine Vision 4
- [EGRS480](#) Control Systems & Automation 3
- [EGRS481](#) Control Systems & Automation Lab 1

Free Electives 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Elementary Education: Bachelor of Arts/Science



Program Description

The Elementary Education program is highlighted by in-depth study in a subject major, subject concentration, or student-focused concentration, extended field experience in elementary school settings; and focused development of the knowledge and skills critical for effective teachers.

Elementary-level teacher certification in Michigan permits individuals to teach in self-contained classrooms at grade K - 8, and in all subjects at grades K - 5. Individuals may also qualify to teach the subjects of their academic major or minors in grades 6 - 8.

Students begin their studies with a focus on general education requirements, and an academic major or specific concentration. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Upper level professional education coursework, along with the completion of the major or concentration, is the focus for the junior and senior years. Student teaching, a semester-long culminating experience, may be completed in the spring of the fourth year or fall of the fifth year, depending on the individual student's progress through the program. Generally, this student teaching experience will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification Elementary Education tests must be passed prior to beginning student teaching.

Note: Candidates who pass the Michigan Test for Teacher Certification in their major or concentration meet the requirements of the No Child Left Behind Act and are considered "highly qualified" for the subject areas of the endorsements shown on their Michigan teaching certificates.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Elementary Education Bachelor of Arts/Sciences are:

Teaching Concentration - Students may complete one of the following options:

- **Academic Concentration:** Major in either Language Arts or Mathematics (see requirements in this catalog for these teaching majors)

or

- **Language Arts and Mathematics Concentration** (see requirements listed below)

or

- **Early Childhood Education Concentration** (see requirements listed below)

Language Arts and Mathematics Concentration (25 credits)

- [ENGL221](#) Introduction to Creative Writing 3
 - [ENGL231](#) American Literature I 3
 - [ENGL232](#) American Literature II 3
 - [ENGL320](#) Responding to Writing 3
 - [THEA112](#) Acting for Beginners 3
 - [MATH215](#) Fundamental Concepts of Mathematics 3
 - [MATH321](#) History of Mathematics 3
 - [MATH112](#) Calculus for Business & Life Sciences 4
- or**
- [MATH151](#) Calculus I 4

Early Childhood Education Concentration (28 credits)

- [CHLD150](#) Observation and Assessment 4
- [CHLD210](#) Infants and Toddlers 4
- [CHLD225](#) Emergent Literacy 3
- [CHLD245](#) Early Childhood Curriculum 3
- [CHLD270](#) Administration of Early Childhood Programs 2
- [CHLD310](#) Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- [CHLD440](#) Family and Community Partnerships 3
- [CHLD480](#) Directed Teaching Seminar 1
- [CHLD492](#) Directed Teaching : Early Childhood 5

Elementary Planned Program (49 credits)

- [MATH103](#) Number Systems & Problem Solving 4
- [MATH104](#) Geometry & Measurement 4
- [MATH207](#) Principles of Statistical Methods 3
- [BIOL104](#) Survey of General Biology 4
- [NSCI101](#) Great Lakes Region: Chem, Phy, and other Laws of Nature 4
- [NSCI102](#) Great Lakes Region: Geology and Resources 4
- [POLI110](#) American Government 4
- [GEOG201](#) World Regional Geography 4
- [HIST131](#) United States History I 4
- [HIST321](#) History of Michigan 2
- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL222](#) English Grammar & Language in Context 3
- [ENGL335](#) Children's Literature in the Classroom 3
- [CHLD225](#) Emergent Literacy 3

Professional Education Sequence (48 credits)

- [EDUC101](#) Self as Learner 1
- [EDUC250](#) Student Diversity & Schools 4
- [EDUC301](#) Learning Theory and Teaching Practice 3
- [EDUC330](#) Reading in the Elementary Classroom 3
- [EDUC350](#) Integrating Technology into 21st Learning Environments 3
- [EDSE301](#) Introduction to Special Education 3
- [EDUC410](#) Corrective Reading in the Classroom 3
- [EDUC411](#) Elementary Language Arts and Methods Across the Curriculum 2
- [EDUC415](#) General Instructional Methods 2
- [EDUC420](#) Math Methods for Elementary Teachers 2
- [EDUC421](#) Science Methods for Elementary Teachers 2
- [EDUC422](#) Social Studies Methods for Elementary Teachers 2
- [EDUC423](#) Arts Methods for Classroom Teachers 2
- [EDUC424](#) Health/Physical Education Methods for Classroom Teachers 2
- [EDUC460](#) Classroom Management 2
- [EDUC480](#) Directed Teaching Seminar 2
- [EDUC492](#) Directed Teaching 10

Formal admission to the Elementary Education program, qualification for student teaching, and successful completion of the program requires:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher.
- Completion of all required courses in the teaching major or concentration with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the elementary planned program with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a GPA of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Elementary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program

approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Elementary Education: Special Education - Learning Disabilities: Bachelor of Science

Program Description

The Special Education - Learning Disabilities program expands the basic elementary education program to prepare teachers to work with students with learning disabilities from kindergarten through grade 12. Program features include extended field experience in regular and special education settings, and focused development of the knowledge and skills critical for effective teachers.

Graduates are prepared for elementary-level teacher certification in Michigan, which permits individuals to teach in self-contained classrooms at grades K-8, and in all subjects at grade K-5, as well as a Learning Disabilities endorsement for grades K-12. Individuals may also qualify to teach the subject of an optional academic minor in grades 6-8.

Students begin their studies with a focus on general education requirements and elementary planned program coursework. If they opt for an academic minor this coursework also begins in year one. They complete the initial professional education coursework in their sophomore year, and apply for formal admission to the program at the end of that year. By that time, they will have also passed the Michigan Test for Teacher Certification Professional Readiness Examination.

Special education and upper-level professional education coursework, along with the completion of the elementary planned program and optional minor, are the focuses for the junior and senior years. Students in the special education program complete two semesters of student teaching, one in a regular elementary education setting and one in a special education setting. These experiences are normally in the fifth year of the program, depending on the individual student's progress through the program. Generally, student teaching will be in the Eastern Upper Peninsula or in Sault Ste. Marie, Ontario. The Michigan Test for Teacher Certification Elementary Education and Learning Disabilities tests must be passed prior to beginning student teaching.

Note: Candidates who complete an optional minor and pass the Michigan Test for Teacher Certification subject test for that minor meet the requirements of the No Child Left Behind Act and are considered "highly qualified" for the subject area of the endorsement shown on their Michigan teaching certificates.

Program Learning Outcomes:

Content Knowledge: Candidates apply appropriate depth of knowledge to engage learners in mastering content.

Learner-centeredness: Candidates value the uniqueness of each individual

through their commitment to learners and learner-centered processes.

Pedagogical Knowledge: Candidates engage learners using a variety of instructional strategies and perspectives.

Professional dispositions: Candidates demonstrate professional dispositions, assuming the full role of the teacher.

Reflection: Candidates self-evaluate and reflect on feedback from others, including students, to continually improve their pedagogical practices.

Degree Requirements

The components of the Elementary Education: Special Education - Learning Disabilities: Bachelor of Science program are:

Special Education (32 credits)

- [EDSE301](#) Introduction to Special Education 3
- [EDSE302](#) Communication and Community 3
- [EDSE320](#) Introduction to Learning Disabilities 4
- [EDSE401](#) Issues and Trends Impacting Learning Disabilities & Special Ed 3
- [EDSE403](#) Assessment and Diagnosis 3
- [EDSE404](#) Instruction and Technology for Learning Disabilities-Preschool to Empl 4
- [EDSE480](#) Student Teaching Seminar: Special Education 1
- [EDSE492](#) Internship/Supervised Student Teaching: Learning Disabilities 8
- [PSYC301](#) Exceptional Child and Adolescent 3

Elementary Planned Program (49 credits)

- [MATH103](#) Number Systems & Problem Solving 4
- [MATH104](#) Geometry & Measurement 4
- [MATH207](#) Principles of Statistical Methods 3
- [BIOL104](#) Survey of General Biology 4
- [NSCI101](#) Great Lakes Region: Chem, Phy, and other Laws of Nature 4
- [NSCI102](#) Great Lakes Region: Geology and Resources 4
- [POLI110](#) Introduction to American Government and Politics 4
- [GEOG201](#) World Regional Geography 4
- [HIST131](#) United States History I 4
- [HIST321](#) History of Michigan 2
- [ENGL180](#) Introduction Literary Studies 3
- [ENGL222](#) English Grammer & Language in Context 3
- [ENGL335](#) Children's Literature 3
- [CHLD225](#) Emergent Literacy 3

Academic Minor (Optional): Students may complete a teaching minor in either Language Arts or Mathematics (see the requirements in this catalog for these teaching minors).

Professional Education Sequence (45 credits)

- [EDUC101](#) Self as Learner 1
- [EDUC250](#) Student Diversity & Schools 4
- [EDUC301](#) Learning Theory and Teaching Practice 3
- [EDUC330](#) Reading in the Elementary Classroom 3
- [EDUC350](#) Integrating Technology 3
- [EDUC410](#) Corrective Reading in the Classroom 3
- [EDUC411](#) Elementary Language Arts and Methods Across the Curriculum 2
- [EDUC415](#) General Instructional Methods 2
- [EDUC420](#) Math Methods for Elementary Teachers 2
- [EDUC421](#) Science Methods for Elementary Teachers 2
- [EDUC422](#) Social Studies Methods for Elementary Teachers 2
- [EDUC423](#) Arts Methods for Classroom Teachers 2
- [EDUC424](#) Health/Physical Education Methods for Classroom Teachers 2
- [EDUC460](#) Classroom Management 2
- [EDUC480](#) Directed Teaching Seminar 2
- [EDUC492](#) Directed Teaching 10

Formal admission to the program, qualification for student teaching, and successful completion of the program requires:

- Completion of the Professional Education Sequence courses with a grade of B- (2.70) or higher.
- Completion of all required courses in the education cognates and teaching minor with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the elementary planned program with a GPA of 2.70 or higher and no grade below a C (2.00).
- Completion of the General Education Core Requirements with a gpa of 2.00 or higher.
- Passing scores on all required Michigan Test for Teacher Certification tests.

The Elementary Education program undergoes periodic review, evaluation, and alignment with the Michigan Department of Education standards. Since program approval and renewal cycles vary, individuals should contact the School of Education regularly to confirm the current requirements of each program component. Graduates must meet the standards that are in place at the time of completion of their programs, in order to be recommended to the Department of Education for teacher certification.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Environmental Science: Bachelor of Science

Program Description

Environmental Science is the study of human interaction with the environment, by seeking sustainable solutions for environmental problems such as water pollution, energy and climate, and ecosystem integrity, environmental scientists help ensure a safe, healthful environment for all living things.

Graduates with a bachelor of science in Environmental Science work in many disciplines, government agencies, and industries. Environmental Science graduates have a wide range of career opportunities including areas such as sustainability, field sampling, hydrology, environmental health, pollution control, environmental toxicology, climate science, ecology, and water quality analysis. While many graduates enter the workforce with a bachelors degree, some students proceed on to graduate school in natural sciences, policy, law, or sustainability studies. Internships in Environmental Science are encouraged where students can gain valuable real-world experience while gaining college credit - a faculty advisor can assist students in identifying internship opportunities locally, regionally, and internationally. In addition to their course work, all students participate in an applied research project in close collaboration with a faculty member to address a meaningful environmental-based problem. These projects, through the excellent preparation they provide our students, are often cited as important factors in successful job searches and entry into graduate programs.

Program Learning Outcomes:

Knowledge & Skills – The Environmental Science graduate will demonstrate 1. Factual and theoretical knowledge of chemistry, biology, earth, and environmental science 2. Cross-disciplinary Field & laboratory knowledge and skills 3. Applied Analytical Skills 4. Communication skills 5. Information retrieval skills 6. safe laboratory practices.

Employability - The Environmental Science graduate will demonstrate readiness for employment in business or industry as an environmental scientist, biological technician, GIS Analyst, physical science technician, pollution control specialist, laboratory chemist environmental specialist or environmental field technician.

Readiness for Graduate Study – The Environmental Science graduate will demonstrate readiness for graduate study in environmental science, environmental chemistry, environmental toxicology, Environmental management, environmental policy, biochemistry, or other related fields.

Technical Skills - The Environmental Science graduate will demonstrate proficiency and familiarity with combination of chemical instrumentation and modern computer software for environmental and chemical analysis and for environmental research.

Degree Requirements

Bachelor of Science Environmental Science

Environmental Science Core Requirements (87-89 credits)

- [NSCI103](#) Environmental Science 3
- [EVRN131](#) Introduction to GIS/GPS 3
- [EVRN211](#) Field Data Methods 1
- [EVRN225](#) Intermediate GIS 3
- [EVRN311](#) Environmental Law 3
- [EVRN315](#) Human Impacts on Environment 4
- [EVRN317](#) Environmental Health Apps 4
- [EVRN325](#) Geospatial Analysis 3
- [EVRN341](#) Fate & Transport in the Environment 4
- [EVRN389](#) Environmental Research Methods 3
- [EVRN435](#) Environmental Systems 3
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL337](#) General Ecology 3
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [NRES199](#) Freshman Seminar 1
- [NRES230](#) Introduction to Soil Science 4
- [NRES299](#) Sophomore Seminar 1
- [NRES399](#) Research Project Design 1
- [NRES499](#) Senior Capstone 1

Complete one course from the following two:

- [EVRN395](#) Senior Project 2
- [NRES497](#) Experiential Learning Project 3

Complete one course from the following two:

- [NSCI116](#) Introduction to Oceanography 4
- [GEOG108](#) Physical Geography: Meteorology & Climatology 4

Complete one course from the following two:

- [MATH112](#) Calculus for Business and Life Sciences 4
- [MATH151](#) Calculus I 4

Complete one course from the following three:

- [BUSN211](#) Business Statistics 3
- [MATH207](#) Principles of Statistical Methods 3
- [BIOL280](#) Biostatistics 3

Complete one course from the following three:

- [GEOL334](#) Hydrologic Systems: Surface and Groundwater 4
- [NRES286](#) Principles of Watersheds 3
- [NRES345](#) Limnology

Complete requirements for at least one of the following approved Minors (other minors may be substituted with advisor approval). Note: Courses taken toward completion of the program/general education requirements can be applied toward this requirement:

- Biology
- Biochemistry
- Chemistry
- Environmental Policy
- Geographic Information Science (GIS)
- Geology
- International Studies
- Marine Freshwater Sciences
- Mathematics
- Natural Resources
- Outdoor Leadership
- Political Science
- Pre-Law
- Public Health
- Sociology
- Society & Environment
- Sustainability

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Finance and Economics: Bachelor of Science

Program Description

This degree requires successful completion of a minimum of 124 semester credits as prescribed on the following page. The study of finance and economics develops the capacity for analytical reasoning and critical thinking, the most important decision making tools in business, government, education, and in your personal life.

Organizations need planners and problem-solvers, people who are logical thinkers. Economists and financiers learn to develop accurate information upon which to make decisions from the vast quantities of complex and often conflicting data generated in today's global economy. Employers hire these professionals because of their abilities for careful analysis, planning and decision making.

Graduate, Professional and Continuing Education

This degree program is an excellent preparation for graduate and professional education in such fields as finance, economics, accounting, business administration and law. Graduates may seek professional certification in related professions such as Certified Financial Planner (CFP), Chartered Financial Analyst (CFA), Chartered Financial Consultant (ChFC), Chartered Life Underwriter (CLU) and Certified Management Accountant (CMA).

Program Learning Outcomes:

Analytical Skills - Apply analytical skills.

Financial Statement Analysis - Memorize and apply key financial ratios.

Terminal Value - List two methods used to estimate Terminal Value and explain why it's important.

Derivatives - Explain how to use options to reduce or increase risk.

Advanced Understanding of Macroeconomics and Microeconomics - Apply advanced concepts from macroeconomics and microeconomics to answer complex problems and draw conclusions.

Best Practices - Calculate the Weighted Average Cost of Capital using best practices.

Business Knowledge - Apply knowledge of business core subjects.

Professional Skills - Apply skills in research, communications and critical thinking.

Degree Requirements

Common Professional Component (48 credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [BUSN121](#) Introduction to Business 3
- [BUSN211](#) Business Statistics 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- [BUSN403](#) Business, Government & Society 3
- [BUSN466](#) Business Policy 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- [MGMT280](#) Intro Management Information Systems 3
- [MGMT360](#) Management Concepts & Apps 3
- [MGMT371](#) Operations/Business Analytics 3
- [MRKT281](#) Marketing Principles & Strategy 3

Major Requirements (Minimum 34 credits)

- [BUSN101](#) Freshman Seminar 1
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus Business/Life Science 4

FINC 400-Level Courses. Choose two from the following:

- [FINC443](#) Insurance 4
- [FINC446](#) Financial Analysis and Policy 4
- [FINC448](#) Investment Strategy 4

Economics Option (18 credits)

- [ECON407](#) Introductory Econometrics 3
- ECON300-400 Level Electives (3 Courses) 9
- Economics, Finance or Mathematics Electives 6

Finance Option (18 credits)

- FINC** 400-level Elective 4
- Finance, Economics or Accounting Electives 14

***FINC 400-level courses include [FINC446](#), Financial Analysis & Policy; [FINC448](#), Investment Strategy; and [FINC443](#), Insurance. Two courses from this group must be completed for all options; all three courses must be completed for the finance option.*

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher

is also required in your Major, as well as in your General Education Requirements.

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Fire Science - Generalist: Bachelor of Science

Program Description

This emphasis is designed for students preparing for professional fire service positions in public and private sectors. The emphasis is designed to provide the student with a working knowledge of the many different areas of the fire service, giving the students the ability to function in fire departments and participate in fire prevention and investigation divisions. Students in this emphasis will complete the requirements for Firefighter I and II state certifications established by the Michigan Firefighters Training Council.

Program Learning Outcomes:

USE OF EVIDENCE (UE) - Graduates of the Fire Science programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS) - Graduates of the Fire Science programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR) - Graduates of the Fire Science programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (54-55 credits)

- [CJUS341](#) Fire Cause & Arson Investigation 3
- [FIRE101](#) Introduction to Fire Science 3
- [FIRE111](#) Hazardous Materials 3
- [FIRE197](#) Physical Fitness for Public Safety 1
- [FIRE201](#) Fire Protection Construction Concepts 3
- [FIRE204](#) Fire Protection Hydraulics & Pumps 3
- [FIRE206](#) Fire Protection Systems Equipment and Industrial Fire Protection 3
- [FIRE211](#) Tactics & Strategy 3
- [FIRE219](#) Firefighter Essentials 3
- [FIRE220](#) Fire Science Certification 4
- [FIRE301](#) Code Enforcement Inspection and Fire Prevention 3
- [FIRE309](#) Fire-Related Human Behavior 3
- [FIRE312](#) Hazardous Materials Management 4

- [FIRE315](#) Company Level Supervision and Management 3
- [FIRE401](#) Senior Seminar 3
- [FIRE402](#) Fire Service and the Law 3
- [FIRE403](#) Fire Science Internship 3

Statistics: Choose one of the following:

- [CJUS345](#) Statistics and Design for Public Safety 4
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC210](#) Statistics 3
- [SOCY302](#) Statistics for Social Science 4

Minor or Paramedic License (20 credits) Students may complete an approved minor. The minor must be an approved minor other than Fire Science.

Electives (9 - 14 credits)

Note: A minimum of 24 credits of 300/400 level coursework is required for graduation.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Fire Science - Generalist Non Certification: Bachelor of Science

Program Description

This emphasis is designed for long-distance students who currently possess firefighting certifications; it also serves those students who do not desire, or have the physical ability, to enter the fire service as active firefighters. This emphasis is designed for students who seek promotions or desire a professional position in the private fire service sector, and provides students a wide knowledge base of the fire service. Students in this emphasis will have the education necessary to work in preventive, investigative, and educational areas of the fire service.

Program Learning Outcomes:

USE OF EVIDENCE (UE) - Graduates of the Fire Science programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS) - Graduates of the Fire Science programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR) - Graduates of the Fire Science programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (45-46 credits)

- [FIRE101](#) Introduction to Fire Science 3
- [FIRE204](#) Fire Protection Hydraulics and Pumps 3
- [FIRE206](#) Fire Protection Systems Equipment and Industrial Fire Prevention 3
- [FIRE301](#) Code Enforcement, Inspection and Fire Prevention 3
- [FIRE315](#) Company Level Supervision and Management 3
- [FIRE401](#) Senior Seminar 3

Statistics: Choose one of the following:

- [CJUS345](#) Statistics and Design for Public Safety 4

- [MATH207](#) Principles of Statistical Methods 3
- [PSYC210](#) Statistics 3
- [SOCY302](#) Statistics for Social Science 4

Electives - Select at least 30 additional credits of Fire Science and Criminal Justice Electives from:

- [CJUS103](#) Introduction to Terrorism and Homeland Security 3
- [CJUS203](#) Cyberterrorism 3
- [CJUS204](#) Domestic and International Terrorism 3
- [CJUS303](#) Critical Infrastructure Protection 3
- [CJUS321](#) Ethical Issues in Public Safety 3
- [CJUS325](#) / [FIRE325](#) Homeland Security and Emergency Services 3
- [CJUS341](#) Fire Cause and Arson Investigation 3
- [FIRE111](#) Hazardous Materials 3
- [FIRE201](#) Fire Protection Construction Concepts 3
- [FIRE211](#) Tactics and Strategy 3
- FIRE300 Special Topics 3-6
- [FIRE309](#) Fire-Related Human Behavior 3
- [FIRE312](#) Hazardous Materials Management 4
- FIRE400 Special Topics 3-6
- [FIRE402](#) Fire Service and the Law 3
- [FIRE403](#) Fire Science Internship 3

Electives to reach 124 credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Fisheries and Wildlife Management: Bachelor of Science

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.

Program Learning Outcomes:

Scientific Literature - Students in the Fisheries and Wildlife Management program will thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Scientific Investigation - Students in the Fisheries and Wildlife Management program will design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Communication - Students in the Fisheries and Wildlife Management program will effectively communicate the results or outcomes of their scientific investigation in multiple formats.

External Validity - Graduates of the Fisheries and Wildlife Management concentrations will be prepared to meet certification requirements of the American Fisheries Society or The Wildlife Society.

Professionalism - Graduates of the Fisheries and Wildlife Management program will have developed and demonstrate a sense of professionalism/work ethic.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Fisheries and Wildlife Management](#)
- [Bachelor of Science Fisheries and Wildlife Management, Conservation Officer Concentration](#)
- [Bachelor of Science Fisheries and Wildlife Management, Fisheries Management Concentration](#)
- [Bachelor of Science Fisheries and Wildlife Management, Wildlife Management Concentration](#)

Degree Requirements

Bachelor of Science Fisheries and Wildlife Management

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
 - [BIOL132](#) General Biology II: Organisms 4
 - [NRES199](#) Freshman Seminar 1
 - [BIOL202](#) Plant Sciences I: Identification and Diversity 3
- or**
- [NRES284](#) Forestry 4
 - [NRES203](#) Fundamentals of Natural Resources 3
 - [BIOL220](#) Genetics 4
 - [BIOL243](#) Vertebrate Anatomy 4
- or**
- [BIOL330](#) Animal Physiology 4
 - [NRES250](#) Quantitative Biology 3
 - [BIOL280](#) Biometrics 3
 - [NRES299](#) Sophomore Seminar 1
 - [NRES310](#) Ichthyology 3
 - [NRES311](#) Mammology 3
 - [NRES312](#) Ornithology 3
 - [NRES333](#) Fish Ecology 3
 - [BIOL337](#) General Ecology 3
 - [NRES339](#) Wildlife Ecology 3
 - [NRES345](#) Limnology 3
 - [NRES399](#) Research Project Design 1
 - [NRES432](#) Fisheries Management 3
 - [NRES439](#) Wildlife Management 3
 - [NRES495](#) Senior Project 2
 - [NRES499](#) Senior Capstone 1
 - NRES or BIOL Electives 3

Support Courses

- [CHEM115](#) General Chemistry I 5
 - [CHEM116](#) General Chemistry II 5
 - [CHEM208](#) Survey of Organic Chemistry with Biological Apps 4
- or**
- [PHYS221](#) Principles of Physics I 4
 - [EVRN131](#) Introduction to GIS and GPS 2
 - [MATH111](#) College Algebra 3
 - [MATH112](#) Calculus for Business & Life Sciences 4

Free Electives - 10-11 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Conservation Officer Concentration

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
- [BIOL132](#) General Biology II: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [BIOL202](#) Plant Sciences I: Identification and Diversity 3
- **or**
- [NRES284](#) Principles of Forestry 4
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES299](#) Sophomore Seminar 1
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- **or**
- [NRES312](#) Ornithology 3
- [NRES333](#) Fish Ecology 3
- [BIOL337](#) General Ecology 3
- [NRES339](#) Wildlife Ecology 3
- [NRES345](#) Limnology 3
- [NRES399](#) Research Project Design 1
- [NRES432](#) Fisheries Management 3
- [NRES439](#) Wildlife Management 3
- [NRES495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [EVRN131](#) Introduction to GIS and GPS 2
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Sciences 4

Conservation Officer Concentration Requirements (18 - 21 credits)

- [CJUS101](#) Introduction Criminal Justice 3
- [CJUS102](#) Police Process 3
- [CJUS197](#) Physical Fitness for Public Safety 1
- [CJUS201](#) Firearms Training 1
- [CJUS313](#) Crisis Intervention 3
- **or**
- [CJUS321](#) Ethical Issues 3
- [PSYC101](#) Introduction to Psychology 4
- [SOCY101](#) Introduction to Sociology 4
- **or**
- [SOCY102](#) Social Problems 4
- [COMM225](#) Interpersonal Communication 3

Free Electives to total 125 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Fisheries Management Concentration

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
- [BIOL132](#) General Biology II: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [BIOL243](#) Vertebrate Anatomy 4
- **or**
- [BIOL330](#) Animal Physiology 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES299](#) Sophomore Seminar 1
- [NRES310](#) Ichthyology 3
- [NRES333](#) Fish Ecology 3
- [BIOL337](#) General Ecology 3
- [NRES345](#) Limnology 3
- [NRES372](#) Freshwater Fish Culture 3
- [NRES399](#) Research Project Design 1
- [NRES432](#) Fisheries Management 3
- [NRES475](#) Aquatic Entomology 3
- [NRES495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1
- NRES or BIOL Electives 8

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM208](#) Survey of Organic Chemistry with Biological Apps 4
- **or**
- [PHYS221](#) Principles of Physics I 4
- [EVRN131](#) Introduction to GIS and GPS 2
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Sciences 4

Human Dimensions - 3 credits from:

- [ECON307](#) Environmental Economics 3

- [EVRN311](#) Environmental Law 3
- [NRES304](#) The Human Environment 3
- [POLI342](#) International Environmental Policy 3

Free Electives - 12 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Fisheries and Wildlife Management, Wildlife Management Concentration

Departmental Requirements

- [BIOL131](#) General Biology I: Cells 4
- [BIOL132](#) General Biology II: Organisms 4
- [NRES199](#) Freshman Seminar 1
- [BIOL202](#) Plant Sciences I: Identification and Diversity 3
- [NRES203](#) Fundamentals of Natural Resources 3
- [BIOL220](#) Genetics 4
- [BIOL243](#) Vertebrate Anatomy 4
- **or**
- [BIOL330](#) Animal Physiology 4
- [NRES250](#) Quantitative Biology 3
- [BIOL280](#) Biometrics 3
- [NRES284](#) Principles of Forestry 4
- [NRES299](#) Sophomore Seminar 1
- [NRES311](#) Mammology 3
- [NRES312](#) Ornithology 3
- [BIOL337](#) General Ecology 3
- [NRES339](#) Wildlife Ecology 3
- [NRES399](#) Research Project Design 1
- [NRES439](#) Wildlife Management 3
- [NRES495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1
- NRES or BIOL Electives 3

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [EVRN131](#) Introduction to GIS and GPS 2
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Sciences 4

Physical Science* - 3-4 credits from:

- [NRES230](#) Introduction to Soil Science 4

- [NRES286](#) Principles of Watersheds 3
- [PHYS221](#) Principles of Physics I 4

Policy/Admin/Law - 9 credits from:

- [NRES287](#) Conservation Biology 3
- [ECON307](#) Environmental Economics 3
- [EVRN311](#) Environmental Law 3
- [NRES304](#) The Human Environment 3
- [POLI342](#) International Environmental Policy 3

Free Electives - 10 credits

*Students considering graduate school should select [PHYS221](#)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Forensic Chemistry: Bachelor of Science

Program Description

The B.S. in Forensic Chemistry combines elements of criminal justice and biology with a strong chemistry program. The forensic chemist analyzes and interprets materials collected at crime scenes, accidents, and at sites of terrorist activities.

The degree is offered in response to strong student, state and local government demand for an undergraduate academic program to prepare students for careers in forensic chemistry. According to the U.S. Department of Labor Bureau of Labor Statistics 2010 Occupational Outlook Handbook, forensic science technicians will grow much faster than average.

Graduates with a bachelor of science in forensic chemistry work in forensic laboratories for federal, state, or local government agencies or in some cases, work for private investigative laboratories. Some graduates may also go on to pursue a graduate degree.

The Chemistry Program at Lake Superior State University is now accredited by the American Chemical Society (ACS). According to the 2011 National Occupational Employment and Wage Estimator, more people are employed as chemists and chemical technicians than in any other job classification in the life and physical science occupations (<http://stats.bls.gov>). With many free electives and a common general education core, a chemistry degree can also be used in combination with other majors or minors such as pre-professional (medicine, pharmacy, veterinary, law, etc.), engineering, business, biology, and many more to match student interest and career plans.

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

The LSSU chemistry program has been approved by the American Chemical Society, and may provide a certified degree in Chemistry, Environmental Chemistry, Forensic Chemistry, and Pre-Professional Chemistry degrees if a student chooses this track. Graduates completing the prescribed requirements are awarded an ACS certificate signifying their completion of the approved degree and can qualify for membership in the Society upon graduation.

American Chemical Society
Committee on Professional Training

155 Sixteenth Street, N.W.,
Washington, D.C. 20036

Program Learning Outcomes:

Demonstrate proficiency in the following chemistry subdisciplines: analytical chemistry, biochemistry, organic chemistry, and physical chemistry.

Demonstrate readiness for employment as a laboratory forensic chemist, crime scene investigator or law enforcement laboratory chemist OR graduate or professional study.

With the guidance of a faculty mentor, develop a well-designed, well-executed, and clearly communicated research project that contributes to scientific knowledge in the field of Forensic Chemistry.

Degree Requirements

Major Requirements (55 credits)

Chemistry (39 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM351](#) Introductory Biochemistry 4
- [CHEM353](#) Introductory Toxicology 3
- [CHEM361](#) Physical Chemistry I 4
- [CHEM363](#) Physical Chemistry Lab 1
- [CHEM395](#) Junior Seminar 1
- [CHEM445](#) / [CJUS445](#) Forensic Science 4
- [CHEM452](#) Biochemistry II 4
- **or**
- [CHEM310](#) Applied Spectroscopy 4
- [CHEM499](#) Senior Seminar 1

For American Chemical Society certified degree, additionally required (total lab hours must be at least 400 hrs). See Department Chair for special rules regarding ACS certification:

- [CHEM261](#) Inorganic Chemistry 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM495](#) Senior Project 2
- [MATH152](#) Calculus II 4
- **or**
- [EGNR140](#) Linear Algebra and Numeral Apps Engineers 2
- [EGNR245](#) Calculus Applications for Technology 3

Criminal Justice (16 credits)

- [CJUS101](#) Introduction to Criminal Justice 3
- [CJUS243](#) Investigation 3
- [CJUS319](#) Substantive Law 3
- [CJUS409](#) Procedural Law 3
- [CJUS444](#) Criminalistics 4

Support Courses (47 credits)

- [USEM101](#) University Seminar I: Foundation Success 1
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Sciences 4
- [MATH207](#) Principles of Statistical Methods 3
- or**
- [BUSN211](#) Business Statistics 3
- [NSCI110](#) Introduction to Forensics 4
- Two semesters of College Physics with laboratory (8 cr min)
- [POLI110](#) Introduction to American Government and Politics 4
- [PSYC101](#) Introduction to Psychology 4
- [PSYC259](#) Abnormal Psychology 3
- [SOCY103](#) Cultural Diversity 3
- [SOCY214](#) Criminology 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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General Studies: Bachelor of Arts/Science

Program Description

Through the General Studies BA/BS, students choose two minors, two concentrations or one minor and one concentration from separate areas of interest. Working closely with the general studies coordinator and advisors in both areas of study, the student designs a unique degree which emphasizes their individual strengths in diverse fields of study. This synthesis of knowledge from more than one area of study enables the student to become an effective contributor in their community and a world in which careers are increasingly complex and varied in their requirements. The value of this interdisciplinary model can be seen most concretely in the student's capstone project (INTD 490) in which the student must merge what he or she has learned in both areas of study into a practical and academically valuable research project.

Program Learning Outcomes:

Formal Communication: Students will develop and clearly express complex ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will identify the need for, gather, and accurately process the appropriate type, quality, and quantity of evidence to answer a complex question or solve a complex problem within the content of their chosen studies.

Analysis and Synthesis: Students will organize and synthesize evidence, ideas, or works of imagination to answer an open-ended question, draw a conclusion, achieve a goal, or create a substantial work of art as appropriate to their chosen studies.

Professional Responsibility: Students will demonstrate the ability to apply professional ethics and intercultural competence when answering a question, solving a problem, or achieving a goal related to their chosen studies.

Degree Requirements

Major Requirements (60 credits)

Complete two academic minors, or two academic concentrations, or one of each. No more than two (2) courses may be counted in common to meet the minimum requirements for minors, concentrations, or between minor and concentration.

Minors: Successfully complete academic minor(s) totaling at least 30 credits each. At least 10 credits in each minor must be LSSU credits. Complete additional courses in the same course prefixes used in the minor in cases where the minor

does not meet the minimum of 30 credits.

Concentrations: Complete at least 30 credits in defined academic concentrations. Concentrations must include at least 10 credits in LSSU credits, and at least 12 credits must be at the 300/400 level.

Academic Concentrations:

- Behavioral Sciences - Courses with SOCY, PSYC and SOWK prefixes
- Business - Courses with ACTG, BUSN, ECON, FINC, INTB, MGMT and MRKT prefixes
- Communication - Courses with COMM prefixes
- Computational Sciences - Courses with MATH and CSCI prefixes
- Education - Courses with CHLD, EDUC and EDSE prefixes
- Emergency Services - Courses with CJUS, FIRE and EMED prefixes
- Engineering - Courses with EGEE, EGET, EGME, EGEM, EGMT, EGNR and EGRS prefixes
- Fine Art - Courses with ARTS, DANC, FINE, MUSC and THEA prefixes
- Health Bach - Courses with EMED, HLTH, KINS, NURS and PNUR prefixes
- Humanities and Philosophy - Courses with HUMN and PHIL prefixes
- Modern Language and Literature - Courses with ENGL, FREN and SPAN prefixes
- Natural Science - Courses with BIOL, CHEM, EVRN, GEOL, NSCI and PHYS prefixes
- Social Sciences - Courses with ECON, GEOG, HIST and POLI prefixes

Additional Major Requirements:

- PHIL Elective (excluding [PHIL205](#)) 3
- [INTD490](#) Senior Directed Study 3-4

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Geology: Bachelor of Science



Program Description

Geology examines the dynamic Earth and its physical, chemical and biologic history. It involves the study of changes that are taking and have taken place and the forces that cause these changes. For example, geologists interpret the movements of the continents over geologic time and the formation of mountains, volcanoes and other features of the Earth's surface. Geologists attempt to understand our physical environment from which we derive most of the natural resources essential to civilization. They investigate the processes that led to the formation of mineral deposits, and oil, gas and coal. They also study environmental change throughout the history of the Earth and how those changes and the development of life are related. Geologists attempt to predict natural disasters such as earthquakes, volcanic eruptions, and landslides, and they are very active in modeling groundwater flow to develop water reserves for municipalities and to protect groundwater from contamination. Geologists study the natural world and apply their knowledge to achieve harmony between the human race and its environment.

Program Learning Outcomes:

Knowledge & Professional Skills: The Geology graduate will demonstrate 1. theoretical and practical knowledge of geologic principles; 2. Teamwork, 3. Professional behavior, 4. communication skills

Readiness for Graduate Study and/or Employment: The Geology graduate will demonstrate readiness graduate school or for geoscience employment such as: an environmental geologist, public sector geoscientist, mud logger, geophysicist, mine geologist, exploration geologist, science technician, etc.

Scholarship: The university supports scholarship where undergraduate students have the opportunity to engage in geoscience research, often publishable, working with faculty mentors.

Technical Skills: The Geology graduate will solve geologic problems by demonstrating competence conducting field and laboratory studies; 2. creating and interpreting geoscience maps and cross sections, 3. analyzing geologic data sets and software and/or technology.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Geology](#)
- [Bachelor of Science Geology, Environmental Geology Concentration](#)
- [Bachelor of Science Geology, Water and Climate Concentration](#)

Degree Requirements

Bachelor of Science Geology

Geology Course Requirements (51 credits)

- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL308](#) Structural Geology Systems 5
- [GEOL315](#) Geoenvironmental Systems 5
- [GEOL322](#) Geochemical Systems 4
- [GEOL334](#) Hydrologic Systems Surface & Ground Water 4
- [GEOL355](#) Stratigraphy and Sedimentation 4
- [GEOL380](#) Introduction to Field Geology 3
- [GEOL431](#) Geophysical Systems 5
- [GEOL440](#) Technology in Geology 2
- [GEOL450](#) Geology Seminar I 2
- [GEOL451](#) Geology Seminar II 2
- [GEOL468](#) Tectonic Systems 5
- [GEOL480](#) Advanced Field Geology 3

Support Courses (27-28 credits)

- [NRES199](#) Freshman Seminar 1
- [CHEM115](#) General Chemistry I 5
- [PHYS221](#) Principles of Physics I* 4
- **or**
- [PHYS231](#) Applied Physics Engineer/Scientist I 4
- [CHEM116](#) General Chemistry II 5
- **or**
- [PHYS222](#) Principles of Physics II* 4
- **or**
- [PHYS232](#) Applied Physics Engineer/Scientist II 4
- [EVRN131](#) Introduction to GIS/GPS 3
- [MATH111](#) College Algebra* 3
- [MATH112](#) Calculus for Business and Life Sciences* 4
- **or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Principles of Statistical Methods 3
- **or**
- [MATH308](#) Probability and Mathematical Statistics 3
- **or**
- [BUSN211](#) Business Statistics 3
- **or**
- [BIOL280](#) Biostatistics 3

*Students with adequate preparation in mathematics or are considering graduate school are advised to take [MATH151](#) and [MATH152](#) and [PHYS231](#) and [PHYS232](#) and [CHEM115](#) and [CHEM116](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Environmental Geology Concentration

Geology Course Requirements (42 credits)

- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL308](#) Structural Geology Systems 5
- [GEOL315](#) Geoenvironmental Systems 4
- [GEOL322](#) Geochemical Systems 4
- [GEOL334](#) Hydrologic Systems 4
- [GEOL380](#) Introduction to Field Geology 3
- [GEOL431](#) Geophysical Systems 4
- [GEOL440](#) Technology in Geology 2
- [GEOL450](#) Geology Seminar I 2
- [GEOL451](#) Geology Seminar II 2
- [GEOL480](#) Advanced Field Geology 3

Support Courses (42 credits)

- [NRES199](#) Freshman Seminar 1
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [PHYS221](#) Principles of Physics I* 4
- or**
- [PHYS231](#) Applied Physics Engineer/Scientist I 4
- [EVRN131](#) Introduction to GIS/GPS 3
- [EVRN311](#) Environmental Law 3
- [EVRN341](#) Fate & Transport Environment 4
- [NSCI103](#) Environmental Science 3
- [NRES230](#) Introduction to Soil Science 4
- [MATH111](#) College Algebra* 3
- [MATH112](#) Calculus for Business and Life Sciences* 4
- or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Principles of Statistical Methods 3
- or**
- [MATH308](#) Probability and Mathematical Statistics 3
- or**
- [BUSN211](#) Business Statistics 3
- or**
- [BIOL280](#) Biostatistics 3

Distributed Electives (16 credits minimum)

- [CHEM208](#) Survey Organic Chemistry/Biol Apps 4
- [CHEM225](#) Organic Chemistry I 4

- [CHEM231](#) Quantitative Analysis 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [ECON307](#) Environmental Economics 3
- [EVRN211](#) Field Data Methods 1
- [EVRN225](#) Intermediate GIS 3
- [EVRN315](#) Human Impacts on Environment 4
- [EVRN317](#) Environmental Health Apps 4
- [EVRN325](#) Geospatial Analysis 3
- [EVRN365](#) Applied Geospatial Technologies 4
- [EVRN389](#) Environmental Research Methods 3
- [NRES399](#) Research Project Design 1
- [EVRN435](#) Environmental Systems 3
- [EVRN495](#) Senior Project 2
- [NRES499](#) Senior Capstone 1
- [FIRE312](#) Hazardous Material Management 4
- [GEOG108](#) Meteorology & Climatology 4
- [GEOL355](#) Stratigraphy and Sedimentation 4
- [GEOL490](#) Research Topics in Geology 1-4
- [GEOL495](#) Senior Project 2
- [POLI342](#) International Environmental Policy 3

*Students with adequate preparation in mathematics and/or interested in graduate school are advised to take [MATH151](#) and [MATH152](#) and [PHYS231](#) and [PHYS232](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Water and Climate Concentration Geology Course Requirements (39 credits)

- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL308](#) Structural Geology Systems 5
- [GEOL315](#) Geoenvironmental Systems 4
- [GEOL322](#) Geochemical Systems 4
- [GEOL334](#) Hydrologic Systems 4
- [GEOL380](#) Introduction to Field Geology 3
- [GEOL431](#) Geophysical Systems 4
- [GEOL440](#) Technology in Geology 2
- [GEOL450](#) Geology Seminar I 2
- [GEOL451](#) Geology Seminar II 2

Support Courses (38-39 credits)

- [NRES199](#) Freshman Seminar 1
- [CHEM115](#) General Chemistry I 5
- [PHYS221](#) Principles of Physics I* 4
- **or**
- [PHYS231](#) Applied Physics Engineer/Scientist I 4
- [CHEM116](#) General Chemistry II 5
- **or**
- [PHYS222](#) Principles of Physics II* 4
- **or**
- [PHYS232](#) Applied Physics Engineer/Scientist II 4
- [EVRN131](#) Introduction to GIS/GPS 3
- [EVRN389](#) Environmental Research Methods 3
- [GEOG108](#) Meteorology & Climatology 4
- [NSCI116](#) Introduction to Oceanography 4
- [NRES286](#) Principles of Watersheds 3
- [MATH111](#) College Algebra* 3
- [MATH112](#) Calculus for Business and Life Sciences* 4
- **or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Principles of Statistical Methods 3
- **or**
- [MATH308](#) Probability and Mathematical Statistics 3
- **or**
- [BUSN211](#) Business Statistics 3
- **or**
- [BIOL280](#) Biostatistics 3

Distributed Electives (10 credits minimum)

- [EVRN211](#) Field Data Methods 1
- [EVRN225](#) Intermediate GIS 3
- [EVRN325](#) Geospatial Analysis 3
- [EVRN311](#) Environmental Law 3
- [EVRN315](#) Human Impacts on Environment 4
- [EVRN365](#) Applied Geospatial Technologies 4
- [EVRN341](#) Fate and Transport Environment 4
- [EVRN495](#) Senior Project 2
- [GEOL355](#) Stratigraphy and Sedimentation 4
- [GEOL480](#) Advanced Field Geology 3
- [GEOL495](#) Senior Research 2
- [GEOL490](#) Research Topics in Geology 1-4
- [NSCI103](#) Environmental Science 3
- [NRES230](#) Introduction to Soil Science 4
- [NRES284](#) Principles of Forest Conservation 4
- [NRES345](#) Limnology 4
- [NRES399](#) Research Project Design 1
- [NRES499](#) Senior Capstone 1

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher

is also required in your Major, as well as in your General Education Requirements.

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Individualized Studies: Bachelor of Arts/Science

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.

Program Learning Outcomes:

Formal Communication: Students will develop and clearly express complex ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will identify the need for, gather, and accurately process the appropriate type, quality, and quantity of evidence to answer a complex question or solve a complex problem within the content of their chosen studies.

Analysis and Synthesis: Students will organize and synthesize evidence, ideas, or works of imagination to answer an open-ended question, draw a conclusion, achieve a goal, or create a substantial work of art as appropriate to their chosen studies.

Professional Responsibility: Students will demonstrate the ability to apply professional ethics and intercultural competence when answering a question, solving a problem, or achieving a goal related to their chosen studies.

Degree Requirements

Guidelines for an individualized studies degree are:

1. Contact a department chair or regional site director with a preliminary plan for degree development.
2. The department chair or regional site director will identify possible faculty advisors or another department chair to counsel you in degree planning.
3. The advisors 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:
 1. general education requirements.
 2. minimum of 124 credits and a minimum of 30 credits on campus or a minimum of 30 credits of LSSU classes offered at a regional center.

Fifty percent of the 300-400 level credits used in the concentration areas must be completed with LSSU classes.

3. 24 credits at 300/400 level in addition to general education requirements and a 2.00 cumulative GPA. At least one three-credit course at the 400 level is required.
 4. BA or BS degree requirement.
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 Major Change Form.
 9. Any course changes from the approved program must be submitted to the committee for approval.

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Kinesiology: Bachelor of Science



Program Description

A Bachelor of Science degree in Kinesiology prepares you to work in a variety of professional settings, ranging from clinical rehabilitation to health and fitness facilities to careers opportunities in the administration and management of sport and entertainment. Employers include physical rehabilitation clinics, hospitals, biomedical firms, the health and fitness industry, educational institutions, sports management, YMCA's and other not-for-profit agencies, and municipal recreation among others.

The BS in Kinesiology prepares students for placement in graduate programs such as physical therapy, occupational therapy, cardiac rehabilitation, kinesiology and exercise science, sport psychology, chiropractic medicine and other allied health fields.

Upon graduation, students are also prepared to sit for the American College of Sports Medicine (Clinical Exercise Physiologist), National Strength and Conditioning Association (Certified Strength and Conditioning Specialist), and multiple National Academy of Sports Medicine certifications.

Program learning Outcomes:

Physical Activity in Health, Wellness, and Quality of Life - Graduates will design individual and group level programs that promote physical activity, health, and improve quality of life.

Scientific Foundations of Kinesiology - Graduates will critically evaluate scholarly material and design an evidence based solution to a current research question in Kinesiology utilizing the scientific method of inquiry.

Cultural, Historical, Philosophical Dimensions of Kinesiology - Graduates will critically evaluate and organize scholarly material to present an evidence-based point of view specific to cultural, historical, and philosophical dimensions of physical activity.

The Practice of Physical Activity Across the Lifespan - Graduates will analyze mechanisms for the delivery of physical activity at the individual and group level across various health, social and inter-generational stratification.

Professional Development in Kinesiology - Graduates will to analyze and communicate personal assets and deficiencies in the creation of professional career goals and objectives.

Technical Competency in Kinesiology - Graduates evaluate, analyze, and demonstrate technical competency in the application of interventions at the individual and group level.

Degree Requirements

Major Core Requirements (32 credits)

- [USEM101](#) University Seminar I: Foundation Success 1
- [KINS101](#) Foundations in Kinesiology 3
- [KINS140](#) Health and Fitness 3
- [KINS141](#) Introduction to Movement 3
- [KINS265](#) Personal Fitness Training 3
- [KINS275](#) Nutrition for Sport and Exercise Performance 3
- [KINS295](#) Facility and Program Operations 3
- [KINS358](#) Research Methods in Kinesiology 3
- [KINS401](#) Internship I 2
- [KINS402](#) Internship II 2
- [KINS428](#) Psychology of Exercise and Rehabilitation 3
- [KINS444](#) Exercise Prescription 3
- [KINS481](#) Professional Development Seminar 1

Complete at least one concentration:

Human Performance (45 credits)

- [KINS105](#) Program Development and Leadership 3
- [KINS262](#) Exercise Physiology 3
- [KINS268](#) Fitness Eval I: Functional Assessment 3
- [KINS332](#) Health Promotions 3
- [KINS344](#) Kinesiology 3
- [KINS346](#) Therapeutic Exercise Rehabilitation 3
- [KINS348](#) Fitness Evaluation II Lab Procedures 3
- [KINS434](#) Neurological Basics of Motor Learning 3
- [KINS452](#) Allied Health Administration 3
- [BIOL121](#) Anatomy and Physiology I 4
- [BIOL122](#) Anatomy and Physiology II 4
- [CHEM108](#) and [CHEM109](#) Applied Chemistry and Lab (or higher level) 4
- [MATH110](#) Explorations in Mathematics (or higher level) 3

Select one statistics course from the following:

- [BUSN211](#) Business Statistics 3
- [BIOL280](#) Biostatistics 3
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC210](#) Statistics 3

Rehabilitation Sciences (45 credits)

- [KINS262](#) Exercise Physiology 3
- [KINS268](#) Fitness Eval I: Functional Assessment 3
- [KINS344](#) Kinesiology 3
- [KINS346](#) Therapeutic Exercise Rehabilitation 3
- [KINS348](#) Fitness Evaluation II Lab Procedures 3
- [KINS434](#) Neurological Basics of Motor Learning 3
- [KINS452](#) Allied Health Administration 3

- [BIOL121](#) Anatomy and Physiology I 4
- [BIOL122](#) Anatomy and Physiology II 4
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [MATH111](#) College Algebra (or higher level) 3

Select one statistics course from the following:

- [BUSN211](#) Business Statistics 3
- [BIOL280](#) Biostatistics 3
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC210](#) Statistics 3

Sport and Fitness Management (31 credits)

- [KINS105](#) Program Development and Leadership 3
- [KINS270](#) Sports Management 3
- [KINS332](#) Health Promotions 3
- [KINS375](#) Commercial Recreation 3
- [KINS482](#) Administration of Recreation Services 3
- Diversity Elective 3
- [MATH110](#) Explorations in Mathematics (or higher level) 3
- [POLI130](#) Introduction to State and Local Government 4
- [SOWK480](#) Grant Writing 3

Select one statistics course from the following:

- [BUSN211](#) Business Statistics 3
- [BIOL280](#) Biostatistics 3
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC210](#) Statistics 3

Electives to reach 124 credits

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Language Arts: Bachelor of Arts



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 human letters and language study.

The goal of this program is to prepare future teachers to instill a lifelong love of reading and writing in their students. To this end, Language Arts candidates sponsor an annual children's writing festival and publish an anthology with stories written by area elementary school students. Language Arts candidates have the opportunity to practice their teaching before they graduate in a variety of local classrooms, as part of their professional education coursework.

The Language Arts program prepares graduates for elementary-level teacher certification in Michigan, which permits individuals to teach in self-contained classrooms at grades K-8, in all subjects at grades K-5, and in language arts at grades 6-8. See Elementary Teaching for additional information regarding this program.

Program Learning Outcomes:

Instructional Choices Candidates will make instructional choices that consider the integrated nature of the language arts, the socio-cultural and dynamic nature of language, and the principles of rhetoric and communication.

Grammar and Language Candidates will value both prescriptive and descriptive grammars and conventions of English and appreciate the dynamic nature of English as a language shaped by historical, social, and cultural influences.

Lifelong Reading and Writing Candidates will consider and recommend research-proven language arts teaching practices that foster lifelong reading and writing in children.

Analyze Texts Candidates will synthesize knowledge of genre, craft, and criticism to analyze texts.

Literacy and Scholarship Practices Candidates will value, apply, and recommend effective literacy and scholarship practices.

Degree Requirements

Bachelor of Arts Language Arts - Elementary Teaching

In this program, students will complete a teaching major in Language Arts, and a planned program in the other three academic areas essential to elementary school teaching: mathematics, natural science and social science. The planned program is explained in the Elementary Education section of this catalog.

The program also includes general education requirements and a professional education sequence. Students complete their initial professional education course in their sophomore year, and then apply for formal admission to the Teacher Education Program.

English Requirements (36 credits)

- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL222](#) English Grammar 3
- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- [ENGL236](#) Literature and Culture 3
- [ENGL320](#) Responding to Writing 3
- [ENGL335](#) Children's Literature 3
- [ENGL470](#) Language Arts Senior Thesis 3
- [COMM308](#) Communication Theory 3
- [THEA112](#) Acting for Beginners 3
- [CHLD225](#) Emergent Literacy 3

English Departmental Requirements (8 credits)

- One year of a modern language other than English

For information regarding the Professional Educational Sequence and Elementary Planned Program, - see [Elementary Education](#).

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

Bachelor of Arts degree (8 credits): One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.70 or higher. A gpa of 2.70 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Manufacturing Engineering Technology: Bachelor of Science



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 coordinating people from several other fields.

In addition to providing a strong background in the fundamentals of manufacturing engineering technology, *the program places an emphasis on the application of computer systems to modern manufacturing technologies.* This includes topics such as robotics, computer-aided design (CAD), programmable logic controllers (PLC), computer-aided manufacturing (CAM), and simulation of manufacturing systems. The classes and labs in the curriculum average about 12 students and are taught by faculty who are dedicated to undergraduate teaching excellence.

Students pursuing the B.S. degree in manufacturing at LSSU have the option to minor in robotics technology. LSSU is one of a few universities in the U.S. to offer the robotics minor in the TAC of ABET-accredited* manufacturing engineering technology B.S. degree. LSSU is home to one of the best robotics educational facilities in North America. Graduates with this emphasis have had nearly 100 percent job placement with high and competitive starting salaries. Your minor in robotics will be identified on your transcripts.

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.

Program Learning Outcomes:

Apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline

Design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline

Apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature

Conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes

Function effectively as a member as well as a leader on technical teams

Degree Requirements

Departmental Requirements: (102 credits)

Mathematics (12 credits)

- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business and Life Science 4
- [MATH131](#) College Trigonometry 3
- [MATH207](#) Principles of Statistical Methods 3

Science (9 credits)

- [CHEM108](#) Applied Chemistry I 3
- [CHEM109](#) Applied Chemistry Lab 1
- [PHYS221](#) Principles of Physics I 4

Engineering Technology (62 credits)

- [EGNR101](#) Introduction to Engineering 2
- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGNR245](#) Calculus Applications for Technology 3
- [EGNR265](#) "C" Programming 3
- [EGNR310](#) Advanced Quality Engineering 3
- [EGNR491](#) Engineering Design Project I 3
- [EGNR495](#) Engineering Design Project II 3
- [EGET110](#) Applied Electricity 4
- [EGET175](#) Applied Electronics 4
- [EGME110](#) Manufacturing Processes I 3
- [EGME141](#) Solid Modeling 3
- [EGME240](#) Assembly Modeling and GD&T 3
- [EGME275](#) Engineering Materials 3
- [EGME276](#) Strength of Materials Lab 1
- [EGMT216](#) CAM with CNC Applications 3
- [EGMT225](#) Statics and Strength of Materials 4
- [EGRS365](#) Programmable Logic Controllers 3
- [EGRS380](#) Robotics Technology 2
- [EGRS381](#) Robotics Technology Lab 1
- [EGRS480](#) Manufacturing Automation 3
- [EGRS481](#) Manufacturing Automation Lab 1

Support Courses (22 credits)

- [ECON302](#) Managerial Economics 4
- [MGMT360](#) Management Concepts and Applications 3
- Cooperative Education* 2
- Technical Electives 10

- Free Electives 3

Select a Senior Engineering Project Sequence: (0-8 credits)

Industrial Project (0 add'l credits-see above)

- [EGNR491](#) Engineering Design Project I 3
- [EGNR495](#) Engineering Design Project II 3

Co-op Project (add'l 6 credits)

- [EGNR250](#) Cooperative Education I 2
- [EGNR450](#) Cooperative Education Project I 2
- [EGNR451](#) Cooperative Education Project II 2
- [EGNR491](#) Engineering Design Project I 3

Research Project (add'l 8 credits)

- [EGNR260](#) Engineering Research Methods 2
- [EGNR460](#) Engineering Research Project I 4
- [EGNR461](#) Engineering Research Project II 2

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 minor in robotics technology.

In the **general option**, you will have the ability to choose the specific course of study for the course(s) noted as technical electives in the curriculum.

For the **robotics technology minor**, you will complete a specified advanced course in robotics in place of the technical electives credits. The advanced course will provide you with a strong background in systems integration, machine vision, sensors and automation. LSSU is one of a few universities in the USA that offer you this option to specialize in robotics in the manufacturing program. LSSU is home to one of the best robotics educational facilities in North America. Graduates with this emphasis have had nearly 100-percent job placement with high and competitive starting salaries. Your completion of study in the robotics minor will be identified on your transcript.

Additional Credits for the Robotics Technology minor (4 credits)

- [EGRS430](#) Systems Integration and Machine Vision 4

General Option Select ten credits from the following courses:

Technical Electives

- [EGRS215](#) Introduction to Robotics 2
- [EGEE250](#) Microcontroller Fundamentals 4
- [EGME310](#) Vehicle Development & Testing 2
- [EGMT332](#) Thermodynamics & Heat Transfer for Technologists 4
- [MGMT375](#) Introduction to Supply Chain Management 3
- [MGMT471](#) Production/Operations Management 3
- [EGME338](#) Fluid Mechanics 2

- [EGET310](#) Electronic Manufacturing Processes 4
- [EGNR250](#) Cooperative Education I 2

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Mechanical Engineering: Bachelor of Science

Program Description

Mechanical engineering is a broad-based program that prepares you for a rewarding career in mechanical and related engineering fields. Course work for this EAC of ABET-accredited* program includes 72 credits in Engineering subjects, 32 credits in math and sciences and 25 credits in general education for a total of 129-131 credits in the bachelor of science degree. You will work with mechanical systems in the laboratories and receive an excellent mix of theory and application.

Program Highlights:

- Emphasis is on preparing you to solve real-world engineering problems.
- You will participate in multidisciplinary, industrial or research-based senior engineering design projects which emphasize teamwork, communications, project management, customer relations and ethics.
- You will learn numerous software packages for CAD, CAM, fluid dynamics, finite element analysis, and other applications.
- Cooperative education opportunities are available.
- Degree Concentrations — You must choose from among three concentrations: robotics and automation, vehicle systems, or general mechanical while studying mechanical engineering.
- Emphasis on fundamentals of engineering, applications of theory, traceability to first principles, and generous laboratory content to complement and reinforce theoretical understanding.

The **robotics and automation concentration** will give you skills through courses in machine vision, system integration, automated manufacturing, robotics, and programmable logic controllers.

The **vehicle systems concentration** addresses the performance of surface vehicles of all types (automotive, rail, terrain, watercraft, etc.) through a series of courses in vehicle dynamics, geometric dimensioning and tolerancing, vehicle testing, and vibration and noise control. The emphasis is on projecting performance through analytical skills and computer simulation, and testing using modern instrumentation.

The **general concentration** enables students to select courses from the concentrations described above as well as other Engineering subjects.

Cooperative Education:

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

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Departmental Requirements:

Mathematics

- [EGNR340](#) Advanced Numerical Methods for Engineers 1
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH308](#) Probability & Mathematical Statistics 3
- [MATH310](#) Differential Equations 3

Sciences

- [CHEM115](#) General Chemistry I 5
- [PHYS231](#) Applied Physics for Engineers and Scientists I 4
- [PHYS232](#) Applied Physics for Engineers and Scientists II 4

Engineering

- [EGEE210](#) Circuit Analysis 4
- [EGEM220](#) Statics 3
- [EGEM320](#) Dynamics 3
- [EGME110](#) Manufacturing Processes I 3
- [EGME141](#) Solid Modeling 3
- [EGME225](#) Mechanics of Materials I 3
- [EGME275](#) Engineering Materials I 3
- [EGME276](#) Strength of Materials Lab 1

- [EGME337](#) Thermodynamics 4
- [EGME338](#) Fluid Mechanics 3
- [EGME350](#) Machine Design 4
- [EGME431](#) Heat Transfer 3
- [EGME432](#) Thermal and Fluids Lab 2
- [EGNR101](#) Introduction to Engineering 2
- [EGNR140](#) Linear Algebra & Numerical Methods for Engineers 2
- [EGNR265](#) "C" Programming 3
- [EGNR340](#) Adv Numerical Methods for Engineers 2
- [EGRS460](#) Control Systems 4

Senior Sequence (Complete one of the following sequences):

Industrial Project

- [EGNR491](#) Engineering Design Project I 3
- [EGNR495](#) Engineering Design Project II 3

Co-op Project

- [EGNR450](#) Cooperative Education Project I 4
- [EGNR451](#) Cooperative Education Project II 3
- [EGNR491](#) Engineering Design Project I 3

Research Project

- [EGNR260](#) Engineering Research Methods 2
- [EGNR460](#) Engineering Research Project I 4
- [EGNR461](#) Engineering Research Project II 2

Technical Electives (Complete one of the following concentrations):

Vehicle Systems Concentration (C or better grade required for all classes)

- [EGEE280](#) Introduction to Signal Processing 4
- [EGME240](#) Assembly Modeling and GD&T 3
- [EGME310](#) Vehicle Development & Testing 2
- [EGME415](#) Vehicle Dynamics 2
- [EGME425](#) Vibrations and Noise Control 4

Select one of the following:

- [EGME442](#) Finite Element Analysis 3
- [EGRS461](#) Design of Control Systems 4

Robotics and Automation Concentration (C or better grade required for all classes)

- [EGRS365](#) Programmable Logic Controllers 3
- [EGRS385](#) Robotics Engineering 3
- [EGRS430](#) Systems Integration and Machine Vision 4
- [EGRS435](#) Automated Manufacturing Systems 4

Select one of the following:

- [EGME240](#) Assembly Modeling and GD&T 3
- [EGMT216](#) CAM with CNC Applications 3
- [EGNR310](#) Advanced Quality Engineering
- [EGEE280](#) Introduction to Signal Processing 4

General Concentration

- [EGME240](#) Assembly Modeling and GD&T 3

Select 14 credits from the list below with at least 5 credits at the 400 level.

- [EGEE280](#) Introduction of Signal Processing 4
- [EGME310](#) Vehicle Development & Testing 2
- [EGME415](#) Vehicle Dynamics 2
- [EGME425](#) Vibrations and Noise Control 4
- [EGMT216](#) CAM with CNC Applications 3
- [EGNR261](#) Energy Systems and Sustainability 3
- [EGNR361](#) Energy Systems and Sustainability Lab 1
- [EGNR362](#) Vehicle Energy Systems 3
- [EGNR310](#) Advanced Quality Engineering 3
- [EGRS365](#) Programmable Logic Controllers 3 (if not used above)
- [EGRS385](#) Robotics Engineering 3
- [EGRS430](#) Systems Integration and Machine Vision 4
- [EGRS435](#) Automated Manufacturing Systems 4

32 credits from Mathematics (including [EGNR340](#)) and Natural Sciences is required.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Nursing: Bachelor of Science



Program Description

Professional nursing blends a unique body of knowledge from the sciences, social sciences and humanities with a compassionate heart and a sensitive spirit to provide holistic care to those in need.

The School of Nursing offers two curricular tracks to the bachelor of science degree in nursing; the four-year, pre-licensure program and the two-year, completion program for the registered nurse. The programs provide you with the opportunity to acquire knowledge, values and skills necessary for the practice of professional nursing.

Course requirements provide liberal backgrounds in physical science, social science and humanities. This curriculum provides a solid basis for the variety of roles in nursing practice. The nursing curriculum provides an interdisciplinary major and, therefore, does not require a minor to meet graduation requirements. These nursing programs are approved by the Michigan Board of Nursing and the BSN program is accredited by the Commission on Collegiate Nursing Education.

*One Dupont Circle, NW Suite 530
Washington, DC 20036
Telephone: (202) 887-6791
Fax: (202) 887-8476*

Mission Statement:

To graduate competent students who are able to safely provide compassionate nursing care utilizing theory and evidence based practice.

Program Learning Outcomes:

Liberal Education for Baccalaureate Generalist Nursing Practice: Appraises a solid base in liberal education for nursing practice.

Basic Organizational and System Leadership for Quality Care and Patient Safety: Synthesizes knowledge and skills in leadership, quality Improvement, and patient safety to provide quality health care.

Scholarship for Evidence-Based Practice: Evaluates research for potential application for evidence-based practice.

Information Management and Application of Patient Care Technology: Designs knowledge and skills in information management and patient care technology in the delivery of quality patient care.

Health Care Policy, Finance, and Regulatory Environments: Analyzes health care policies, including financial and regulatory, directly and indirectly influencing the nature and functioning of the healthcare system.

Inter-professional Communication and Collaboration for Improving Patient Health Outcomes: Appraises communication and collaboration among health care professionals and patients to deliver high quality and safe patient care.

Clinical Prevention and Population Health: Determines health promotion and disease prevention at the individual and population health levels.

Professionalism and Professional Values: Emulates professionalism and inherent values of altruism, autonomy, human dignity, integrity, and social justice.

Baccalaureate Generalist Nursing Practice: Synthesizes nursing practice with patients, individuals, families, groups, communities, and populations across the lifespan and across the continuum of healthcare environments and the variations of care, the increased complexity, and the increased use of health care resources inherent in caring for patients.

Available degrees (see specific degree requirements further down the page):

- [Bachelor of Science Nursing](#)
- [Bachelor of Science Nursing, Post-Licensure Completion Program, Completion Program for RN Students](#)

Degree Requirements

Bachelor of Science Nursing, Pre-Licensure Program

Pre-Nursing Entrance Requirements:

To qualify as a pre-nursing major, applicants must satisfy University admission requirements described in the admission section of the Catalog.

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 School of Nursing for admission to the nursing major. Admission is based upon 1) completing a current application in its entirety by the deadline of each semester, 2) successful completion of selected pre-nursing courses, 3) academic achievement, 4) a negative criminal background report, 5) ability to meet physical demands of program with or without accommodation 6) completion of TEAS test with passing score, and 7) verification of CPR training.

It is recommended that students be able to demonstrate computer literacy — basic word processing, library and Internet searches. Mathematics competency is required prior to the sophomore year. Entrance into nursing requires a grade point average of 2.7 or above in core pre-nursing and nursing courses. A maximum of 28 students will be accepted for each fall and spring semester. Canadian Immigration Service may deny a visa for clinical in Ontario on the basis of a conviction for a crime or for substance abuse.

Required academic courses are separated into three groups:

1. Nursing support courses - anatomy and physiology, microbiology, applied chemistry, mathematics, psychology, sociology, nutrition, pharmacology, pathophysiology, informatics in the health sciences, multicultural approach to health care and statistics).
2. General education requirements (English, humanities and speech).
3. Nursing courses

Progression Requirements in Nursing:

A grade of C or above is required in all courses. A grade of D in other general education or elective courses is accepted.

Transfer credit will be granted on an individual basis. Only those courses with a grade of C or better are transferable. Credits for Anatomy & Physiology courses and pharmacology are transferable for five years.

Time requirement for program completion is four academic years; however, completion may require more than four years for students who cannot maintain the high credit load each semester. Progression and readmission policies are detailed in the Nursing Student Handbook.

Students are responsible for transportation to and from clinical agencies, as well as all additional costs incurred by enrollment in the nursing program. Costs, academic and general information are listed in the Nursing Student Handbook and viewable on-line.

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.). There may be differences in testing in other states and provincial jurisdictions. 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 School of Nursing dean and direct questions to the Michigan Board of Nursing and the Immigration Service prior to considering entry in the program.

Nursing (61 credits)

- [NURS211](#) Intro. to Professional Nursing 3
- [NURS212](#) Health Appraisal 4
- [NURS213](#) Fundamentals of Nursing 6
- [NURS325](#) Nursing of Childbearing Families 5
- [NURS326](#) Nursing of Children & Families 5
- [NURS327](#) Adult Nursing I 8
- [HLTH328](#) Multicultural Approaches to Health Care 3
- [NURS431](#) Adult Nursing II 8
- [NURS432](#) Nursing of Populations 5
- [NURS433](#) Community Mental Health Nursing 5
- [NURS434](#) Nursing Research 3
- [NURS435](#) Management in Nursing 4
- [NURS436](#) Nursing Issues 2

Support Courses (44 credits)

- [BIOL121](#) Human Anatomy & Physiology I* 4
- [BIOL122](#) Human Anatomy & Physiology II* 4
- [BIOL223](#) Clinical Microbiology 3
- [CHEM108](#) Applied Chemistry * 3
- [CHEM110](#) Applied Organic & Biochemistry 4
- [HLTH208](#) Principles of Human Nutrition 3
- [HLTH209](#) Pharmacology 3
- [HLTH232](#) Pathophysiology 3
- [HLTH235](#) Healthcare Informatics 2
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC101](#) Introduction to Psychology* 4
- [PSYC155](#) Lifespan Development* 3
- [SOCY101](#) Introduction to Sociology* 4
- [USEM101](#) University Seminar I: Foundation Success 1

**Prerequisite courses for entrance to the program.*

General Electives (5 - 6 credits)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Nursing, Post-Licensure Completion Program, Completion Program for RN Students

No applications are being accepted at this time for this degree

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 minimum cumulative grade point average of 2.7 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 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. Credit by departmental exam is also available to students upon request.

Required Admission Credentials:

Submit to Admissions Office: standard LSSU Application for Admission; transcripts from previous nursing school(s) and college(s). Submit to School of Nursing: copy of current Michigan or Ontario professional nursing license and immunization records. All credentials must be on file preceding semester of entry.

Transfer Credits:

Transfer credits may be granted on an individual basis for equivalent general education and support courses. Only those courses with a grade of C or better may be transferred. A maximum of 32 semester hours credit in basic nursing courses may be transferred. Credit for pharmacology courses is acceptable for five years.

The expectation is that completion of this program will take no more than two years.

Progression and readmission policies are detailed in the Nursing Student Handbook.

Students are responsible for transportation to clinical agencies and all 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 and Escanaba. For further course information contact the main campus School of Nursing at 906-635-2288.

Nursing (61 credits)

- [NURS325](#) Nursing of Childbearing Families 5
- [NURS326](#) Nursing of Children & Families 5
- [NURS327](#) Adult Nursing I 8
- [NURS328](#) Multicultural Approach to Health Care 3
- [NURS352](#) Health Issues of Aging Populations 3
- [NURS360](#) Professional Nursing Concepts 4
- [NURS363](#) Individual/Family Assessment 5
- [NURS431](#) Adult Nursing II 8
- [NURS432](#) Nursing of Populations 5
- [NURS433](#) Community Mental Health Nursing 5
- [NURS434](#) Nursing Research 3
- [NURS435](#) Management in Nursing 4
- [NURS437](#) Nursing Leadership and Issues 3

Health Sciences (11 credits)

- [HLTH208](#) Principles of Human Nutrition* 3
- [HLTH209](#) Pharmacology* 3
- [HLTH232](#) Pathophysiology 3
- [HLTH235](#) Healthcare Informatics 2

Other Disciplines (28 credits)

- [BIOL121](#) Human Anatomy & Physiology I* 4
- [BIOL122](#) Human Anatomy & Physiology* 4

- [BIOL223](#) Clinical Microbiology* 3
- [CHEM108](#) Applied Chemistry* 3
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC101](#) Introduction to Psychology* 4
- [PSYC155](#) Lifespan Development* 3
- [SOCY101](#) Introduction to Sociology* 4

**Prerequisite courses for entrance to the program.*

General Electives

**Credit by departmental exam (or NLN examination, passing at a 50 percentile or higher) is also available to students upon request. For further information, contact the main campus School of Nursing at 906-635-2288.*

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Parks and Recreation: Bachelor of Science

Program Description

The bachelor of science degree in parks and recreation combines an associates degree in natural resources technology with additional course work relative to human resource management in the outdoor environment. Many jobs can be found in the public, private and commercial settings.

A one-semester internship is required for this degree.

Program Learning Outcomes:

Land Management Policy – The student will be able to discuss and explain the history and derivation of the policies, practice and protocols specific to recreation, of the federal agencies which manage landmasses for recreation either as a primary or secondary function.

Research - Graduates demonstrate professional competence and expertise through completion of an original research study, including a written a senior research thesis and poster presentation.

Statistics - The graduate will be able to apply statistical procedures and analysis to concepts and issues in the field of Park and Recreation Management.

Recreation Planning - The graduate will demonstrate proficiency and competence in planning recreational activities in a variety of settings.

Facility Management and Outdoor/Adventure Education Leadership - The graduate will demonstrate leadership qualities, skills and competencies through the development of outdoor educational activities and programming.

Degree Requirements

Program Requirements (29 credits)

- [RECS101](#) Introduction to Recreation 3
- [RECS262](#) Outdoor Recreation 3
- [RECS295](#) Recreation Practicum 1
- [RECS360](#) Facilitation and Interpretation 3
- [RECS362](#) Land Management for Recreation Purposes 3
- [RECS365](#) Expedition Management 3
- [RECS390](#) Recreation Leader Apprenticeship 1
- [RECS397](#) Recreation Studies Junior Research Seminar 1

- [RECS435](#) Research in Recreation and Leisure Sciences 3
- [RECS437](#) Recreation Studies Senior Research Seminar 1
- [RECS492](#) Recreation Internship 6

Cognate Requirements (67 - 69 credits)

- [ACTG132](#) Principles of Accounting 4
- [BIOL132](#) General Biology: Organisms 4
- [BUSN231](#) Business Communications 3
- [EVRN131](#) Introduction to GIS and GPS 3
- [EVRN225](#) Intermediate GIS 3
- [FIRE102](#) Wildland and Rural Fire Control 3
- [MATH111](#) College Algebra 3
- [MGMT365](#) Human Resource Management 3
- [NRES107](#) Field Biology: Fish & Wildlife Identification 3
- [NRES203](#) Fundamentals of Natural Resources 3
- [NRES230](#) Introduction to Soil Science 4
- [NRES284](#) Principles Forest Conservation 4
- [NRES286](#) Principles of Watersheds 3
- [NSCI103](#) Environmental Science 3
- [NSCI104](#) Environmental Science Lab 1
- [PSYC101](#) Introduction to Psychology 4
- [PSYC210](#) Statistics 3
- [SOWK480](#) Grantwriting 3

Complete one course from the following two:

- [GEOL121](#) Physical Geology 4
- [NSCI102](#) Great Lakes Region: Geology & Resources 4

Complete one course from the following two:

- [CHEM108](#) Applied Chemistry 3
- and**
- [CHEM109](#) Applied Chemistry Lab 1
- or**
- [CHEM115](#) General Chemistry I 5

Complete one course from the following two:

- [EMED188](#) Wilderness First Responder 2
- [EMED189](#) Medical First Responder 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 125 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Political Science: Bachelor of Arts/Science

Program Description

Political science is the systematic study of government, politics and public policy. It is one of a number of liberal arts majors that prepare students for a broad range of career opportunities.

Political science majors choose one of four tracks or concentrations: general political science, pre-law, public administration or historical and comparative politics. 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.

Program Learning Outcomes:

Critical Thinking: Students will demonstrate the ability to think critically and analytically about politics.

Communication: Students will communicate effectively, both orally and in writing, about political issues and theories.

World View: Students will discuss and analyze the world and contemporary political issues from perspectives other than their own.

Think Globally: Students will demonstrate the ability to think globally.

Analysis: Students will analyze domestic and international political events and behaviors through the use of political theories and concepts.

Available degrees (see specific degree requirements further down the page):

[Bachelor of Arts/Science Political Science-General](#)

[Bachelor of Arts/Science Political Science-Pre-Law](#)

[Bachelor of Science Political Science-Public Administration](#)

Degree Requirements

Bachelor of Arts/Science Political Science--General

The general political science concentration is designed to provide a broad education in political science. It is most appropriate for students who plan to attend graduate school in political science and for those with an interest in government and politics who wish to get a broad, liberal education. 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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
- **or**
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2

A minimum of one course in each of three political science fields, and two courses in one of the fields:

- American Politics ([POLI301](#), [POLI325](#), [POLI367](#), [POLI467](#)) 3-4
- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Additional political science electives to reach 40 credits.

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

General Political Science Cognates

- [COMM302](#) Argumentation and Advocacy 3
- **or**
- [COMM320](#) Public Relations 4
- [ECON201](#) Principles of Macroeconomics 3
- [ENGL306](#) Technical Writing 3
- **or**
- [ENGL221](#) Creative Writing 3
- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [PHIL205](#) Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would

be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); FREN151-FREN152 or FREN251-FREN252 or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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

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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
or
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI120](#) Introduction to Legal Processes 3
- [POLI130](#) Introduction to State and Local Government 4
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI222](#) Introduction to the Legal Profession 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [POLI467](#) Constitutional Law and Civil Liberties 4

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

- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Additional political science electives to reach 42 credits

A minimum of 21 credits must be at the 300/400 level. (At least nine of these credits must be at the 400 level.)

Pre-Law Cognates

- [ACTG132](#) Principles of Accounting I 4
- [COMM302](#) Argumentation and Advocacy 3
- [ENGL306](#) Technical Writing 3
or
- [ENGL221](#) Creative Writing 3

- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [LAWS102](#) Legal Research and Case Analysis 3
- [LAWS202](#) Legal Writing and Analysis 3
- [PHIL205](#) Logic 3

Two law courses in different disciplines from the following:

- [BUSN350](#) Business Law I 3
- [BUSN355](#) Business Law II 3
- [CJUS250](#) Correctional Law 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS409](#) Procedural Criminal Law 3
- [EVRN311](#) Environmental Law 3
- [INTB375](#) International Business Law 3
- [MGMT451](#) Labor Law 4
- [POLI301](#) Policy Analysis and Evaluation 3
- [POLI342](#) International Environmental Policy 3
- [POLI499](#) Political Science/Public Administration Internship 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Political Science--Public Administration

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

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4
- **or**
- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI130](#) Introduction to State and Local Government 4
- [POLI201](#) Introduction to Public Administration 3

- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI301](#) Policy Analysis and Evaluation 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI401](#) Principles of Public Administration 3
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [POLI499](#) Public Administration Internship 3

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

- Comparative Politics ([POLI234](#), [POLI331](#), [POLI334](#)) 3-4
- International Relations ([POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)) 3-4

Public Administration Cognates

- [ACTG132](#) Principles of Accounting I 4
- [COMM302](#) Argumentation and Advocacy 3
- **or**
- [COMM320](#) Public Relations 4
- [ECON201](#) Principles of Macroeconomics 3
- [ECON305](#) Public Finance 3
- [ENGL306](#) Technical Writing 3
- **or**
- [ENGL221](#) Creative Writing 3
- HIST Full-year history sequence ([HIST101-HIST102](#) or [HIST131-HIST132](#)) 8
- [MGMT360](#) Management Concepts & Applications 3
- [MGMT365](#) Human Resource Management 3

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Arts/Science Political Science--Historical and Comparative Politics

The historical and comparative politics concentration is designed to provide a broad education in these areas of political science. It is most appropriate for students who plan to attend graduate school in political science or history and for those with an interest in working in the international community. 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 and History Courses

- [POLI101](#) Freshman Seminar 2
- [POLI110](#) Introduction to American Government and Politics 4

or

- [POLI160](#) Introduction to Canadian Government and Politics 3
- [POLI202](#) Sophomore Seminar Political Research & Statistics 3
- [POLI303](#) Junior Seminar 4
- [POLI351](#) Political Philosophy 4
- [POLI404](#) Senior Seminar I 2
- [POLI405](#) Senior Seminar II 2
- [HIST101](#) History of World Civilization I 4
- [HIST102](#) History of World Civilization II 4

Area Studies-Europe:

- [HIST315](#) Europe Napoleon World War I 4
- or**
- [HIST316](#) Europe in the 20th Century 4
 - [POLI331](#) Comparative Politics of Europe 4

Issue Studies-International Relations:

- [HIST250](#) The Atlantic World 3
- [POLI241](#) Introduction to International Relations 4

Issue Studies-US Foreign Policy:

- [HIST441](#) History American Foreign Policy 1776-1950 3
- [POLI411](#) U.S. Foreign Policy 3

Additional political science or history electives to reach 40 credits. A minimum of 21 credits must be at the 300/400 level, with at least nine of these at the 400 level.

General Political Science Cognates

- [COMM302](#) Argumentation and Advocacy 3
- or**
- [COMM320](#) Public Relations 4
 - [ECON201](#) Principles of Macroeconomics 3
 - [ENGL306](#) Technical Writing 3
- or**
- [ENGL221](#) Creative Writing 3
 - [PHIL205](#) Logic 3

Bachelor of Arts Cognates (8 credits)

One year of a modern language other than English. If taken at LSSU, this would be [CHIN151-CHIN152](#) or [CHIN251-CHIN252](#); [FREN151-FREN152](#) or [FREN251-FREN252](#) or [SPAN161-SPAN162](#). One-half year of two different languages will not meet this requirement.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Prelaw (non-degree)



Program Description

There is essentially a three-step process in becoming a licensed attorney. First, an individual must complete an undergraduate degree at a college or university. Second, one must then go on to law school to obtain a juris doctorate degree. Finally, successful completion of the state bar exam is required for licensure. In being admitted into law school, the two most important factors that are evaluated by most law schools are undergraduate grades and Law School Admission Test (LSAT) scores — an entrance exam required of nearly all law schools in the United States and some in Canada.

The American Bar Association and most law schools do not recommend any particular undergraduate major before going on to law school. Consequently, a student should choose a major in which he/she has both interest and aptitude. Yet, there are important skills, values, and certain knowledge that can be acquired prior to law school which will assist a student in being successful at law school. Such values and knowledge include: analytical and problem-solving skills, critical reading abilities, writing skills, oral communication and listening abilities, research skills, task organization and management skills, ethical values, and, of course, knowledge of the law. In fact, a prelaw minor is available at LSSU which consists of courses that will assist a prelaw student in further developing these skills, values and knowledge.

Since there is no required prelaw major, the American Bar Association and law schools strongly recommend that law school bound students contact the Prelaw Advisor at their university as early in the educational process as possible. At LSSU, our approach to advising prelaw students is very individualized. We want to help each student fulfill their goals and to be successful at law school and beyond.

The Prelaw Advisor at LSSU can provide individualized guidance with regard to selecting an undergraduate curriculum (both a major and a minor); recommending particular courses that will enhance necessary skills, values and knowledge; assisting in the law school admission process; and providing relevant career and professional trend information.

Degree Requirements

Although there is no recommended or required prelaw curriculum, there are some excellent options that students may want to consider at LSSU. The following LSSU programs include key components with regard to legal knowledge as well as writing, analytical and research skills:

- Political Science—Prelaw Concentration (major)

- Prelaw (minor)

Students should seek guidance from LSSU's Prelaw Advisor as early as possible to ensure they are individually counseled with regards to their respective interests, undergraduate curriculum choice, as well as personal and professional goals.

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Biology: Bachelor of Science

Program Description

The Bachelor of Science degree in biology combines theory and concepts of biology with intensive, hands-on experiences in our state-of-the-art laboratories and a wealth of close-by field sites. Students build on a core of biology classes by selecting the physiology and taxonomy classes and other electives that best fit their interests.

The program is an excellent preparation for biology or related careers. Our graduates are currently employed as doctors, dentists, veterinarians, biological researchers, laboratory technicians, consultants and teachers. Many careers in biology require education beyond the baccalaureate degree and LSSU's biology program has a proven record of excellent preparation for professional and graduate school.

Animal Biology concentration - In this program, you will study the physiology, nutrition, behavior, and health of animals, with focus on species that are economic resources or beloved companions. Includes instruction in molecular and cell biology, microbiology, nutrition and physiology, ecology and behavior, genetics and evolutionary biology, disease prevention, and applications to specific species and phyla. As an animal biology major, you'll have the chance to put your theoretical knowledge into practice by working with wild and domesticated animals in hands-on situations. It will prepare you for employment in laboratories, zoos, farms, or animal shelters.

Food and Ecology concentration - prepares students for specific careers or graduate studies in particular aspects of the food system. These careers range from technical, policy, outreach, and research work with federal, local and tribal government agencies; university research, food businesses; NGOs working to improve health and nutrition, advocacy groups, industry groups. The skills required for these careers thus range across a number of disciplines. This program provides the required basis in biological sciences and adds choices in other disciplines to let students tailor their program to their specific interests. Students interested in pursuing graduate school in the sciences should consider adding additional chemistry classes, including organic chemistry, to their schedule. The program requires that students complete an apprenticeship class with an organization working in an aspect of the food system and complete a senior project.

Pre-Medical concentration - prepares students for medical, dental, optometry, podiatry, chiropractic, and physician assistant graduate studies. Biology students will work with a pre-professional advisor to select the electives best suited for the health professional program of their choice while also providing a well-rounded biology education. This program has an embedded chemistry minor that meets the requirements of most U.S. medical schools. The LSSU Biology department is recognized by all health professional schools in Michigan as a top

rate biology program.

LSSU participates in the Michigan State University College of Human Medicine's Early Assurance Program. During their junior year, students who excel in the LSSU biology pre-medical program may apply to the College of Human Medicine, and selected students will be assured of admission and begin a relationship with MSU College of Human Medicine during their senior year of college.

Pre-Veterinary concentration - with an embedded chemistry minor, prepares students to enter veterinary college after graduation from LSSU. It was designed to meet the specific requirements for the Michigan State University-College of Veterinary Medicine, but our students go to vet schools all over the country, for example North Carolina State, Oklahoma State and University of Illinois. This program stresses not only academics, but also the animal care experience that is critical for gaining admission to a veterinary college.

Program Learning Outcomes:

Thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Effectively communicate the results or outcomes of a scientific investigation in multiple formats.

Engage in professional activities related to the study of biological sciences and practice good professional ethics.

Available degrees (see specific requirements further down the page):

- [Bachelor of Science Biology](#)
- [Bachelor of Science Biology, Animal Biology Concentration](#)
- [Bachelor of Science Biology, Food and Ecology Concentration](#)
- [Bachelor of Science Biology, Pre-Medical Concentration](#)
- [Bachelor of Science Biology, Pre-Veterinary Concentration](#)

Degree Requirements

Bachelor of Science Biology

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1

- [BIOL499](#) Senior Symposium 1

Focal Courses in Biology (7 - 8 credits)

Physiology Elective (1 course from)

- [BIOL315](#) Plant Physiology 4
- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Cell Biology 4

Taxonomy Elective (1 course from)

- [BIOL202](#) Field Botany 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [BIOL306](#) Mycology 3
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [NRES475](#) Aquatic Entomology 3

Biology Cognates (21 credits)

21 credits of any BIOL courses not used to satisfy one of the other requirements, or any NRES courses other than [NRES199](#), [NRES299](#), [NRES250](#), [NRES398](#), [NRES399](#), [NRES450](#), NRES490, [NRES495](#), or [NRES499](#). A minimum of 17 credits must be from 300/400 level courses. At least one elective must be a 400 level course.

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Science 4
- Physical Science (CHEM, PHYS, GEOL) course with lab 4

Free Electives - 16 - 19 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Animal Biology Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Animal Biology (20 credits)

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrae Anatomy 4
- [BIOL330](#) Animal Physiology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL420](#) Evolutionary Analyses 3
- [BIOL335](#) Animal Nutrition 3
- or**
- [BIOL426](#) Animal Disease and Zoonoses 3

Cognates (Choose 12 credits from)

Zoology:

- [NRES240](#) Natural History of Vertebrates 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [NRES475](#) Aquatic Entomology 3

or/and

Animal Health:

- [BIOL306](#) Mycology 3
- [BIOL423](#) Immunology* 4
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [CHEM353](#) Toxicology* 4

Support Courses (17 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3

Free Electives - 21 - 24 credits as needed to reach 124 total credits

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Requires [CHEM225](#) and [CHEM351](#)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Food and Ecology Concentration

Biology Foundation and Research Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Food Systems (12-13 credits)

- [BIOL307](#) US Food Systems 3
- [BIOL202](#) Plant Sciences: Identification and Diversity 3
- [BIOL235](#) Protected Horticulture 3
- [BIOL389](#) Apprenticeship in (Food Systems) 3-4

Speciality Cognates (6 - 11 credits)

Choose One Area:

Policy and Communications (select 3 classes - 9 credits)

- [POLI130](#) Intro to State and Local Government 3
- [POLI301](#) Policy Analysis and Evaluation 3
- [COMM302](#) Argumentation and Advocacy 3
- or**
- [COMM320](#) Public Relations 3

Production (11 credits)

- [BIOL232](#) Introduction to Aquaponics 4
- [BIOL306](#) Mycology 3
- [BIOL315](#) Plant Sciences: Structure and Function 4

Marketing (select 2 classes - 6 credits)

- [MRKT281](#) Introduction to Marketing 3
- [MRKT384](#) Social Media Marketing 3
- [MRKT386](#) Mobile Marketing 3

Analytics (select 3 classes - 8-9 credits)

- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [EVRN131](#) Introduction to GIS 3
- [EVRN225](#) Intermediate GIS 2
- [EVRN325](#) Geospatial Analysis 3

Support Courses (8 credits)*

- [CHEM115](#) General Chemistry 5
- [MATH111](#) College Algebra 3

Free Electives - credits as needed to reach 124 total credits.

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Students interested in science graduate programs should consult with their advisor regarding additional chemistry courses.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Medical Concentration

Biology Courses (34 credits)

- [BIOL121](#) Human Anatomy and Physiology I 4
- [BIOL122](#) Human Anatomy and Physiology II 4
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology* 4

- [BIOL421](#) Adv Cell & Molecular Biology* 4

Advanced Study - Select 17 credits from the following list:

- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL380](#) Hematology 4
- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [BIOL406](#) Immunohematology 3
- [BIOL422](#) Parasitology 3
- [BIOL423](#) Immunology 3
- [BIOL425](#) Virology 3
- [BIOL426](#) Animal Disease and Zoonosis 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL455](#) Body Fluids Analysis 3
- [BIOL480](#) Advanced Clinical Microbiology 4

Support Courses

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II
- [HLTH328](#) Multicultural Approaches to Health Care 3
- [PSYC101](#) Introduction to Psychological Science 3
- [SOCY101](#) Introduction to Sociology 4

Free Electives - 12 - 14 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Veterinary Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology* 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1

- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Seminar 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Adv Cell & Molecular Biology* 4

Taxonomy Elective (1 course from)

- [BIOL306](#) Mycology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3

Support Courses (37 credits)

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business/Life Science 4
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II 4

Advanced Study - Select 17 credits from the following list:

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL335](#) Animal Nutrition* 3
- [BIOL380](#) Hematology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL423](#) Immunology 4
- [BIOL426](#) Animal Disease and Zoonoses 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL480](#) Advanced Microbiology 4

*These courses required by MSU-CVM.

Free Electives - 9 - 11 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Pre-Pharmacy (transfer program)

Program Description

Most pharmacy schools require students to take two years of pre-pharmacy preparation prior to being admitted to their four-year professional program. Admission into the professional pharmacy programs is very competitive and is based, to a large extent, on grades in specific required courses. Many pharmacy colleges also require applicants to take the Pharmacy College Admission Test (P.C.A.T.). This exam is generally taken mid-way through your second pre-pharmacy year.

Pre-pharmacy requirements vary greatly between different colleges that offer professional programs in pharmacy. In general, most require a pre-pharmacy program that emphasizes math and science as well as strong communication skills. Recently, a majority of the nation's schools began to move toward awarding the doctor of pharmacy (Pharm.D.) as the only professional degree in pharmacy. Because many pharmacy curricula are currently being modified, pre-pharmacy requirements are also subject to change.

The modifications in professional pharmacy curricula, combined with the variability in pre-pharmacy requirements, make it imperative for a pre-pharmacy student to determine the requirements for admission at the schools he or she desires to attend. A pre-pharmacy curriculum at Lake Superior State University can then be designed to help you obtain your goals. It is your responsibility to contact the directors of admissions at the pharmacy schools to which you are planning to apply so you can remain informed of their most recent requirements for admission.

Degree Requirements

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.

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Biology: Bachelor of Science



Program Description

The Bachelor of Science degree in biology combines theory and concepts of biology with intensive, hands-on experiences in our state-of-the-art laboratories and a wealth of close-by field sites. Students build on a core of biology classes by selecting the physiology and taxonomy classes and other electives that best fit their interests.

The program is an excellent preparation for biology or related careers. Our graduates are currently employed as doctors, dentists, veterinarians, biological researchers, laboratory technicians, consultants and teachers. Many careers in biology require education beyond the baccalaureate degree and LSSU's biology program has a proven record of excellent preparation for professional and graduate school.

Animal Biology concentration - In this program, you will study the physiology, nutrition, behavior, and health of animals, with focus on species that are economic resources or beloved companions. Includes instruction in molecular and cell biology, microbiology, nutrition and physiology, ecology and behavior, genetics and evolutionary biology, disease prevention, and applications to specific species and phyla. As an animal biology major, you'll have the chance to put your theoretical knowledge into practice by working with wild and domesticated animals in hands-on situations. It will prepare you for employment in laboratories, zoos, farms, or animal shelters.

Food and Ecology concentration - prepares students for specific careers or graduate studies in particular aspects of the food system. These careers range from technical, policy, outreach, and research work with federal, local and tribal government agencies; university research, food businesses; NGOs working to improve health and nutrition, advocacy groups, industry groups. The skills required for these careers thus range across a number of disciplines. This program provides the required basis in biological sciences and adds choices in other disciplines to let students tailor their program to their specific interests. Students interested in pursuing graduate school in the sciences should consider adding additional chemistry classes, including organic chemistry, to their schedule. The program requires that students complete an apprenticeship class with an organization working in an aspect of the food system and complete a senior project.

Pre-Medical concentration - prepares students for medical, dental, optometry, podiatry, chiropractic, and physician assistant graduate studies. Biology students will work with a pre-professional advisor to select the electives best suited for the health professional program of their choice while also providing a well-rounded biology education. This program has an embedded chemistry minor that meets the requirements of most U.S. medical schools. The LSSU Biology department is recognized by all health professional schools in Michigan as a top

rate biology program.

LSSU participates in the Michigan State University College of Human Medicine's Early Assurance Program. During their junior year, students who excel in the LSSU biology pre-medical program may apply to the College of Human Medicine, and selected students will be assured of admission and begin a relationship with MSU College of Human Medicine during their senior year of college.

Pre-Veterinary concentration - with an embedded chemistry minor, prepares students to enter veterinary college after graduation from LSSU. It was designed to meet the specific requirements for the Michigan State University-College of Veterinary Medicine, but our students go to vet schools all over the country, for example North Carolina State, Oklahoma State and University of Illinois. This program stresses not only academics, but also the animal care experience that is critical for gaining admission to a veterinary college.

Program Learning Outcomes:

Thoroughly research and synthesize the primary literature for information relevant to a current scientific investigation.

Design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Effectively communicate the results or outcomes of a scientific investigation in multiple formats.

Engage in professional activities related to the study of biological sciences and practice good professional ethics.

Available degrees (see specific requirements further down the page):

- [Bachelor of Science Biology](#)
- [Bachelor of Science Biology, Animal Biology Concentration](#)
- [Bachelor of Science Biology, Food and Ecology Concentration](#)
- [Bachelor of Science Biology, Pre-Medical Concentration](#)
- [Bachelor of Science Biology, Pre-Veterinary Concentration](#)

Degree Requirements

Bachelor of Science Biology

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1

- [BIOL499](#) Senior Symposium 1

Focal Courses in Biology (7 - 8 credits)

Physiology Elective (1 course from)

- [BIOL315](#) Plant Physiology 4
- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Cell Biology 4

Taxonomy Elective (1 course from)

- [BIOL202](#) Field Botany 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [BIOL306](#) Mycology 3
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [NRES475](#) Aquatic Entomology 3

Biology Cognates (21 credits)

21 credits of any BIOL courses not used to satisfy one of the other requirements, or any NRES courses other than [NRES199](#), [NRES299](#), [NRES250](#), [NRES398](#), [NRES399](#), [NRES450](#), NRES490, [NRES495](#), or [NRES499](#). A minimum of 17 credits must be from 300/400 level courses. At least one elective must be a 400 level course.

Support Courses

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business & Life Science 4
- Physical Science (CHEM, PHYS, GEOL) course with lab 4

Free Electives - 16 - 19 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Animal Biology Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Animal Biology (20 credits)

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrae Anatomy 4
- [BIOL330](#) Animal Physiology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL420](#) Evolutionary Analyses 3
- [BIOL335](#) Animal Nutrition 3
- or**
- [BIOL426](#) Animal Disease and Zoonoses 3

Cognates (Choose 12 credits from)

Zoology:

- [NRES240](#) Natural History of Vertebrates 3
- [BIOL302](#) Invertebrate Zoology 3
- [BIOL303](#) General Entomology 4
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [NRES475](#) Aquatic Entomology 3

or/and

Animal Health:

- [BIOL306](#) Mycology 3
- [BIOL423](#) Immunology* 4
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3
- [CHEM353](#) Toxicology* 4

Support Courses (17 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry 4
- or**
- [CHEM208](#) Survey of Organic Chemistry 4
- [MATH111](#) College Algebra 3

Free Electives - 21 - 24 credits as needed to reach 124 total credits

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Requires [CHEM225](#) and [CHEM351](#)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Food and Ecology Concentration

Biology Foundation and Research Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biostatistics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Focal Courses in Food Systems (12-13 credits)

- [BIOL307](#) US Food Systems 3
- [BIOL202](#) Plant Sciences: Identification and Diversity 3
- [BIOL235](#) Protected Horticulture 3
- [BIOL389](#) Apprenticeship in (Food Systems) 3-4

Speciality Cognates (6 - 11 credits)

Choose One Area:

Policy and Communications (select 3 classes - 9 credits)

- [POLI130](#) Intro to State and Local Government 3
- [POLI301](#) Policy Analysis and Evaluation 3
- [COMM302](#) Argumentation and Advocacy 3
- or**
- [COMM320](#) Public Relations 3

Production (11 credits)

- [BIOL232](#) Introduction to Aquaponics 4
- [BIOL306](#) Mycology 3
- [BIOL315](#) Plant Sciences: Structure and Function 4

Marketing (select 2 classes - 6 credits)

- [MRKT281](#) Introduction to Marketing 3
- [MRKT384](#) Social Media Marketing 3
- [MRKT386](#) Mobile Marketing 3

Analytics (select 3 classes - 8-9 credits)

- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [EVRN131](#) Introduction to GIS 3
- [EVRN225](#) Intermediate GIS 2
- [EVRN325](#) Geospatial Analysis 3

Support Courses (8 credits)*

- [CHEM115](#) General Chemistry 5
- [MATH111](#) College Algebra 3

Free Electives - credits as needed to reach 124 total credits.

A minimum of 17 credits must be from BIOL/NRES 300/400 level courses. At least one elective must be a BIOL/NRES 400 level course.

*Students interested in science graduate programs should consult with their advisor regarding additional chemistry courses.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Medical Concentration

Biology Courses (34 credits)

- [BIOL121](#) Human Anatomy and Physiology I 4
- [BIOL122](#) Human Anatomy and Physiology II 4
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1
- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Symposium 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology* 4

- [BIOL421](#) Adv Cell & Molecular Biology* 4

Advanced Study - Select 17 credits from the following list:

- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL380](#) Hematology 4
- [BIOL385](#) Public Health Statistics and Epidemiology 3
- [BIOL406](#) Immunohematology 3
- [BIOL422](#) Parasitology 3
- [BIOL423](#) Immunology 3
- [BIOL425](#) Virology 3
- [BIOL426](#) Animal Disease and Zoonosis 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL455](#) Body Fluids Analysis 3
- [BIOL480](#) Advanced Clinical Microbiology 4

Support Courses

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II
- [HLTH328](#) Multicultural Approaches to Health Care 3
- [PSYC101](#) Introduction to Psychological Science 3
- [SOCY101](#) Introduction to Sociology 4

Free Electives - 12 - 14 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Biology, Pre-Veterinary Concentration

Biology Courses (26 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL199](#) Freshman Seminar 1
- [BIOL204](#) General Microbiology* 4
- [BIOL220](#) Genetics 4
- [BIOL280](#) Biometrics 3
- [BIOL299](#) Sophomore Seminar 1

- [BIOL337](#) General Ecology 3
- [BIOL399](#) Planning Research Project 1
- [BIOL499](#) Senior Seminar 1

Physiology Elective (1 course from)

- [BIOL330](#) Animal Physiology 4
- [BIOL421](#) Adv Cell & Molecular Biology* 4

Taxonomy Elective (1 course from)

- [BIOL306](#) Mycology 3
- [BIOL422](#) Parasitology 3
- [BIOL425](#) Virology 3

Support Courses (37 credits)

- [CHEM115](#) General Chemistry 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Biochemistry 4
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business/Life Science 4
- [PHYS221](#) Principles of Physics I 4
- [PHYS222](#) Principles of Physics II 4

Advanced Study - Select 17 credits from the following list:

- [BIOL208](#) Principles of Animal Biology and Health 3
- [BIOL243](#) Vertebrate Anatomy 4
- [BIOL306](#) Mycology 3
- [BIOL332](#) Embryology 3
- [BIOL335](#) Animal Nutrition* 3
- [BIOL380](#) Hematology 4
- [BIOL405](#) Animal Behavior 3
- [BIOL423](#) Immunology 4
- [BIOL426](#) Animal Disease and Zoonoses 3
- [BIOL433](#) Histology and Histopathology 4
- [BIOL480](#) Advanced Microbiology 4

*These courses required by MSU-CVM.

Free Electives - 9 - 11 credits as needed to reach 124 total credits.

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.75 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Robotics Engineering: Bachelor of Science

Program Description

LSSU was the first university in the nation to institute an accredited B.S. degree program in Robotics Engineering Technology in 1985. Since the 1990s, robotics has been offered as a concentration or minor within LSSU's engineering and engineering technology degree programs. With the maturing of robotics technology, the B.S. degree program in Robotics Engineering was developed at LSSU to meet the demand for engineers to design and implement robotics systems for industrial automation. Students in the program will also be introduced to mobile robotics technology and its application in warehousing, military, health care, and human assistance.

Similar to other engineering programs, this Robotics Engineering program will build upon a solid foundation of courses in mathematics, sciences, English, humanities and the social sciences. In addition to the theoretical background presented in the program's courses by full-time faculty members in small class settings, the students will also have numerous opportunities to work hands-on in lab courses. They will have many opportunities to work with millions of dollars' worth of industry standard equipment including various types of industrial robots, PLCs vision systems, conveying systems, simulation software, end-of-arm tools, and sensors. This facility was recognized by the Technology Accreditation Commission of ABET as one of the most complete and advanced facilities of its kind in the country.

For several decades LSSU has been preparing graduates for industries involved in the design and implementation of automated systems for manufacturing. The demand for LSSU graduates with specialization in robotics has been well established over multiple decades. Industrial robotics and systems integration companies specifically seek out robotics engineering talent from LSSU. Over the years, this has resulted in substantially more job offers for the graduates (with nationally competitive salaries) than the number of graduates. Robotics Engineering graduates are employed in several types of industries involving manufacturing, autonomous vehicles, prosthetics design and build, or service robotics (hospitals, military, healthcare, rehabilitation, etc.).

There is an explosive growth in the application of robotics in the manufacturing industries and in the human service areas. LSSU will continue to successfully prepare graduates to meet the growing demand for technical talent in robotics.

Program Learning Outcomes:

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural,

social, environmental, and economic factors

Communicate effectively with a range of audiences

Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Acquire and apply new knowledge as needed, using appropriate learning strategies

Degree Requirements

Robotics Engineering Core (81 credits):

- [EGEE125](#) Digital Fundamentals 4
- [EGEE210](#) Circuit Analysis 4
- [EGEM220](#) Statics 3
- [EGME141](#) Solid Modeling 3
- [EGNR101](#) Introduction to Engineering 2
- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGNR265](#) "C" Programming 3
- [EGNR340](#) Numerical Methods for Engineers 1
- [EGNR490](#) Special Topics in Engineering 4
- [EGRS215](#) Introduction to Robotics 2
- [EGRS365](#) Programmable Logic Controllers 3
- [EGRS372](#) Mobile Robotics 4
- [EGRS385](#) Robotics Engineering 4
- [EGRS430](#) System Integration and Machine Vision 4
- [EGRS435](#) Automated Manufacturing System 3
- [EGRS460](#) Control Systems 4
- [CHEM115](#) General Chemistry I 5
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH308](#) Probability and Mathematical Statistics 3
- [MATH310](#) Differential Equations 3
- [PHYS231](#) Applied Physics for Engineers and Scientists I 4
- [PHYS232](#) Applied Physics for Engineers and Scientists II 4

Senior Year Experience (Complete one of the following sequences (6-13 credits):

Industrial Project

- [EGNR491](#) Engineering Design Project I 3

- [EGNR495](#) Engineering Design Project II 3

Cooperative Project

- [EGNR250](#) Cooperative Education 2
- [EGNR450](#) Cooperative Education Project I 4
- [EGNR451](#) Cooperative Education Project II 3
- [EGNR491](#) Engineering Design Project I 3

Research Project

- [EGNR260](#) Engineering Research Methods 2
- [EGNR460](#) Engineering Research Project I 4
- [EGNR461](#) Engineering Research Project II 2

Technical Electives (6 credits minimum required):

- [CSCI281](#) Intro to UNIX and Networking (or higher level CSCI) 3
- [EGEE250](#) Microcontroller Fundamentals (or higher level EGEE) 4
- [EGEM320](#) Dynamics 3
- [EGET310](#) Electronic Manufacturing Processes 4
- [EGME225](#) Mechanics of Materials (or higher level EGME) 3
- [EGMT216](#) CAM with CNC Applications 3
- [EGNR261](#) Energy Systems/Sustainability (or higher level EGNR) 3
- [EGRS461](#) Design of Control Systems 4

Support Elective (3 credits minimum required):

- [BUSN231](#) Business Communications (or higher level BUSN) 3
- [CSCI201](#) Data Structures and Algorithms (or higher level CSCI) 4
- [ECON302](#) Managerial Economics (or higher level ECON) 4
- [EGME110](#) Manufacturing Processes 3
- [MATH215](#) Fundamental Concepts of Mathematics (or higher level MATH) 3
- [MGMT280](#) Introduction Management Information Systems 3 (or higher level MGMT) 3
- or coursework from the Technical Electives

Free Electives (4 credits minimum required)

General Education: All LSSU bachelor's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Aquaponics Entrepreneurship

Program Description

The associate of applied science degree in Aquaponics Entrepreneurship covers content in aquaponics, engineering/automation and business; three essential needs areas for the aquaponics industry. Aquaponics includes an understanding of how to keep plants and aquatic organisms alive, including basic biology, water quality, nutrition, and an introduction to system designs. The engineering component addresses system automation, as well as an independent study to understand aquaponics systems, pumps, power tools, etc. The business component includes accounting and marketing skills, as well as an independent study/internship in entrepreneurship, skills that are essential to a successful aquaponics business.

Program Learning Outcomes:

At the end of the program, students will be able to recall and apply principles of:

The basic biology and water quality (chemistry and microbiology) of aquaponics especially as applied to the production of healthy plants.

Operation and maintenance of the equipment, and sustainable energy design components of aquaponics systems.

Operating an economically sustainable aquaponics business through an understanding of business planning, marketing, and accounting.

Degree Requirements

Degree Requirements (57 credits):

- [ACTG132](#) Principles of Accounting I 4
- [BIOL104](#) Survey of General Biology 4
- **or**
- [BIOL132](#) General Biology II: Organisms 4
- [BIOL232](#) Introduction to Aquaponics 4
- [BIOL235](#) Introduction to Protected Horticulture 3
- [BIOL290](#) Independent Study in Aquaponics 4
- [BUSN121](#) Introduction to Business 3
- [BUSN299](#) Internship in Entrepreneurship (SAS) 2
- [BUSN389](#) Entrepreneurship 3
- BUSN Business Elective 3
- [CHEM108](#) Applied Chemistry 3

- [CHEM109](#) Applied Chemistry Lab 1
- [CSCI105](#) Introduction to Computer Programming 3
- [CSCI163](#) Troubleshooting and Repair of Personal Computers 3
- [EGRS215](#) Introduction to Robotics 2
- [EGNR261](#) Energy Systems/Sustainability 3
- [MATH111](#) College Algebra 3
- [MRKT281](#) Marketing Principles and Strategy 3

Free Electives to total 62 credits

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Cannabis Science



Program Description

The associate in Cannabis Science equips graduates with the skills necessary to gain employment in the emerging cannabis markets in Michigan, the United States, and beyond. Cannabis Science graduates earn over 400 hours of hands-on laboratory experience to prepare them for a career as technician in the cannabis field. Cannabis science technicians perform laboratory extractions, preparations and analytical testing. This degree may also lead to a BS in Cannabis Chemistry. The chemistry program at Lake Superior State University is approved by the American Chemical Society.

Program Learning Outcomes:

Interpret and discuss basic cannabis chemistry.

Demonstrate lab knowledge and skills.

Employ chemical instrumentation skills.

Practice communication skills.

Apply information retrieval skills.

Embrace and use safe chemical practices.

Degree Requirements

Chemistry (26 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CCHM120](#) Cannabis Chemistry I 1
- [CHEM208](#) Survey Organic Chemistry 4
- [CHEM231](#) Quantitative Analysis 4
- [CCHM240](#) Cannabis Plant Sample Prep 2
- [CCHM245](#) Cannabis Chemistry II 1
- [CHEM332](#) Instrumental Analysis 4

Support Courses (7 credits)

- [USEM101](#) University Seminar Foundation Success 1
- [MATH111](#) College Algebra 3

- [BUSN211](#) Business Statistics 3
- **or**
- [MATH207](#) Principles of Statistical Methods 3

Biology Courses (15 credits)

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL204](#) General Microbiology 4
- [BIOL235](#) Intro to Protected Horticulture 3

Free Electives (5 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Chemistry



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.

This degree program may also lead to a BS in Chemistry, Environmental Chemistry, Forensic Chemistry, Biochemistry Pre-Professional, or Environmental Science that may be certified by the American Chemical Society.

Program Learning Outcomes:

The Chemistry Associate Degree Graduate will demonstrate proficiency in their discipline.

The Chemistry Associate Degree Graduate will demonstrate readiness for advanced coursework in chemistry.

The Chemistry Associate Degree Graduate will demonstrate an operational knowledge of basic chemical instrumentation as used in chemical analysis.

Degree Requirements

Chemistry (26 credits)

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4

Other Departments (19 credits)

- [BUSN211](#) Business Statistics 3
- **or**
- [MATH207](#) Principles of Statistical Methods 3
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- Two semesters of College Physics (8 cr min)

Free Electives (8 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Computer Science

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 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.

Program Learning Outcomes:

Design and develop computer programs to meet specifications given to them. (*Design*)

Assist in analyzing, implementing, and integrating appropriate solutions for networking, database, and coding to applications and systems frameworks. (*Implementation*)

Use current software technologies and accepted best practices in software and systems design to help solve business and industrial problems. (*Best Practices*)

Communicate technical information relative to problems and solutions to professionals in the field. (*Communication*)

Degree Requirements

Departmental Courses (33 credits)

- [CSCI103](#) Survey of Computer Science 3
- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [CSCI163](#) Troubleshooting/Repair of Personal PCs 3
- **or**
- [CSCI415](#) Computer Organization and Architecture 3
- [CSCI201](#) Data Structures and Algorithms 4
- [CSCI211](#) Database Applications 3
- [CSCI221](#) Computer Networks 3
- [CSCI291](#) Computer Science Project 4
- [MATH111](#)* College Algebra 3
- [MATH207](#) Principles of Statistical Methods 3

Support Courses (3 credits)

- [BUSN121](#) Introduction to Business 3

Free Electives (8 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your General Education Requirements. A gpa of 2.50 or higher is required in the Major.

**May be used for general education credit.*

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Criminal Justice-Corrections



Program Description

The associate degree in corrections will prepare you to work in correctional facilities as corrections officers. Students who have 15 credits in Corrections, Criminal Justice, Psychology, Sociology, Educational Psychology, Family Relations, Guidance and Counseling, Pastoral Counseling, Social Work or Law Enforcement meet the education requirements for a corrections officer with the Michigan Department of Corrections.

Associate 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.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (27 credits)

- [CJUS101](#) Intro. to Criminal Justice 3
- [CJUS110](#) Introduction to Corrections 3
- [CJUS220](#) Institutional Corrections 3
- [CJUS240](#) Community Based Corrections 3
- [CJUS319](#) Substantive Criminal Law 3

[CJUS321](#) Ethical Issues in Public Safety 3

- [POLI120](#) Introduction to Legal Process 3
- [PSYC240](#) Behavior Management 3

Select one of the following two:

- [CJUS140](#) Criminological Theory and Correctional Client Growth 3
- or
- [SOCY214](#) Criminology 3

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Criminal Justice-Homeland Security

Program Description

This emphasis provides students with the knowledge and information related to careers in law enforcement and investigation with agencies such as Customs and Border Protection (CBP), Department of Homeland Security (DHS), Immigration and Customs Enforcement (ICE), municipal, county and/or state emergency management, Environmental Protection Agency (EPA), Internal Revenue Service, Transportation Security Administration (TSA), US Secret Service and numerous other agencies. Students are strongly encouraged to continue their studies to complete a Bachelor's degree to be successful in today's competitive labor market.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Departmental Requirements (18 credits)

- [CJUS101](#) Introduction to Criminal Justice 3
- [CJUS103](#) Introduction to Terrorism and Homeland Security 3
- [CJUS203](#) Cyberterrorism 3
- [CJUS204](#) Domestic and International Terrorism 3
- [CJUS243](#) Investigation 3
- [FIRE101](#) Introduction to Fire Science 3

Complete one of the following two options:

Generalist Concentration (21 Credits) chosen from list. Must include at least 6 credits in Criminal Justice:

- [CJUS302](#) Hate Crimes 3
- [CJUS303](#) Critical Infrastructure Protection 3
- [CJUS313](#) Crisis Intervention and Deviant Behavior 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS321](#) Ethical Issues in Public Safety 3
- [CJUS325](#) Homeland Security and Emergency Services 3
- [CJUS384](#) International and Comparative Criminal Justice Systems 3
- [CJUS484](#) Futures Research 4
- [EVRN131](#) Introduction to GIS & GPS 3
- [FIRE102](#) Wildlife and Rural Fire Control 3
- [FIRE111](#) Hazardous Materials 3
- [FIRE312](#) Hazardous Materials Management 4
- [FIRE315](#) Company Level Supervision and Management 3
- [NSCI102](#) Introduction to Geology 4
- [NSCI103/104](#) Environmental Science and Lab 4
- [POLI120](#) Introduction to Legal Processes 3
- [POLI130](#) Introduction to State and Local Government 4
- [POLI201](#) Introduction to Public Administration 3
- [POLI241](#) Introduction to International Relations 4
- [PSYC259](#) Abnormal Psychology 3

Certification Concentration (19 Credits) Note: Requires Admission to MCOLES academy - courses are taken in final spring and summer:

- [CJUS197](#) Physical Fitness for Public Safety 1 (Fall)
- [CJUS197](#) Physical Fitness for Public Safety 1 (Spring)
- [CJUS201](#) Firearms Training 1
- [CJUS301](#) Advanced Firearms 1
- [CJUS409](#) Procedural Criminal Law 3
- [CJUS411](#) Police Operations 5
- [CJUS444](#) Criminalistics 4
- [CJUS450](#) Skills Academy 2
- [EMED189](#) Medical First Responder 3

MCOLES Academy Admissions Requirements:

- Age 21 minimum
- U.S. Citizen
- Resident of Michigan
- Valid MI Drivers Licenses
- Complete and pass Reading and Writing test as prescribed by MCOLES (National Standardized screening test)
- Meet MCOLES physical fitness entrance standards within 120 prior to start
- Meet MCOLES health and vision minimum standards
- Successfully pass the entrance interview and background screen
- No Felony convictions
- Honorable discharge from Military with 2 years full-time duty service as a military police officer within 2 years of discharge with a minimum placement

at the B-Band on the MCOLES reading and writing pre-screening test or meet the MCOLES minimum education standard of Associates degree (62 semester credits minimum)

Students apply for admission in the fall for the academy sequence that runs from January-June.

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Criminal Justice-Law Enforcement

Program Description

The associate degree in law enforcement will prepare you for work in local law enforcement agencies provided you attend a police academy after graduation. This associate degree is also compatible with the bachelor of science degree in criminal justice/law enforcement. Graduates may also find positions with private security agencies.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Major Requirements (13 credits)

- [CJUS101](#) Intro. to Criminal Justice 3
- [CJUS102](#) Police Process 3
- [CJUS201](#) Firearms Training 1
- [CJUS206](#) Law Enforcement/Loss Control Internship 3
- [CJUS243](#) Investigation 3

Complete one of the following two options:

Generalist Concentration (21 Credits):

- [CJUS203](#) Cyberterrorism 3
- [CJUS212](#) Loss Control 3
- [CJUS313](#) Crisis Intervention Deviant Behavior 3
- CJUS Electives 6
- [POLI120](#) Introduction to Legal Process 3
- [CJUS140](#) Criminological Theory and Correctional Client Growth 3
- **or**
- [SOCY214](#) Criminology 3

Certification Concentration (19 Credits) Note: Requires Admission to MCOLES academy - courses are taken in final spring and summer:

- [CJUS197](#) Physical Fitness for Public Safety 1 (Fall)
- [CJUS197](#) Physical Fitness for Public Safety 1 (Spring)
- [CJUS201](#) Firearms Training 1
- [CJUS301](#) Advanced Firearms 1
- [CJUS409](#) Procedural Criminal Law 3
- [CJUS411](#) Police Operations 5
- [CJUS444](#) Criminalistics 4
- [CJUS450](#) Skills Academy 2
- [EMED189](#) Medical First Responder 3

MCOLES Academy Admissions Requirements:

- Age 21 minimum
- U.S. Citizen
- Resident of Michigan
- Valid MI Drivers Licenses
- Complete and pass Reading and Writing test as prescribed by MCOLES (National Standardized screening test)
- Meet MCOLES physical fitness entrance standards within 120 prior to start
- Meet MCOLES health and vision minimum standards
- Successfully pass the entrance interview and background screen
- No Felony convictions
- Honorable discharge from Military with 2 years full-time duty service as a military police officer within 2 years of discharge with a minimum placement at the B-Band on the MCOLES reading and writing pre-screening test or meet the MCOLES minimum education standard of Associates degree (62 semester credits minimum)

Students apply for admission in the fall for the academy sequence that runs from January-June.

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Early Childhood Education

Program Description

Lake Superior State University offers an associate degree in early childhood education for students wishing to meet the state standards for highly qualified paraprofessionals for public schools, assistant teachers for state-funded preschools and federally-funded HeadStart programs, and for caregivers in infant-toddler Early HeadStart. Field experience integrated with coursework provide opportunities for more in-depth learning and understanding of developmentally appropriate practices and effective interactions with young children. Students earning an associate degree in early childhood education can easily transition to the bachelor degree program when they are interested in expanding their qualifications.

Program Learning Outcomes:

Candidates demonstrate their content area knowledge in the design, implementation, and evaluation of experiences that result in developmental and learning outcomes for each child.

Candidates apply their knowledge and understanding of young children's developmental needs to create healthy, respectful, supportive, and challenging learning environments for each child.

Candidates demonstrate knowledge of systematic observations, documentation, and assessment strategies through the effective use of these techniques to promote positive outcomes for each child.

Candidates value the important and complex characteristics of children's families in their development of respectful, reciprocal relationships and the involvement of families in their children's development and learning.

Candidates demonstrate professional dispositions throughout coursework, field experience, and practicums.

Candidates integrate knowledge of ethical standards and other early childhood professional guidelines in advocating for sound educational practices and policies.

Degree Requirements

Degree Requirements (36 credits)

- [CHLD101](#) Foundation of Early Childhood Education 4

- [CHLD103](#) Learning Environments for the Young Child 4
- [CHLD150](#) Observation and Assessment 4
- [CHLD210](#) Infants and Toddlers 4
- [CHLD225](#) Emergent Literacy 3
- [CHLD241](#) STEM Foundations for the Young Child 4
- [CHLD242](#) Creativity & Humanities 4
- [CHLD245](#) Early Childhood Curriculum 3
- [CHLD260](#) Practicum I 4
- [CHLD270](#) Administration of Early Childhood Programs 2

Cognate Requirements (12 credits):

- [EDUC101](#) Self as Learner 1
- [BIOL105](#) Function of the Human Body 4
- [EMED181](#) First Aid 1
- [HLTH104](#) Nutrition for Early Childhood 3
- [SOCY103](#) Cultural Diversity 3

Free Electives (minimum 3 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Electrical Engineering Technology

Program Description

LSSU's Electrical Engineering Technology (EET) Associate's program integrates knowledge from areas of study such as science, math, computers, and electrical engineering to prepare you for an engineering technology career.

The EET program includes topics such as C programming, robotics, digital and microcontroller fundamentals. Most technical classes in the curriculum include a laboratory along with the lecture.

Program Learning Outcomes:

Apply written communication in technical environments

Describe and analyze circuits and other electrical systems and explain their use

Use computers, electronic instrumentation and coding to analyze, synthesize and solve problems in engineering

Degree Requirements

Engineering and Engineering Technology Courses (26 credits)

- [EGEE125](#) Digital Fundamentals (C or better required) 4
- [EGEE250](#) Microcontroller Fundamentals 4
- [EGET110](#) Applied Electricity (C or better required) 4
- [EGET175](#) Applied Electronics (C or better required) 4
- [EGME141](#) Solid Modeling 3
- [EGNR101](#) Introduction to Engineering 2
- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGNR265](#) C Programming 3

Mathematics and Science Courses (22 credits)

- [CHEM108](#) Applied Chemistry 3
- [CHEM109](#) Applied Chemistry Lab 1
- [MATH111](#) College Algebra (C or better required) 3
- [MATH112](#) Calculus for Business and Life Science 4
- [MATH131](#) College Trigonometry 3
- [PHYS221](#) Elements of Physics I (C or better required) 4
- [PHYS222](#) Elements of Physics II 4

Free Elective * (5 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

** General Education approved Humanities, Social Science, or Cultural Diversity elective is recommended for those students intending to pursue a BS-EET degree.*

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Fire Science

Program Description

The associate degree in fire science 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.

Program Learning Outcomes:

Students successfully completing this program will be able to:

Demonstrate professional-level knowledge, skills and abilities needed to perform as an emergency response practitioner.

Identify and employ appropriate professional ethical standards in the field.

Use professional-level critical thinking, technical writing, and verbal communication skills associated with public and private fire service interactions.

Degree Requirements

Major Requirements (24 credits)

- [CJUS341](#) Fire Cause & Arson Investigation 3
- [FIRE101](#) Introduction to Fire Science 3
- [FIRE111](#) Hazardous Materials 3
- [FIRE201](#) Fire Protection Construction Concepts 3
- [FIRE204](#) Fire Protection Hydraulics & Pumps 3
- [FIRE206](#) Fire Protection Systems Equipment and Industrial Fire Protection 3
- [FIRE211](#) Tactics & Strategy 3
- [FIRE315](#) Company Level Supervision and Management 3

Support Courses (8 credits)

- [EMED190](#) Prehospital Emergency Care & Crisis Intervention I 4
- [EMED191](#) Prehospital Emergency Care & Crisis Intervention II 4

Electives to total 62 credits

([FIRE197](#), [FIRE219](#) and [FIRE220](#) required for MFFTC certification)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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General Engineering

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.

Program Learning Outcomes:

Communicate in a technical environment

Analyze electrical and/or mechanical systems by applying math, science, and/or engineering equations and techniques

Use technical tools to solve engineering problems

Degree Requirements

Departmental Requirements

Engineering Courses (21 credits)

- [EGEE210](#) Circuit Analysis 4
- [EGEM220](#) Statics 3
- [EGNR101](#) Intro. to Engineering 2
- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGNR265](#) "C" Programming 3
- [EGNR340](#) Advanced Numerical Methods for Engineers 1
- Approved Technical Electives (see advisor for details) 6

Mathematics and Science Courses (28 credits)

- [CHEM115](#) General Chemistry I 5
- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH251](#) Calculus III 4
- [MATH310](#) Differential Equations 3
- [PHYS231](#) Applied Physics for Engineers and Scientists I 4
- [PHYS232](#) Applied Physics for Engineers and Scientists II 4

General Education: All LSSU Associate's degree candidates must complete the

LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

**Engineering course qualifies as General Education course*

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General Engineering Technology

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.

Program Learning Outcomes:

Communicate in a technical environment

Analyze electrical and/or mechanical systems by applying math, science, and/or engineering equations and techniques

Use technical tools to solve engineering problems

Degree Requirements

Departmental Requirements

Engineering and Engineering Technology Courses (25 credits)

- [EGME141](#) Solid Modeling 3
- [EGNR101](#) Introduction to Engineering 2
- [EGET110](#) Applied Electricity 4
- Technical Electives 16

Choose at least nine credits of additional EGxx Courses. Choose seven additional Technical Electives from [PHYS222](#) Elements of Physics II, any MATH course, [MATH151](#) or higher.

Mathematics and Science Courses (21 credits)

- [CHEM108](#) Applied Chemistry 3
- [CHEM109](#) Applied Chemistry Lab 1
- [MATH111](#) College Algebra 3
- [MATH112](#) Calculus for Business and Life Science 4
- [MATH131](#) Trigonometry 3
- [MATH207](#) Principles of Statistical Methods 3
- [PHYS221](#) Elements of Physics I 4

Support Course

- [CSCI101](#) Intro. to Microcomputer Applications 3

Electives (4 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

(General Education Electives met by [CHEM108](#), [CHEM109](#), and [PHYS221](#) listed above)

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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General Studies

Program Description

The Associate of General Studies degree (AGS) is a progressive and innovative degree program designed as the foundation to many bachelor's degree programs at the University. Attainment of the degree indicates proficiency in the broad range of knowledge and skills which are foundational to continued postsecondary education. Graduates of this degree will have developed broad competencies through a series of foundation courses comprising the University general education curriculum which is the basis of this degree, as well as the basis of the bachelor's degree.

Graduates will have satisfied the requirements for the Michigan Transfer Agreement (MTA) to facilitate transfer students who begin their program at LSSU, but wish to complete academic programs at other Michigan Universities in disciplines not available at LSSU. Finally, graduates will also demonstrate appropriate depth of knowledge through additional courses in a selected academic concentration suitable for continued study leading to a bachelor's degree.

Completion of educational milestones is known to correlate strongly to student success and achievement of long-term educational goals. Examples of milestones include completion of one year of college-level credits, completing the general education requirements and earning a certificate or degree. The Associate of General Studies is confirmation of the graduate's achievements in the first two years of university, preparing the individual for immediate employment through broad exposure to the liberal arts and sciences, and building toward the bachelor's degree for those who seek to continue their education.

Program Learning Outcomes:

Formal Communication: Students will be able to clearly express ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will be able to gather and process evidence to answer questions or solve problems within the content of their chosen studies.

Analysis and Synthesis: Students will be able to synthesize evidence, ideas, or works of imagination to answer questions or create an appropriate end-product within their chosen studies.

Professional Responsibility: Students will be able to apply ethical concepts and intercultural awareness when answering questions, solving problems, or completing assigned tasks related to their chosen studies.

Degree Requirements

General Education Requirements. Complete the Bachelors degree General Education Requirements.

Concentration: Complete at least 20 credits in a defined academic concentration. Concentrations must include at least 10 credits in LSSU courses. A minimum of a C or higher is required in each course.

Academic Concentrations:

- Behavioral Sciences - Courses with SOCY, PSYC and SOWK prefixes
- Business - Courses with ACTG, BUSN, ECON, FINC, INTB, MGMT and MRKT prefixes
- Communication - Courses with COMM prefixes
- Computational Sciences - Courses with MATH and CSCI prefixes
- Education - Courses with CHLD, EDUC and EDSE prefixes
- Emergency Services - Courses with CJUS, FIRE and EMED prefixes
- Engineering - Courses with EGEE, EGET, EGME, EGEM, EGMT, EGNR and EGRS prefixes
- Fine Art - Courses with ARTS, DANC, FINE, MUSC and THEA prefixes
- Health Assoc - Courses with EMED, HLTH, KINS, NURS, PNUR and RECS prefixes
- Humanities and Philosophy - Courses with HUMN and PHIL prefixes
- Modern Language and Literature - Courses with ENGL, FREN and SPAN prefixes
- Natural Science - Courses with BIOL, CHEM, EVRN, GEOL, NSCI and PHYS prefixes
- Social Sciences - Courses with ECON, GEOG, HIST and POLI prefixes

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Geospatial Technology

Program Description

Completion of this program will provide students with a credential that is in high demand in many different disciplines/industries. The program provides a well-rounded suite of skills including: field-based primary data collection using a variety of survey and global positioning devices; hands-on experience with a variety of geographic information systems including ESRI's suite of tools; the basics of geospatial analysis; and advanced skill development in interpretation of remote sensing data and aerial photographs, spatial statistics, and geospatial programming. Students may pursue this program in the context of their major by completing discipline specific projects in the GIS courses and a required minor.

Program Learning Outcomes:

Students completing Associates Degree in Geospatial Technology will be able to:

Collect primary data in the field using ground-based and remote sensing methods, and compile and integrate secondary data for spatial analysis.

Manage spatial data from various sources utilizing tools, models, and programming code to develop spatial analysis workflows in the investigation of real-world problems.

Utilize state of the art geospatial tools to perform spatial analyses and visualizations that effectively, concisely, and ethically represent geospatial data.

Map natural and human-induced spatial processes and interpret statistically driven cause-and-effect relationships to complete individual and collaborative geospatial projects.

Effectively communicate methodologies and outcomes of data and literature-based geospatial projects through oral, written, and graphic media.

Degree Requirements

Geospatial Technology Core Requirements (28-32 credits):

- [EVRN131](#) Introduction to GIS and GPS 2
- [EVRN225](#) Intermediate GIS 3
- [EVRN325](#) Geospatial Analysis 3
- [EVRN355](#) GIS Programming and Applications 4
- [EVRN365](#) Applied Geospatial Technologies 4
- [EVRN445](#) Remote Sensing and Spatial Statistics 4

- [CSCI105](#) Introduction to Computer Programming 3

Complete one course from the following four:

- [NRES284](#) Principles of Forest Conservation 4
- [EVRN211](#) Field Data Methods 1
- [GEOL308](#) Structural Geology Systems 4
- [RECS365](#) Expedition Management 3

Complete one course from the following four:

- [BIOL280](#) Biostatistics 3
- [BUSN211](#) Business Statistics 3
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC210](#) Statistics 3

Complete one of the following Minors:

- Biology
- Computer Science
- Environmental Policy
- Environmental Science
- General Business
- Geography
- Geology
- Homeland Security
- International Business
- Marketing
- Marine & Freshwater Science
- Political Science
- Public Administration
- Sociology

Other minors approved by student's Geospatial Technology advisor.

Free Electives to total 62 credits

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Health/Fitness Specialist

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 Health/Fitness Instructor. Students develop fitness assessment skills with current technologies employed for anthropometric, cardiovascular and metabolic functioning.

Program Learning Outcomes:

Physical Activity in Health, Wellness, and Quality of Life: Graduates will design individual level programs that promote physical activity, health, and improve quality of life.

Scientific Foundations of Kinesiology: Graduates will critically utilize scholarly material and apply an evidence based solution to a current problem in Kinesiology.

Cultural, Historical, Philosophical Dimensions of Kinesiology: Graduates will critically evaluate and organize scholarly material to present philosophical dimensions of physical activity.

Professional Development in Kinesiology: Graduates will analyze the discipline and sub-disciplines of Kinesiology selecting and describing an area of concentration.

Technical Competency in Kinesiology: Graduates will be able to demonstrate technical competency in the evaluation of exercise and physical activity.

Degree Requirements

Program Requirements (27 Credits)

- [KINS101](#) Foundations in Kinesiology 3
- [KINS105](#) Program Development and Leadership 3
- [KINS140](#) Health and Fitness 3
- [KINS141](#) Introduction to Movement 3
- [KINS262](#) Exercise Physiology 3
- [KINS265](#) Personal Fitness Training 3
- [KINS268](#) Fitness Evaluation I: Func Assessment 3

- [KINS275](#) Nutrition for Sport and Exercise Performance 3
- [KINS295](#) Facility & Program Operations 3

Cognate Requirements (16 Credits)

- [BIOL121](#) Human Anatomy & Physiology I 4
- [BIOL122](#) Human Anatomy & Physiology II 4
- [CHEM108](#) Applied Chemistry 3
- [CHEM109](#) Applied Chemistry Lab 1
- [PSYC101](#) Introduction to Psychology 4

General Electives (10 Credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Core Requirements.

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Internet/Network Specialist

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.

Program Learning Outcomes:

Assist in the analysis of security monitoring, intrusion detection, and troubleshooting techniques and methodologies in a networked operating environment. (*Security and Monitoring*)

Use current hardware and OS technologies and accepted best practices in network design to help solve business and industrial problems. (*Best Practices*)

Communicate technical information relative to problems and solutions to professionals in the field. (*Communication*)

Degree Requirements

Departmental Courses (31 credits)

- [CSCI103](#) Survey of Computer Science 3
- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI106](#) Web Page Design and Development 3
- [CSCI163](#) Troubleshooting and Repair of Personal Computers 3
- [CSCI211](#) Database Applications 3
- [CSCI221](#) Computer Networks 3
- [CSCI248](#) Network Operating Systems I 3
- [CSCI263](#) Managing Computer Security 3
- [CSCI281](#) Intro. to UNIX and Network Programming 3
- [CSCI292](#) Computer Networking Project 4

Support Courses (6 credits)

- [BUSN121](#) Introduction to Business 3
- [BUSN231](#) Business Communications 3

Free Electives (7 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Liberal Arts

Program Description

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

Program Learning Outcomes:

Formal Communication: Students will be able to clearly express ideas relevant to their chosen studies in written and oral presentations.

Use of Evidence: Students will be able to gather and process evidence to answer questions or solve problems within the content of their chosen studies.

Analysis and Synthesis: Students will be able to synthesize evidence, ideas, or works of imagination to answer questions or create an appropriate end-product within their chosen studies.

Professional Responsibility: Students will be able to apply ethical concepts and intercultural awareness when answering questions, solving problems, or completing assigned tasks related to their chosen studies.

Degree Requirements

General Education Requirements: Complete the Bachelor's degree General Education Requirements.

Minor: Complete minor chosen from approved [LSSU minors](#). The department offering your minor will both advise you and conduct your degree audit before graduation.

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Manufacturing Engineering Technology

Program Description

The manufacturing engineering technology associate's degree program prepares you to work with traditional and modern manufacturing equipment and methods in today's high-tech manufacturing environment. Graduates will have theoretical and practical knowledge in traditional manufacturing processes such as turning, milling, foundry and welding along with newer technologies such as robotics, CAD (computer-aided drafting), and CAM (computer-aided manufacturing).

Throughout the program, students acquire cross-disciplinary skills in manufacturing, computer applications, electronics and mechanical technology that are in high demand in industry.

Program Learning Outcomes:

Communicate in a technical environment

Analyze mechanical systems by applying math, science, and/or engineering equations and techniques

Use technical tools to solve engineering problems

Degree Requirements

Departmental Requirements (52 Credits)

Engineering and Engineering Technology Courses (35 credits)

- [EGEE125](#) Digital Fundamentals 4
- [EGNR101](#) Introduction to Engineering 2
- [EGNR265](#) "C" Programming 3
- [EGET110](#) Applied Electricity 4
- [EGET175](#) Applied Electronics 4
- [EGME110](#) Manufacturing Processes I 3
- [EGME141](#) Solid Modeling 3
- [EGME240](#) Assembly Modeling and GD&T 3
- [EGMT225](#) Statics and Strength of Materials 4
- Technical Elective 2
- Electives 3

Mathematics and Science Courses (17 credits)

- [MATH111](#) College Algebra 3
- [MATH131](#) College Trigonometry 3
- [CHEM108](#) Applied Chemistry 3
- [CHEM109](#) Applied Chemistry Lab 1
- [MATH207](#) Principles of Statistical Methods* 3
- [PHYS221](#) Elements of Physics I* 4

Electives (3 credits)**

Technical Electives:

- [EGEE250](#) Microcontroller Fundamentals 4
- [EGME310](#) Vehicle Development and Testing 2
- [EGNR250](#) Cooperative Education 2
- [EGRS215](#) Introduction to Robotics 2

**The math, chemistry and physics courses satisfy the general education and departmental requirements.*

***A social science course is recommended for those students intending to continue for the B.S. degree in Manufacturing Engineering Technology.*

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Natural Resources Technology

Program Description

The natural resources technology program stresses the acquisition of field skills necessary for success in a natural resources agency or organization, as well as the theoretical foundations for these skills. This practical knowledge is enriched by course materials which emphasize communication skills along with the links between society, economics, policy and the natural resource base. This program can be taken as a stand alone two-year program, can constitute the first half of the bachelor of science in parks and recreation management, or it can be used in conjunction with a three-year criminal justice program to prepare a student for a career in conservation law.

All natural resource technology students are strongly encouraged to participate in at least one summer of work or volunteer experience in the natural resource field to gain the professional experience and contacts they will need to begin their careers.

Continuing education to bachelor's degree program — The high degree of competition in the natural resource field makes the pursuit of a bachelor's degree highly desirable. Programs which join well with the NRT degree are the parks and recreation management degree, the fisheries & wildlife degree and the 2+3 criminal justice degree programs or the conservation biology major. These programs lead to careers such as conservation officer, park naturalist, expedition leader, guide or recreation specialist.

Program Learning Outcomes:

Knowledge - NRT Graduates have working knowledge of basic tenets of natural resource management.

Skills - NRT Graduates are able to demonstrate competency in skills necessary to collect natural resource information.

Degree Requirements

Core Requirements:

- [BIOL132](#) General Biology: Organisms 4
- [NRES203](#) Fund of Natural Resources 3
- [EVRN131](#) Introduction to GIS and GPS 2
- [MATH111](#) College Algebra 3
- [NSCI103](#) Environmental Science 3
- [NSCI104](#) Environmental Science Lab 1
- [RECS101](#) Introduction to Recreation & Leisure Service 3

Complete one course from the following two:

- [GEOL121](#) Physical Geology 4
- [NSCI102](#) Great Lakes Region: Geology & Resources 4

Complete one course from the following two:

- [CHEM108](#) Applied Chemistry 3 and [CHEM109](#) Applied Chemistry Lab 4
- [CHEM115](#) General Chemistry I 5

Resource Management - 9 Credits from the following:

- [NRES230](#) Introduction to Soil Science 4
- [NRES284](#) Principles Forest Conservation 4
- [NRES286](#) Principles of Watersheds 3
- [NRES287](#) Conservation Biology 3
- [NRES345](#) Limnology 4
- [EVRN311](#) Environmental Law 3
- [EVRN315](#) Geoenvironmental Systems 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL322](#) Geochemical Systems 4
- [GEOL411](#) Hydrologic Systems 4
- [RECS362](#) Land Management Recreation Purposes 3

Skills/Certification - 9 credits from the following:

- [NRES107](#) Field Biology: Fish & Wildlife Ecology & ID 3
- [BIOL202](#) Plant Science: Identification & Diversity 3
- [BIOL280](#) Biostatistics 3
- [NRES310](#) Ichthyology 3
- [NRES311](#) Mammalogy 3
- [NRES312](#) Ornithology 3
- [EVRN225](#) Intermediate GIS 3
- [EVRN317](#) Environmental Health Applications 3
- [EVRN389](#) Environmental Research Methods 3
- [FIRE102](#) Wildland/Rural Fire Control 3
- [GEOL308](#) Structural Geology Systems 4
- [GEOL315](#) Geoenvironmental Systems 5
- [GEOL380](#) Introduction to Field Geology 3
- [GEOL431](#) Geophysical Systems 5

Complete one course from the following two:

- [EMED188](#) Wilderness First Responder 2
- [EMED189](#) Medical First Responder 3

Free Electives to total 62 credits

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher

is also required in your Major, as well as in your General Education Requirements.

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Paramedic Technology

Program Description

Paramedics are trained to aggressively manage all types of emergency situations by providing scene control, emergency medical care and patient transport to a medical facility or trauma center. The paramedic is an integral part of the health care team, serving as an extension of the hospital emergency department. Paramedics provide a variety of skilled functions in the pre-hospital phase of patient care, often the most critical period of care. The professional paramedic is highly motivated and qualified by education and certification to provide pre-hospital care under the supervision of a physician director of the Emergency Medical Service System.

This associate of applied science degree is designed to allow current fire science and public safety students to earn a minor and obtain their paramedic certification; it also allows students to obtain paramedic certification without committing to a four-year degree. Students can be certified as an Emergency Medical Technician-Basic after the first year with little or no previous training; and as a Paramedic at the end of the second year. Graduates will be eligible to challenge state and/or national licensure examination for both EMT-Basic and paramedic license.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Paramedic Technology (44 credits)

- [EMED190](#) Prehospital Emergency Care I 4
- [EMED191](#) Prehospital Emergency Care II 4
- [EMED211](#) Emergency Pharmacology I 2
- [EMED212](#) Emergency Pharmacology II 2
- [EMED251](#) Advanced Emergency Care I 4
- [EMED252](#) Advanced Emergency Care II 4
- [EMED261](#) Emergency Cardiology I 2
- [EMED262](#) Emergency Cardiology II 2
- [EMED271](#) Care of Special Populations 2
- [EMED284](#) Advanced Skills and Situations I 3
- [EMED285](#) Advanced Skills and Situations II 3
- [EMED286](#) Paramedic Operations 2
- [EMED297](#) Paramedic Clinical I 2
- [EMED298](#) Paramedic Clinical II 2
- [EMED301](#) National Registry Certification Prep 2
- [EMED302](#) Paramedic Field Internship 4

Paramedic Support Courses (13 credits)

- [BIOL121](#) Human Anatomy & Physiology I 4
- [BIOL122](#) Human Anatomy & Physiology II 4
- [HLTH101](#) Introduction to Medical Terminology 2
- [HLTH328](#) Multicultural Approach Health Care 3

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 67 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Pre-Professional Sciences

Program Description

The associate degree in Pre-Professional Sciences prepares students for working in a health-related field such as medical, dental, optometry, podiatry, chiropractic, veterinary, pharmacy, and physician assistant. The degree combines theory and science concepts building on a core of biology and chemistry classes, along with hands-on experiences in our state-of-the-art laboratories. The program is an excellent preparation for students who wish to seek employment as a laboratory technician, consultant, or a science researcher. It is also excellent preparation for students who intend on applying to professional and graduate school and includes coursework that is required and/or highly desired by those programs.

Program Learning Outcomes:

Have practical and theoretical knowledge of biology and chemistry.

Have lab experience and competence in use of basic instrumentation and safe practices.

Research and synthesize the scientific literature for information relevant to a current scientific investigation.

Design and conduct a scientific investigation of a testable hypothesis or methodology using appropriate tools and techniques.

Degree Requirements

Biology & Chemistry (38 credits)

- [BIOL121](#) Human Anatomy & Physiology I 4
- [BIOL122](#) Human Anatomy & Physiology II 4
- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: General Biology: Organisms 4
- [BIOL204](#) General Microbiology 4
- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4

Support Courses (27 credits)

- [ENGL110](#) First-Year Composition I 3

- [ENGL111](#) First-Year Composition II 3
 - [COMM101](#) Fund/Speech Communication 3
 - [MATH111](#) College Algebra 3
 - [MATH207](#) Principles of Statistical Methods 3
 - [PHYS221](#) Principles of Physics I 4
- And**
- [PHYS222](#) Principles of Physics II 4
- Or**
- [PHYS231](#) Applied Phys Engineer/Scientist I 4
- And**
- [PHYS232](#) Applied Phys Engineer/Scientist II 4

Select one Social Science Elective (4 credits)

- [PSYC101](#) Introduction to Psychology 4
- [SOCY101](#) Introduction to Sociology 4

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is required in your Major, and a gpa of 2.00 or higher is required in your General Education Requirements.

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Small Business Administration

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.

Program Learning Outcomes:

Management Functions - Describe the functions of management and apply them appropriately in the workplace.

Communication - Apply oral and written communication skills appropriate for a business environment.

Technology - Effectively utilize technology within the functional areas of business.

Degree Requirements

Departmental Requirements (35 credits)

- [ACTG132](#) Principles of Accounting I 4
- [BUSN101](#) Freshman Seminar 1
- [BUSN121](#) Introduction to Business 3
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3
- **or**
- [BUSN355](#) Business Law II 3
- [BUSN389](#) Entrepreneurship 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC245](#) Principles of Finance 3
- [MGMT280](#) Intro Management Information Systems 3
- [MGMT360](#) Management Concepts & Applications 3
- [MGMT365](#) Human Resource Management 3
- [MRKT281](#) Marketing Principles and Strategy 3

Free Electives to reach 62 credits

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Social Work



Program Description

Workers in this field help people improve their lives, work to alleviate human suffering and promote social justice. In direct service delivery programs you will be working with people who are caught in the grips of social problems and/or struggling with personal adjustment issues. This program provides beginning level skills and knowledge to enable you to help people in these circumstances.

You will learn about the field of social work, current issues in social work, introductory level clinical diagnosis and practice and will acquire skills in one-on-one counseling. Behavioral and social science perspectives on human behavior as well as basic human biology are included in this program. An extensive internship experience in one or more agency settings will provide you with an opportunity to apply, in a supervised setting, knowledge and skills gained in the classroom. The internship may be completed in the local area or outside the local area.

If you are seeking the Associate Degree in Social Work you are strongly encouraged to continue your studies to complete a Bachelor's degree to be successful in today's competitive labor market. You may find the expanded understanding of human behavior provided by the Sociology major or Psychology major to be particularly useful for work in social work programs. Both of these majors also help you develop critical thinking ability, improve writing skills and learn about research through first-hand experience developing and conducting a research project. These abilities are valued by employers in social work and human service agencies.

Although most students combine the Associate Degree in Social Work with a bachelor degree in Psychology or Sociology, some choose other bachelor programs to best prepare them to achieve their particular career goals. Advisors will help you make these decisions.

Program Learning Outcomes:

Students will be able to discuss the field of social work, current issues in social work and basic human biology.

Students will demonstrate skills in one-on-one counseling.

Students will demonstrate mastery of skills necessary to work in social services agencies.

Degree Requirements

Required Courses (21 credits)

- [SOWK110](#) Introduction to Social Work 3
- [PSYC201](#) Communication Skills in Counseling 3
- [SOWK250](#) Social Work Practicum 9
- [SOWK310](#) Clinical Diagnosis and Treatment 3
- [SOWK344](#) Social Welfare Systems 3

Cognates- Required (3 credits)

Select one additional social work course, not taken above, from the following:

- [SOCY301](#) Social Research Methods 3
- [PSYC291](#) Group Counseling 3
- [SOCY338](#) Deviance 3
- [SOWK341](#) Addiction 3
- [PSYC391](#) Family Therapy 3

Other Departments (12-13 credits)

- [BIOL105](#) Function of the Human Body 4
- [PSYC101](#) Introduction to Psychology 4
or
- [SOCY101](#) Introduction to Sociology 4
- [SOCY102](#) Social Problems 4
or
- [PSYC155](#) Lifespan Development 3

Electives (8 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Substance Abuse Prevention and Treatment

Program Description

This program provides the basic knowledge and skills for entry level substance abuse work. Included are social, psychological and biological bases of substance abuse, with special attention to alcoholism, and skills training in counseling. You will also improve your communication skills and expand your knowledge about cultural diversity and psychological and social foundations of human behavior. You will apply knowledge and skills acquired in an extensive internship working under close supervision in a substance abuse program. Placements include residential and out-patient rehabilitation settings, detoxification programs, and prevention programs. You may complete your internship locally or outside the local area.

If you are seeking the Associate Degree in Substance Abuse Prevention and Treatment you are strongly encouraged to continue your studies to complete a Bachelor's degree to be successful in today's competitive labor market. You may find the expanded understanding of human behavior provided by the Psychology major or Sociology major to be particularly useful for work in social work programs. Both of these majors also help you develop critical thinking ability, improve writing skills and learn about research through first-hand experience developing and conducting a research project. These abilities are valued by employers in this field.

Although most students combine the Associate Degree in Social Work with a bachelor degree in Sociology or Psychology, some choose other bachelor programs to best prepare them to achieve their particular career goals. Advisors will help you make these decisions.

Program Learning Outcomes:

Students will demonstrate clear and concise written and oral communication skills in an internship setting.

Students will demonstrate problem solving and critical thinking in substance abuse coursework and counseling settings.

Students will apply job-specific technical skills in their capstone internship.

Degree Requirements

Required Courses (39 credits)

- [BIOL105](#) Function of the Human Body 4
- HMSV204 Fundamentals of Drug Abuse 3

- HMSV250 Human Services Practicum 9
- HMSV292 Alcohol Abuse Prevention & Treatment 3
- [PSYC101](#) Introduction to Psychology 4
- [PSYC201](#) Communication Skills in Counseling 3
- [PSYC259](#) Abnormal Psychology 3
- [SOCY102](#) Social Problems 4
- [SOWK341](#) Addiction 3
- [SOWK344](#) Social Welfare Systems 3

Cognates- Required (6 credits)

- [PSYC291](#) Group Counseling 3
or
- [PSYC391](#) Family Therapy 3
- SOCY225 Native Cultures of North America 3
or
- [SOCY103](#) Cultural Diversity 3

Electives (7 credits)

General Education: All LSSU Associate's degree candidates must complete the LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Technical Accounting

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.

Program Learning Outcomes:

Accounting Principles - Apply generally accepted accounting principles to record and report accounting information relevant to internal and external users.

Communication - Apply oral and written communication skills appropriate for a business environment.

Taxation - Apply the individual income tax laws of the Internal Revenue Code.

Degree Requirements

Departmental Requirements (39-40 credits)

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [ACTG232](#) Intermediate Accounting I 4
- [ACTG233](#) Intermediate Accounting II 4
- [ACTG332](#) Cost Accounting I 4
- [ACTG421](#) Federal Taxation Accounting I 3
- [BUSN101](#) Freshman Seminar 1
- [BUSN231](#) Business Communication 3
- [BUSN350](#) Business Law I 3
- [ECON201](#) Principles of Macroeconomics 3
or
- [ECON202](#) Principles of Microeconomics 3
- [FINC245](#) Principles of Finance 3-4
or
- [FINC341](#) Managerial Finance 3-4
- [MGMT280](#) Introduction Management Information Systems 3

General Education: All LSSU Associate's degree candidates must complete the

LSSU [General Education Requirements](#).

A minimum of 64 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

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Certificate: Cannabis Production

Program Description

The Cannabis Production certificate provides graduates with a foundational skillset necessary to promote employment in the cannabis markets in Michigan, the United States, and beyond.

Program Learning Outcomes:

Graduates will be able to:

Interpret and discuss basic cannabis chemistry.

Explore lab knowledge and skills.

Practice communication skills.

Apply information retrieval skills.

Embrace safe chemical practices.

Explore Cannabis legal and business status.

Degree Requirements

Chemistry Requirements

- [CHEM108](#) Applied Chemistry 3
- [CHEM109](#) Applied Chemistry Lab 1
- [CCHM120](#) Cannabis Chemistry I 1
- [CCHM240](#) Cannabis Plant Sample Prep Chem Analysis 2
- [CCHM245](#) Cannabis Chemistry II 1
- [CCHM250](#) Cannabis Production 1

Business Requirements

- [CBUS122](#) Survey of Cannabis Business 2
- [CBUS360](#) Cannabis Law and Policy 1

A minimum of 12 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Certificate: Culinary Arts Chef

Program Description

The Culinary Arts Chef Certificate prepares individuals to work as professional chefs, sous chefs, and culinary experts in a variety of settings, including restaurants, boutique eateries, and speciality restaurants. With a focus on farm-to-table practices, good nutrition, and quality preparation and presentation, the program provides an exceptional basis for the practicing chef.

Program Learning Outcomes:

Demonstrate a repertoire of the basic principles behind the methods and techniques of preparing food for a commercial food and beverage operation.

Meet the expectations of patrons and regulatory agencies regarding sanitation and safety in a food and beverage operation.

Implement a service plan to ensure assigned goals and expectations are met.

Explain and apply basic management principles of the food and beverage industry.

Demonstrate a repertoire of advanced culinary techniques in the food and beverage industry. This includes yeast breads, desserts, charcuterie, ethnic cuisines, salt water fish and shellfish.

Apply basic front of house concepts and common practices to varying styles of service.

Describe basic bartending techniques and recipes.

Explain the basic requirements of what it takes to give quality hospitality and service.

Explain the principles behind what a nutritionally balanced diet is.

Explain how to apply nutritionally balanced principles to the implementation of any food and beverage menu.

List the common dietary concerns of which chefs and restaurateurs need to be aware.

Apply the skill and knowledge learned in the chef trade to the real time and fast paced environment of the restaurant industry.

Note: [Financial Aid Student Disclosure](#)

Degree Requirements

Department Requirements

- [CULN111](#) Beginning Culinary Skills 8
- [CULN113](#) Kitchen Safety and Sanitation 2
- [CULN115](#) Food and Beverage Management 2
- [CULN121](#) Advanced Culinary Skills 8
- [CULN123](#) Service Operations 2
- [CULN125](#) Nutrition for Chefs 2
- [CULN130](#) Food Service Internship 6

A minimum of 30 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Certificate: E-Marketing

Program Description

The E-Marketing Certificate is designed to master the essential disciplines in digital, social, and mobile marketing, including search engine optimization (SEO), social media, pay-per-click (PPC), conversion optimization, web analytics, content marketing, email and mobile marketing. E-marketing is one of the world's fastest growing disciplines, and this certification will raise students value in the marketplace and prepare students for a career in e-marketing.

The E-Marketing Certificate is a 9 credit program that encompasses a mix of courses relating to Digital, Social, and Mobile marketing.

Program Learning Outcomes:

Decision Making - Research, synthesize, analyze and accurately interpret quantitative and qualitative information to drive effective marketing decision making.

Marketing Technology - Use technology to assist with the synthesis and analysis of data, oral and written communications, and group collaboration.

Communication - Communicate effectively, orally and in writing, marketing observations, findings, research, and recommendations to a large audience.

Degree Requirements

Department Requirements

- [MRKT383](#) Digital Marketing 3
- [MRKT384](#) Social Marketing 3
- [MRKT386](#) Mobile Marketing 3

A minimum of 9 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Certificate: Geographic Information Systems

Program Description

This certificate program will provide students with a credential that is in high demand in many different disciplines/industries. The program provides a well-rounded suite of skills including: primary data collection using a variety of global positioning devices; hands-on experience with a variety of geographic information systems including ESRI's suite of tools; the basics of geospatial analysis; and a choice of advanced skill development. Students may pursue the certificate in the context of their major by completing discipline specific projects in the GIS courses.

Program Learning Outcomes:

Students earning the GIS certificate will be able to:

Collect and process primary geospatial data.

Compile, integrate, and manage spatial data from various sources and develop workflows to complete individual and collaborative geospatial projects.

Utilize state of the art geospatial tools to perform spatial analysis and visualization that effectively, concisely, and ethically represents geospatial data.

Effectively communicate methodologies and outcomes of data and literature-based geospatial projects through oral, written, and graphic media.

Degree Requirements

Department Requirements

- [EVRN131](#) Introduction to GIS and GPS 3
- [EVRN225](#) Intermediate GIS 3
- [EVRN325](#) Geospatial Analysis 3

Complete one course from the following three:

- [EVRN355](#) GIS Programming & Applications 4
- [EVRN365](#) Applied Geospatial Technologies 4
- [EVRN445](#) Remote Sensing and Spatial Statistics 4

A grade of C or better is required in each EVRN course. A minimum of 13 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Certificate: International Business

Program Description

The International Business Certificate is intended to benefit those students seeking to broaden their understanding of international business and foster the development of their global mindset. The certificate program is open to all undergraduate students from any major and/or adult learners with the approval of the program directors.

The International Business Certificate is a 12 credit program that encompasses a mix of courses relating to international business and management, courses designed to broaden a student's functional knowledge and cultural competencies.

Certificate programs can help you gain knowledge in key areas and demonstrate dedication and professional commitment. They can also provide a competitive edge and help you stay current on changes in your industry. This lets you refresh your current skills, deepen your understanding or branch out and discover new areas.

Program Learning Outcomes:

Apply international business knowledge in the areas of management, marketing, economics, and business law.

Analyze how cultural, economic, geographical and political paradigms impact ethical issues in various international business decision processes

Function effectively in situations characterized by cultural diversity. This includes awareness of own cultural intelligence and awareness of the cultural intelligence of others.

Degree Requirements

Department Requirements

- [INTB289](#) Competing in the Global Marketplace 3
- [INTB375](#) International Business Law 3
- [ECON408](#) International Economics 3

Elective: Choose one of the following courses:

- [INTB420](#) International Comparative Management 3
- [INTB486](#) International Marketing 3

A minimum of 12 credits must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Certificate: International Studies

Program Description

This program can be completed in three ways:

- Concurrently with a B.S. or B.A. degree program
- Post-baccalaureate program
- Minor

The purpose of the certificate program is to better prepare a person to work with a more diverse work force. The program is designed to begin preparing students for potential foreign work assignments and improved multicultural relations.

The international studies certificate/minor is an interdisciplinary program. Course substitutions to meet your objectives in international studies may be approved by your academic advisor. As an example, Canadian or American courses might be approved as a substitute for students from countries other than Canada or the U.S. Also, special topics courses listed in the certificate curriculum may change with future development and additional international courses.

The listed courses may be taken throughout a student's baccalaureate program or as a one-year, post graduate certificate. This program features opportunities for students to study in foreign countries and in classes at Lake Superior State University with international faculty.

Program Learning Outcomes:

Students will present and defend international perspectives when discussing concepts in business, economics, politics, history, humanity, sociology, and geography.

Students will explore a world language and demonstrate knowledge of basic vocabulary in that language and basic use of that language.

Degree Requirements

Choose at least one course from six of the following categories to total a minimum of 32 credits.

Category 7, Foreign Language is required.

1. Cultural Diversity

- [SOCY103](#) Cultural Diversity 3

- [BUSN308](#) Managing Cultural Differences 3

2. Business and Economics

- [ECON408](#) International Economics 3
- [INTB486](#) International Marketing 3
- BUSN400 Special Topics:

3. Geography

- [GEOG302](#) Economics Geography 4
- [GEOG306](#) Cultural Geography 3

4. Political Science

- [POLI411](#) U.S. Foreign Policy 3
- [POLI420](#) Politics of the World Economy 4
- [POLI331](#) Comparative Politics of Western Europe and Russia 4
- [POLI334](#) Middle East Politics 3

5. History

- [HIST310](#) Russia 4
- [HIST316](#) Europe in the 20th Century 4
- [HIST361](#) Latin America 4
- [HIST371](#) Far East Civilization 4
- HIST442 Diplomatic History of the U.S. 4

6. Humanities

- [HUMN261](#) World Literature I 3
- [HUMN262](#) World Literature II 3
- FREN353 Business French I 3
- FREN354 Business French II 3
- FREN360 French Cultural Perspectives 3-4
- [JAPN105](#) Intensive Introductory Japanese Language I 10
- [JAPN106](#) Intensive Introductory Japanese Language II 10
- [JAPN201](#) Culture and Society of Japan I 3
- [JAPN202](#) Culture and Society of Japan II 3
- [JAPN301](#) Japanese Art and Culture I 4
- [JAPN302](#) Japanese Art and Culture II 4

7. Foreign Language

- A minimum of two semesters of a modern foreign language 8

Special Topics: Study in a foreign country may be used for up to eight credits of the Humanities and/or Foreign Language credits.

A minimum of 32 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Certificate: MCOLES

Program Description

A certificate program addressing the skills and competencies needed for certification through the Michigan Commission on Law Enforcement Standards (MCOLES). Prerequisite: Admission to MCOLES academy, an earned associate degree or higher in any field or honorable discharge from any branch of U. S. Military Service, Michigan Residency.

MCOLES Academy Admissions Requirements:

- Age 21 minimum
- U.S. Citizen
- Resident of Michigan
- Valid MI Drivers Licenses
- Complete and pass Reading and Writing test as prescribed by MCOLES (National Standardized screening test)
- Meet MCOLES physical fitness entrance standards within 120 prior to start
- Meet MCOLES health and vision minimum standards
- Successfully pass the entrance interview and background screen
- No Felony convictions
- Honorable discharge from Military with 2 years full-time duty service as a military police officer within 2 years of discharge with a minimum placement at the B-Band on the MCOLES reading and writing pre-screening test or meet the MCOLES minimum education standard of Associates degree (62 semester credits minimum)

Students apply for admission in the fall for the academy sequence that runs from January-June.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Degree Requirements

Department Requirements:

- [CJUS197](#) Physical Fitness Public Safety 1
- [CJUS201](#) Firearms Training 1
- [CJUS409](#) Procedural Criminal Law 3
- [CJUS411](#) Police Operations 5
- [CJUS444](#) Criminalistics 4
- [CJUS450](#) Skills Academy 2
- [EMED189](#) Medical First Responder 3

A minimum of 19 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Certificate: Paramedic Training

Program Description

This program provides advanced life support skills to assess and treat the sick and injured. It will allow graduates to qualify to write the state licensing examination for paramedic and possess advanced life support skills to assess and treat the sick and injured.

Admission requirements are:

- 18 years of age by September of year entering program.
- evidence of high school diploma or equivalent.
- evidence of valid, current Michigan driver's license.
- evidence of valid, current Michigan EMT-basic certification or National Registry EMT certification.
- evidence of current CPR or CPR instructor certification.
- evidence of completion of ENGL110 First-Year Composition I, three credits.

Program Learning Outcomes:

FORMAL COMMUNICATION (FC): Graduates of the Criminal Justice and Emergency Responders Programs will be able to communicate effectively at a professional level, both orally and in writing.

USE OF EVIDENCE (UE): Graduates of the Criminal Justice and Emergency Responders Programs will complete a Senior research project that demonstrates professional level inquiry, analysis, and presentation of a relevant issue in the field of criminal justice.

ANALYSIS AND SYNTHESIS (AS): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional level critical thinking and problem solving skills.

PROFESSIONAL RESPONSIBILITY (PR): Graduates of the Criminal Justice and Emergency Responders programs will demonstrate professional responsibility in teamwork, civic engagement, intercultural knowledge and competence, ethical reasoning, and practical applications of those responsibilities while interning in a professional setting, student projects, and group work.

Note: [Financial Aid Student Disclosure](#)

Degree Requirements

Department Requirements

- [EMED211](#) Emergency Pharmacology I 2
- [EMED212](#) Emergency Pharmacology II 2
- [EMED251](#) Advanced Emergency Care I 4
- [EMED252](#) Advanced Emergency Care II 4
- [EMED261](#) Advanced Cardiology I 2
- [EMED262](#) Advanced Cardiology II 2
- [EMED271](#) Prehospital Emergency Pediatrics 2
- [EMED284](#) Advanced Skills and Situations I 3
- [EMED285](#) Advanced Skills and Situations II 3
- [EMED286](#) Paramedic Operations 2
- [EMED297](#) Paramedic Clinical I 2
- [EMED298](#) Paramedic Clinical II 2
- [EMED301](#) National Registry Certification Prep 2
- [EMED302](#) Paramedic Field Internship 4

Support Courses

- [BIOL121](#) Anatomy and Physiology I 4
- [BIOL122](#) Anatomy and Physiology II 4

A minimum of 44 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher.

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Minor: Accounting — Finance



Degree Requirements

Total Credits Required: 24

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [ACTG232](#) Intermediate Accounting I 4
- [FINC341](#) Managerial Finance 4

Choose One From:

- [FINC443](#) Insurance 4
- [FINC446](#) Financial Analysis and Policy 4
- [FINC448](#) Investment Strategy 4

ACTG or FINC Electives 4

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Minor: Aquaculture

Degree Requirements

Total Credits Required: 20

Required Courses:

- [MRKT281](#) Marketing Principles and Strategy 3
- [NRES310](#) Ichthyology 3
- [NRES345](#) Limnology 4
- [NRES372](#) Freshwater Fish Culture 3
- [NRES389](#) Internship in (Aquaculture) 3

Select one of following:

- [ACTG132](#) Principles of Accounting I 4
- [ECON202](#) Principles of Microeconomics 3

Select one of following:

- [BIOL389](#) Internship in (Fish Health) 3
- [NRES450](#) Apprenticeship in (Fish Culture) 1

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Minor: Aquaponic Production

Degree Requirements

Total Credits Required: 34

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL204](#) General Microbiology 4
- [BIOL232](#) Introduction to Aquaponics 4
- [BIOL235](#) Introduction to Protected Horticulture 3
- [BIOL315](#) Plant Sciences: Structure and Function 4
- [CHEM115](#) General Chemistry I 5
- [NSCI103](#) Environmental Science 3

Complete one course from the following two:

- [BIOL389](#) Internship in Aquaponics 3
- [BIOL490](#) Independent Study in Aquaponics 3

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Minor: Biology

Degree Requirements

Total Credits Required: 21

- [BIOL131](#) General Biology: Cells 4
- [BIOL132](#) General Biology: Organisms 4
- [BIOL204](#) General Microbiology 4
- [BIOL337](#) General Ecology 3
- BIOL Electives 6 (3 credits at least 200 level or higher and 3 credits at least 300 level or higher)

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Minor: Biochemistry

Degree Requirements

Total Credits Required: 25

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM351](#) Introductory Biochemistry 4

And complete one of the following:

- [BIOL421](#) Advanced Cell & Molecular Biology 4
- [CHEM353](#) Introductory Toxicology 3
- [CHEM452](#) Advanced Biochemical & Molecular Tech 4

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Minor: Chemistry

Degree Requirements

Total Credits Required: 24

- [CHEM115](#) General Chemistry I 5
- [CHEM116](#) General Chemistry II 5
- [CHEM225](#) Organic Chemistry I 4
- [CHEM231](#) Quantitative Analysis 4

At least 6 credits from the following choices:

- [CHEM310](#) Applied Spectroscopy 4
- [CHEM326](#) Organic Chemistry II 4
- [CHEM332](#) Instrumental Analysis 4
- [CHEM341](#) Environmental Chemistry 4
- [CHEM351](#) Introductory Biochemistry 4
- [CHEM361](#) Physical Chemistry 4
- [CHEM362](#) Physical Chemistry II 3
- [CHEM445](#) Forensic Science 4
- [CHEM461](#) Advanced Inorganic Chemistry 3

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Minor: Coaching

Degree Requirements

Total Credits Required: 24

- [KINS105](#) Program Development and Leadership 3
- [KINS262](#) Exercise Physiology 3
- [KINS270](#) Sports Management 3
- [KINS275](#) Nutrition Sport Exercise Performance 3
- [KINS344](#) Kinesiology 3
- [KINS428](#) Psychology Exercise/Rehabilitation 3
- [KINS450](#) Philosophy Human Performance/Leisure 3
- [KINS482](#) Administration of Recreation Services 3

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Minor: Communication

Degree Requirements

Total Credits Required: 21

- [COMM201](#) Small Group Communication 3

or

- [COMM225](#) Interpersonal Communication 3
- [COMM211](#) Advanced Public Speaking 3

or

- [COMM210](#) Business & Professional Speaking 3
- [COMM302](#) Argumentation & Advocacy 3
- [COMM307](#) Classical/Contemporary Rhetoric 3

or

- ENGL321 Rhetoric & Composition Theory 3
- [COMM308](#) Communication Theory 3
- [COMM325](#) Organizational Communication 3
- [COMM416](#) Communication in Leadership 3

Students must complete 21 semester hours of credit in addition to basic requirements of composition and speech ([COMM101](#)).

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Minor: Computer Science

Degree Requirements

Total Credits Required: 23-24

- [CSCI105](#) Intro. to Computer Programming 3
- [CSCI121](#) Principles of Programming 4
- [CSCI201](#) Data Structures and Algorithms 4
- [CSCI211](#) Database Applications 3
- [CSCI221](#) Computer Networks 3
- [CSCI415](#) Computer Organization and Architecture 3
- Plus 3 or 4 additional CSCI credits at the 300- or 400-level 3-4

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Minor: Corrections

Degree Requirements

Total Credits Required: 21

- [CJUS110](#) Introduction to Corrections 3
- [CJUS140](#) Criminological Theory and Correctional Client Growth 3
- [CJUS220](#) Institutional Corrections 3
- [CJUS240](#) Community Based Corrections 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS321](#) Ethical Issues in Public Safety
- [CJUS355](#) Juvenile Justice 3

The Corrections minor cannot be applied to the Associate degree in Criminal Justice Corrections.

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Minor: Counseling

Degree Requirements

Total Credits Required: 21

- [PSYC155](#) Lifespan Development 3
- [PSYC201](#) Communication Skills in Counseling 3
- [PSYC396](#) Tests and Measurements* 3
- [SOWK344](#) Social Welfare Systems 3
- [SOWK250](#) Human Services Practicum 3
- [BIOL105](#) Function of the Human Body** 4
- [PSYC259](#) Abnormal Psychology*** 3
- or
- [SOCY338](#) Deviance*** 3
- [PSYC291](#) Group Counseling 3
- or
- [PSYC391](#) Family Therapy 3
- [PSYC240](#) Behavioral Management 3
- or
- [PSYC385](#) Health Psychology 3

*Note: [PSYC396](#) has a prerequisite of one of these statistics courses: [MATH207](#), [PSYC210](#) or [SOCY302](#).

**May count toward general education.

***May count toward SOCY/PSYC minor.

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Minor: Creative Writing

Degree Requirements

Total Credits Required: 24

- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL223](#) Creative Writing II 3
- [ENGL231](#) American Literature I 3
and
- [ENGL232](#) American Literature II 3
or
- [ENGL233](#) English Literature I 3
and
- [ENGL234](#) English Literature II 3
- [ENGL409](#) Adv. Creative Writing Workshop 3

Select two from the following:

- [ENGL301](#) Creative Prose Writing 3
- [ENGL302](#) Poetry Writing 3
- [ENGL303](#) Performance Writing 3

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Minor: Early Childhood Education - Teaching

Degree Requirements

To be eligible for this minor, students must be in an Elementary Education program or hold an Elementary Teaching Certificate.

Total Credits Required: 28

- [CHLD150](#) Observation and Assessment 4
- [CHLD210](#) Infants and Toddlers 4
- [CHLD225](#) Emergent Literacy 3
- [CHLD245](#) Early Childhood Curriculum 3
- [CHLD270](#) Administration of Early Childhood Programs 2
- [CHLD310](#) Inclusion of Young Children with Special Needs in Early Childhood Settings 3
- [CHLD440](#) Family and Community Partnerships 3
- [CHLD480](#) Directed Teaching Seminar 1
- [CHLD492](#) Directed Teaching: Early Childhood 5

Students must earn a grade of C or higher in each course. A minimum gpa of 2.700 or higher is required for this minor.

Successful completion of this minor and a passing score on the Michigan Test for Teacher Certification Early Childhood Education subject test meet the requirements for the Early Childhood (General and Special) Education endorsement (ZS) on a Michigan elementary teaching certificate.

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Minor: Economics - Finance

Degree Requirements

Total Credits Required: 28

- [ACTG132](#) Principles of Accounting I 4
- [ACTG133](#) Principles of Accounting II 4
- [ECON201](#) Prin. of Macroeconomics 3
- [ECON202](#) Prin. of Microeconomics 3
- [FINC341](#) Managerial Finance 4
- ECON or FINC Electives 10*

*At least 3 credits must be from 300/400 level ECON or FINC courses

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Minor: Electrical Engineering

Degree Requirements

Total Credits Required: 26

- [EGNR101](#) Introduction to Engineering 2
or
- [CSCI105](#) Introduction to Computer Programming 3
- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGEE125](#) Digital Fundamentals* 4
- [EGEE210](#) Circuit Analysis* 4
- [EGEE250](#) Microcontroller Fundamentals 4
- [MATH152](#) Calculus II 4

Elective Courses (6 credits minimum):

- EGEE300 or higher or EGET300 or higher 6

***C or better grade**

****At least one elective course must not count toward any other major or minor.**

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Minor: English Teaching - Elementary Language Arts

Degree Requirements

Total Credits Required: 24

English Requirements:

- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL222](#) English Grammar 3
- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- [ENGL320](#) Responding to Writing 3
- [ENGL335](#) Children's Literature 3
- [THEA112](#) Acting for Beginners 3

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Minor: Environmental Policy

Degree Requirements

Total Credits Required: 21-23

Requirements:

- BIOL304 The Human Environment 3
- [EVRN311](#) Environmental Law 3
- [NSCI103](#) Environmental Science 3
- [POLI342](#) International Environmental Policy 3

Select one of the following:

- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3

Select one of the following:

- [POLI110](#) Introduction to American Government & Politics 3
- [POLI160](#) Introduction to Canadian Government & Politics 3

Select one of the following:

- [ECON307](#) Environmental Economics 3
- [EVRN315](#) Human Impacts on Environment 4
- [POLI301](#) Policy Analysis and Evaluation 4
- [POLI413](#) The International Legal Order 4
- [POLI420](#) Politics of the World Economy 4

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Minor: Environmental Science

Degree Requirements

Total Credits Required: 22

- [BIOL131](#) General Biology: Cells 4
or
- [BIOL132](#) General Biology: Organisms 4
- [CHEM115](#) General Chemistry I 5
- [NSCI103](#) Environmental Science 3

One of the Following:

- [NSCI102](#) Introduction to Geology 4
- [GEOL121](#) Physical Geology 4
- [NSCI116](#) Introduction to Oceanography 4

At least 3 additional credits of EVRN course(s) at the 300 level or higher

One of the following (minimum 3 credits):

- [NRES304](#) The Human Environment 4
- [BIOL337](#) General Ecology 3
- [NRES345](#) Limnology 3
- [BIOL420](#) Evolutionary Analysis 3
- [NRES470](#) Restoration Ecology 3
- [NRES475](#) Aquatic Entomology 3
- [ECON307](#) Environmental Economics 3
- [GEOG306](#) Cultural Geography 4
- [POLI342](#) International Environmental Policy 3
- [GEOL334](#) Hydrologic Systems: Sur/Ground Water 4
- Any EVRN course at the 300 level or higher

A minimum gpa of 2.00 or higher is required for this minor.

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Minor: General Business

Degree Requirements

Total Credits Required: 22-23

Required Courses:

- [ACTG132](#) Principles of Accounting I 4
- [MGMT360](#) Management Concepts & Apps. 3
- [MRKT281](#) Marketing Principles & Strategy 3
- [ECON202](#) Principles of Microeconomics 3
- [FINC245](#) Principles of Finance 3
- **or**
- [FINC341](#) Managerial Finance 4
- [BUSN231](#) Business Communications 3
- [BUSN350](#) Business Law I 3

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Minor: Geographic Information Science

Degree Requirements

Total Credits Required: 20

GIS Core Requirements:

- [EVRN131](#) Introduction to GIS and GPS 3
- [EVRN225](#) Intermediate GIS 3
- [EVRN325](#) Geospatial Analysis 3

Select two from the following:

- [EVRN355](#) GIS Programming and Applications 4
- [EVRN365](#) Applied Geospatial Technologies 4
- [EVRN445](#) Remote Sensing & Spatial Statistics 4

Select two from the following:

- [EVRN211](#) Field Data Methods 1
- [NRES284](#) Principles of Forest Conservation 4
- [GEOL308](#) Structural Geology Systems 4
- [RECS365](#) Expedition Management 3

Select one of the following:

- [CSCI105](#) Introduction to Computer Programming 3
- [BIOL280](#) Biostatistics 3
- [BUSN211](#) Business Statistics 3
- [MATH207](#) Principles of Statistical Methods 3
- [PSYC210](#) Statistics

Minimum grade of C (2.00) in every EVRN course.

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Minor: Geography

Degree Requirements

Total Credits Required: 20

Geography (9-11 credits)

- [GEOG106](#) Physical Geography: Landforms 4
or
- [GEOL121](#) Physical and Historical Geology I 4
- [GEOG108](#) Physical Geography: Meteorology and Climatology 4
- [GEOG302](#) Economic Geography 4
- [GEOG306](#) Cultural Geography 3
- [GEOG492](#) Individualized Studies in Geography 2-4

Geography electives to total 20 credits:

- [GEOG201](#) World Regional Geography 4
- [GEOG321](#) Geography of Europe and Great Britain 4
- [GEOG322](#) Geography of South America, Central America and the Caribbean Region 4
- [GEOG323](#) Geography of East and Southeast Asia 4
- [GEOG325](#) Regional Geography of North America 4
- [GEOG360](#) Historical Geography of Eastern North America 4

It is strongly suggested that students pursuing professional careers complete [MATH207](#) Principles of Statistical Methods.

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Minor: Geology

Degree Requirements

Total Required Courses: 20

- [GEOL121](#) Physical Geology 4
- [GEOL122](#) Historical Geology 4
- [GEOL223](#) Earth Materials 4
- [GEOL308](#) Structural Geology Systems 4

A minimum of 4 additional GEOL credits at 3XX or 4XX Level.

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Minor: Gerontology

Degree Requirements

Total Credits Required: 23

Required Courses:

- [BIOL105](#) Function of the Human Body 4
or
- [BIOL122](#) Human Anatomy and Physiology II 4
- [PSYC155](#) Lifespan Development 3
- RECS105 Program Development & Leadership 3
- [RECS295](#) Practicum 1
- RECS370 Recreation for the Elderly 3
- [HLTH352](#) Health Issues of Aging Populations 3
- [SOCY326](#) The Sociology of Aging and the Aged 3
- [SOCY327](#) The Sociology of Dying and Death 3

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Minor: History

Degree Requirements

Total Credits Required: 21

- [HIST101](#) History of World Civilization I 4
and
- [HIST102](#) History of World Civilization II 4
or
- [HIST131](#) United States History I 4
and
- [HIST132](#) United States History II 4
- [HIST296](#) Historical Methods 2
- HIST 200 Level History Elective 3
- HIST 300/400 Level History Elective 8

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Minor: Homeland Security

Degree Requirements

Total Credits Required: 21

Required Courses:

- [CJUS101](#) Introduction to Criminal Justice 3
- [CJUS103](#) Introduction to Terrorism and Homeland Security 3
- [CJUS203](#) Cyberterrorism 3
- [CJUS303](#) Critical Infrastructure Protection 3

Select two courses from:

- [CJUS204](#) Domestic and International Terrorism 3
- [CJUS325](#) Homeland Security and Emergency Services 3
- [CJUS384](#) International and Comparative Criminal Justice Systems 3

Select one course from:

- [CJUS306](#) Security Systems 3
- [CJUS313](#) Crisis Intervention and Deviant Behavior 3
- [CJUS444](#) Criminalistics 4
- [FIRE312](#) Hazardous Materials Management 3

The Homeland Security Minor cannot be applied to the Associate Degree Criminal Justice Homeland Security, the Bachelor's degree in Criminal Justice with a Homeland Security Concentration or equivalent.

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Minor: Human Nutrition

Degree Requirements

Total Credits Required: 23

- [BIOL122](#) Anatomy and Physiology II 4
- CHEM105 Life Chemistry II 4
- [HLTH104](#) Nutrition for Early Childhood 3
- [HLTH208](#) Principles of Human Nutrition 3
- EXER275 Nutrition for Sport and Exercise Performance 2
- [HLTH330](#) Applied Nutrition 2
- [HLTH452](#) Contemporary Issues in Nutrition 3
- [HLTH490](#) Independent Study in Health 2
- or**
- EXER496 Selected Research Topics 2

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Minor: Human Resource Management

Degree Requirements

Total Credits Required: 31

- [BUSN350](#) Business Law I 3
- [ECON201](#) Principles of Macroeconomics 3
- [ECON202](#) Principles of Microeconomics 3
- [MGMT360](#) Management Concepts & Apps. 3
- [MGMT365](#) Human Resource Management 3
- [MGMT451](#) Labor Law 4
- [MGMT464](#) Organizational Behavior 3
- [MGMT469](#) Collective Bargaining 3
- [PSYC201](#) Communication Skills in Counseling 3
- [PSYC396](#) Tests and Measurements 3

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Minor: Human Services Administration

Degree Requirements

Total Credits Required: 22

- [SOWK344](#) Social Welfare Systems 3
- [MGMT365](#) Human Resource Management 3
- DATA Elective 3
- [POLI201](#) Intro. to Public Administration 3
- or**
- PSYC228 Organizational Behavior 3
- HMSV250 Human Services Practicum 3
- ACTG230 Fundamentals of Accounting 4
- [MRKT281](#) Marketing Principles and Strategy 3

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Minor: Humanities

Degree Requirements

Total Credits Required: 24

Required Courses:

- [HUMN251](#) Humanities I 4
- [HUMN252](#) Humanities II 4

Select at least 10 credits from Group A:

[HUMN203](#) Survey of Chinese Culture 3
[HUMN240](#) Native Art and Culture 3
[HUMN255](#) World Mythology 4
[HUMN256](#) Intro Film: Images of Culture 3
[HUMN261](#) World Literature I 3
[HUMN262](#) World Literature II 3
[PHIL204](#) Introduction to Philosophy 3
[PHIL210](#) Existentialism 3
[PHIL215](#) Ethical Theory and Practice 3
[PHIL250](#) Philosophy of Religion 3
[PHIL302](#) Ancient Western Philosophy 3
[PHIL305](#) Modern Contemporary Philosophy 3

Select at least 6 credits from Group B:

[ARTS109](#) Principles of Design and Color 3
[ARTS110](#) Fundamentals of Drawing 3
[ARTS250](#) Art History & Appreciation I 4
[ARTS251](#) Art History & Appreciation II 4
[SPAN261](#) Second Year Spanish I 3
[SPAN262](#) Second Year Spanish II 3
[FREN251](#) Second Year French I 4
[FREN252](#) Second Year French II 4
[THEA251](#) History of Drama and Theatre I 3
[THEA252](#) History of Drama and Theatre II 3
[DANC305](#) Dance History 3
[ENGL236](#) Literature and Culture 3
[MUSC220](#) History Appreciation Music I 4
[MUSC221](#) History Appreciation Music II 4

At least 6 of the 24 credits need to be at the 300 level.

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Minor: Institutional Loss Control

Degree Requirements

Total Credits Required: 21

- [CJUS212](#) Loss Control 3
- [CJUS341](#) Fire Cause & Arson Investigation 3
- [FIRE101](#) Introduction to Fire Science 3
- [FIRE111](#) Hazardous Materials 3
- [FIRE206](#) Fire Protection Systems Equipment and Industrial Fire Prevention 3
- [FIRE301](#) Code Enforcement Inspection and Fire Prevention 3

Select one of the following two:

- [CJUS303](#) Critical Infrastructure Protection 3
- or**
- [CJUS306](#) Security Systems 3

This minor may not be used for fire science majors.

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Minor: International Business

Degree Requirements

Total Credits Required: 21

Required Courses:

- [INTB375](#) International Business Law 3
- INTB389 Competing in the Global Marketplace 3
- [INTB420](#) Comparative International Management 3
- [INTB486](#) International Marketing 3
- [MGMT360](#) Management Concepts 3
- [MRKT281](#) Principles of Marketing 3
- Approved International Experience Elective (3)

Select one of the following courses for the International Experience Elective:

- [BUSN399](#) Internship in Discipline 3
- [INTD310](#) Foreign Study 3
- [INTD410](#) Internship in Department 3

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Minor: International Studies

Degree Requirements

Total Credits Required: 32

Choose at least one course from six of the following categories to total a minimum of 32 credits.

Category 7, foreign language, is required.

1. Cultural Diversity

- [SOCY103](#) Cultural Diversity 3
- [BUSN308](#) Managing Cultural Differences 3

2. Business and Economics

- [ECON408](#) International Economics 3
- [INTB486](#) International Marketing 3
- [BUSN400](#) Special Topics 3

3. Geography

- [GEOG302](#) Economics Geography 4
- [GEOG306](#) Cultural Geography 3

4. Political Science

- [POLI411](#) U.S. Foreign Policy 3
- [POLI420](#) Politics of the World Economy 4
- [POLI331](#) Comparative Politics of Western Europe and Russia 4
- [POLI334](#) Middle East Politics 3

5. History

- [HIST310](#) Russia: From Under-developed State to Superpower 4
- [HIST316](#) Europe in the 20th Century 4
- [HIST361](#) Latin America 4
- [HIST371](#) Far East Civilization: 1850 to Present 4
- [HIST442](#) Diplomatic History of the U.S. I 4

6. Humanities

- [HUMN261](#) World Literature I 3
- [HUMN262](#) World Literature II 3
- FREN353 Business French I 3
- FREN354 Business French II 3
- FREN360 French Cultural Perspectives 3-4
- [JAPN105](#) Intensive Introductory Japanese Language I 10
- [JAPN106](#) Intensive Introductory Japanese Language II 10
- [JAPN201](#) Culture and Society of Japan I 3
- [JAPN202](#) Culture and Society of Japan II 3
- [JAPN301](#) Japanese Art and Culture I 4
- [JAPN302](#) Japanese Art and Culture II 4

7. Foreign Language

- A minimum of two semesters of a modern foreign language 8

Special Topics — study in a foreign country may be used for up to eight credits of the humanities and foreign language credits.

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Minor: Kinesiology

Degree Requirements

Total Credits Required: 24

- [KINS101](#) Foundations in Kinesiology 3
- [KINS140](#) Health and Fitness 3
- [KINS265](#) Personal Fitness Training 3
- [KINS275](#) Nutrition Sport Exercise Performance 3
- [KINS332](#) Health Promotions 3
- [KINS428](#) Psychology Exercise/Rehabilitation 3
- [KINS434](#) Neurological Basics Motor Learning 3
- [KINS444](#) Exercise Prescription 3

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Minor: Law Enforcement

Degree Requirements

Total Credits Required: 21

Required Courses:

- [CJUS101](#) Intro. to Criminal Justice 3
- [CJUS102](#) Police Process 3

Minimum of 15 credits from (at least 6 credits must be at 300/400 level):

- [CJUS203](#) Cyberterrorism 3
- [CJUS206](#) Law Enforcement/Loss Control Internship 3
- [CJUS243](#) Investigation 3
- [CJUS313](#) Crisis Intervention and Deviant Behavior 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS321](#) Ethical Issues in Public Safety 3
- [CJUS409](#) Procedural Criminal Law 3
- [CJUS444](#) Criminalistics 4
- CJUS Elective 200 Level or higher (up to 6 credits)

The Law Enforcement Minor cannot be applied to the Associate Degree Criminal Justice Law enforcement, the Bachelor's degree in Criminal Justice with a Law Enforcement concentration, or equivalent.

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Minor: Literature

Degree Requirements

Total Credits Required: 21

Methods, Genre, and Theory (6 credits)

- [ENGL180](#) Introduction to Literary Studies 3
- [ENGL380](#) History of Literary Criticism 3

Literature (12 credits)

Choose four courses not required for major with at least one course at the 400 level. The four courses may come from any category:

American and British Literatures

- [ENGL231](#) American Literature I 3
- [ENGL232](#) American Literature II 3
- [ENGL233](#) English Literature I 3
- [ENGL234](#) English Literature II 3

Diversity and Culture

- [ENGL235](#) Survey of Native Literature of North America 3
- [ENGL236](#) Literature and Culture 3

Textual Criticism

- [ENGL345](#) Studies in Classic Texts 3
- [ENGL435](#) Studies in Visual Texts 3

Advanced Studies

- [ENGL440](#) Advanced Studies in British Literature 3
- [ENGL442](#) Advanced Studies in American Literature 3

Professional Skills (3 credits - Choose one course not required for major)

- [ENGL221](#) Introduction to Creative Writing 3
- [ENGL222](#) English Grammar 3
- [ENGL320](#) Responding to Writing 3

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Minor: Marine and Freshwater Sciences

Degree Requirements

Total Credits Required: 24-26

- [NSCI116](#) Introduction to Oceanography 4
- BIOL286 Principles of Watershed 3
- BIOL310 Ichthyology 3
- BIOL345 Limnology 4
- [BIOL389](#) Internship in Biology 3
- [BIOL450](#) Lab Apprentice* 1

Select two of the following (must represent different disciplines):

- BIOL289 Aquatic Research Sampling Methods* 3
- [BIOL302](#) Invertebrate Zoology 3
- BIOL333 Fish Ecology 3
- BIOL475 Aquatic Entomology 3
- [EVRN341](#) Environmental Chemistry I 4
- [GEOL121](#) Physical & Historical Geology I 4
- [GEOL411](#) Hydrological Systems 4

*Cross-listed as EVRN

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Minor: Marketing

Degree Requirements

Total Credits Required: 21

- [ECON202](#) Principles of Microeconomics 3
- [INTB486](#) International Marketing 3
- [MRKT281](#) Marketing Principles & Strategy 3
- [MRKT283](#) Personal Selling 3
- [MRKT381](#) Consumer Behavior 3
- MRKT Electives (300 level or above) 6

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Minor: Mathematics

Degree Requirements

Total Credits Required: 21

Required Courses:

- [MATH151](#) Calculus I 4
- [MATH152](#) Calculus II 4
- [MATH207](#) Principles of Statistical Methods 3
or
- [MATH308](#) Probability and Mathematical Statistics 3

Plus additional mathematics courses numbered [MATH215](#) or higher for a minimum of 21 credits with a minimum of 6 credits at the 300/400 level.

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Minor: Mathematics - Elementary Teaching

Degree Requirements

Total Credits Required: 26

Courses Required:

- [MATH103](#) Number Systems and Problem Solving 4
- [MATH104](#) Geometry & Measurement 4
- [MATH112](#) Calculus for Business & Life Sciences 4
- **or**
- [MATH151](#) Calculus I 4
- [MATH207](#) Principles of Statistical Methods 3
- [MATH215](#) Fundamental Concepts of Mathematics 3
- [MATH321](#) History of Mathematics 3
- [EDUC420](#) Math Methods for Elementary Teachers 2
- MATH300/400 Elective 3

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Minor: Mechanical Engineering

Degree Requirements

Total Credits Required: 21

- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGEM220](#) Statics 3
- [EGME110](#) Manufacturing Processes 3
- [EGME141](#) Solid Modeling 3
- [EGME225](#) Mechanics of Materials 3
- EGME or EGEM listed courses at the 300/400 level 7

Not for mechanical engineering students.

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Minor: Natural Resources

Degree Requirements

Total Credits Required: 25 - 27

Required Courses (16 credits):

- [BIOL132](#) General Biology: Organisms 4
- [EVRN311](#) Environmental Law 3
- [NRES107](#) Field Biology Fish Wildlife Eco/Iden 3
- [NRES203](#) Fund of Natural Resources 3
- [NSCI103](#) Environmental Science 3

Two of the following (6 - 8 credits):

- [NRES230](#) Introduction to Soil Science 4
- [NRES240](#) Natural History of the Vertebrate 3
- [NRES250](#) Quantitative Biology 3
- [NRES284](#) Principles Forest Conservation 4
- [NRES286](#) Principles of Watersheds 3
- [NRES287](#) Conservation Biology 3

NRES Elective- One NRES course at the 300-400 Level (3-4 credits)

(Note: [NRES199](#), [NRES299](#), [NRES398](#), [NRES399](#), [NRES495](#), [NRES497](#), [NRES499](#) can not be used to fulfill the 300-400 level elective requirement.)

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Minor: Outdoor Leader

Degree Requirements

Total Credits Required: 23

- [RECS101](#) Introduction to Recreation and Leisure Services 3
- [RECS262](#) Outdoor Recreation 3
- [RECS360](#) Facilitation and Interpretation 3
- [RECS365](#) Expedition Management 3
- [RECS390](#) Recreation Leader Apprenticeship 1
- [RECS390](#) Recreation Leader Apprenticeship 1
- [EMED188](#) Wilderness First Responder 2
- [EVRN131](#) Introduction to GIS and GPS 3

Complete four from the following five courses:

- [RECA106](#) Backpacking 1
- [RECA107](#) Canoe Techniques 1
- [RECA109](#) Rock Climbing and Rappelling 1
- [RECA119](#) Cross-Country Skiing 1
- [RECA120](#) Downhill Skiing and Snowboarding 1

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Minor: Paramedic Technology

Degree Requirements

Current licensure as a Michigan Basic EMT and all course prerequisites must be met by the student prior to beginning this program.

Total Credits Required: 44

Paramedic Technology (36 credits)

- [EMED211](#) Emergency Pharmacology I 2
- [EMED212](#) Emergency Pharmacology II 2
- [EMED251](#) Advanced Emergency Care I 4
- [EMED252](#) Advanced Emergency Care II 4
- [EMED261](#) Emergency Cardiology I 2
- [EMED262](#) Emergency Cardiology II 2
- [EMED271](#) Prehospital Emergency Pediatrics 2
- [EMED284](#) Advanced Skills and Situations I 3
- [EMED285](#) Advanced Skills and Situations II 3
- [EMED286](#) Paramedic Operations 2
- [EMED297](#) Paramedic Clinical I 2
- [EMED298](#) Paramedic Clinical II 2
- [EMED301](#) National Registry Certification Preparation 2
- [EMED302](#) Paramedic Field Internship 4

Support Courses (8 credits)

- [BIOL121](#) Anatomy and Physiology I 4
- [BIOL122](#) Anatomy and Physiology II 4

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Minor: Philosophy

Degree Requirements

Total Credits Required: 20-21

Required Courses (12 credits):

- [PHIL205](#) Logic 3
- [PHIL215](#) Ethical Theory and Practice 3
- [PHIL302](#) Ancient Western Philosophy 3
- [PHIL305](#) Modern and Contemporary Philosophy 3

Elective Courses (8-9 credits)

- PHIL100 Special Topics (if offered) 1-4
- PHIL200 Special Topics (if offered) 1-4
- [PHIL204](#) Introduction to Philosophy 3
- [PHIL210](#) Existentialism 3
- [PHIL220](#) Biomedical Ethics 3
- [PHIL250](#) Philosophy of Religion 3
- PHIL300 Special Topics (if offered) 1-4
- PHIL400 Special Topics (if offered) 1-4
- [PHIL490](#) Directed Study in Philosophy 1-4
- [HUMN261](#) World Literature I 3
- [HUMN262](#) World Literature II 3

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Minor: Political Science

Degree Requirements

Total Credits Required: 28

Required Courses:

- [POLI110](#) Intro. to American Government & Politics 4
or
- [POLI160](#) Intro. to Canadian Government & Politics 4
- [POLI202](#) Sophomore Seminar Political Research & Stats 3
- [POLI351](#) Political Philosophy 4

A minimum of one course in each of the following three fields: (9-12 credits)

- American Politics: [POLI301](#), [POLI325](#), [POLI367](#), [POLI467](#)
- Comparative Politics: [POLI234](#), [POLI331](#), [POLI334](#), [POLI335](#)
- International Relations: [POLI241](#), [POLI245](#), [POLI342](#), [POLI411](#), [POLI413](#), [POLI420](#)

Additional political science electives must be taken to reach 22 credits. A minimum of 12 credits must be at the 300/400 level.

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Minor: Pre-law

Degree Requirements

Total Credits Required: 22-23

Required Courses:

- [LAWS102](#) Legal Research and Case Analysis 3
- [LAWS202](#) Legal Writing and Analysis 3
- [POLI120](#) Introduction to the Legal Process 3
- [POLI222](#) Introduction to the Legal Profession 3
- [POLI467](#) Constitutional Law and Civil Liberties 4

Select two courses in different disciplines from the following:

- [BUSN350](#) Business Law I 3
- [BUSN355](#) Business Law II 3
- [CJUS250](#) Correctional Law 3
- [CJUS319](#) Substantive Criminal Law 3
- [CJUS409](#) Procedural Criminal Law
- [EVRN311](#) Environmental Law 3
- [INTB375](#) International Business Law 3
- [MGMT451](#) Labor Law 4
- [POLI301](#) Policy Analysis and Evaluation 4
- [POLI342](#) International Environmental Policy 3
- [POLI499](#) Political Science/Public Administration Internship 3

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Minor: Professional Communication

Degree Requirements

Total Credits Required: 21-22

Required Courses:

- [COMM308](#) Communication Theory 3
- [CSCI106](#) Web Page Design and Development 3
- [ENGL222](#) English Grammar 3
- [ENGL306](#) Technical Writing 3
- [COMM399](#) Internship (1-4)

Elective Courses: (6-7 credits)

- [COMM210](#) Business & Professional Speaking 3
or
- [BUSN231](#) Business Communications 3
- [COMM211](#) Advanced Public Speaking 3
- [COMM302](#) Argumentation and Advocacy 3
- [COMM320](#) Public Relations 3
- [COMM325](#) Organizational Communication 3
- [ENGL221](#) Creative Writing 3
- [ENGL320](#) Responding to Writing 3
- [JOUR220](#) Photojournalism 3
- [SOWK480](#) Grantwriting 3
- [MRKT281](#) Marketing Principles & Strategy 3
- [MRKT387](#) Advertising Theory and Practice 3

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Minor: Psychology

Degree Requirements

Total Credits Required: 22

- [PSYC101](#) Introduction to Psychological Science 3
- [PSYC210](#) Statistics 3
- [PSYC212](#) Experimental Psychology 4
- PSYC Electives 6
- PSYC Elective at 300+ level 3
- [PSYC357](#) Personality Theory 3
- **or**
- [PSYC396](#) Tests & Measurements 3
- **or**
- [PSYC457](#) Cognition 4
- **or**
- [PSYC459](#) Behavioral Neuroscience 4

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Minor: Public Administration

Degree Requirements

Total Credits Required: 27

- [POLI110](#) Intro. to American Government & Politics 4
- [POLI130](#) Intro. to State and Local Government 4
- [POLI201](#) Intro. to Public Administration 3
- [POLI301](#) Policy Analysis & Evaluation 3
- [POLI401](#) Prin. of Public Administration 3
- [POLI499](#) Political Science/Public Administration Internship 3
- [ECON201](#) Prin. of Macroeconomics 3
- POLI211 Political Science Research & Statistics 4

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Minor: Public Health

Degree Requirements

Total Credits Required: 22

Required Courses (10 credits):

- [HLTH150](#) Introduction to Public Health 3
- [SOCY266](#) Medical Sociology 4
- [KINS332](#) Health Promotions 3

Choose *Three* courses within *one* of the concentrations below:

Drug Abuse Prevention:

- [SOWK204](#) Fundamentals of Drug Abuse 3
- [SOWK292](#) Substance Abuse Prevention and Treatment 3
- [SOWK341](#) Addiction 3
- [SOCY420](#) Sociology of Cannabis 3

Environmental Health:

- [HLTH210](#) Intro to Health Care Concepts and Issues 3
- [SOCY227](#) Population and Ecology 3
- [EVRN317](#) Environmental Health Applications 3
- [POLI342](#) International Environmental Policy 3
- [BIOL385](#) Public Health Statistics and Epidemiology 3

Health Education:

- [KINS140](#) Health and Fitness 3
- [HLTH208](#) Principles of Human Nutrition 3
- **or**
- [KINS275](#) Nutrition Sports Exercise Performance 3
- NURS/ [HLTH328](#) Multicultural Approaches to Health Care 3
- [PSYC385](#) Health Psychology 3

Choose one additional elective course from any [of the courses] listed above or one course from any special topics course offered within the course areas listed above (3 credits).

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Minor: Public Relations

Degree Requirements

Total Credits Required: 21

Required Courses: (13 credits)

- [COMM210](#) Business & Professional Speaking 3
or
- [COMM211](#) Advanced Public Speaking 3
- [COMM302](#) Argumentation and Advocacy 3
- [COMM308](#) Communication Theory 3
- [COMM320](#) Public Relations 4

Elective Courses: (8 credits)

- [BUSN231](#) Business Communications 3
- [COMM280](#) Understanding Mass Media 3
- [COMM307](#) Classical/Contemporary Rhetoric 3
- [COMM325](#) Organizational Communication 3
- [COMM399](#) Internship in Public Relations 1-4
- [CSCI106](#) Web Design and Development 3
- [CSCI107](#) Web Graphic Design and Development 3
- [MRKT281](#) Marketing Principles and Strategy 3
- [MRKT387](#) Advertising Theory and Practice 3
- [POLI325](#) Politics and Media 3

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Minor: Recreation Studies

Degree Requirements

Total Credits Required: 24

Required Courses: (16 credits)

- EXER140 Health and Fitness 3
- [RECS101](#) Intro. to Recreation and Leisure Services 3
- RECS105 Program Development and Leadership 3
- [RECS295](#) Practicum 2
- [RECS390](#) Recreation Leader Apprenticeship 1
- RECS482 Administration of Recreation and Leisure Services 4

**Departmental Elective: (8 credits)
(six credits from 300- and 400-level classes)**

- HMSV480 Grantwriting 3
- [RECA210](#) Lifeguarding 2
- [RECA211](#) Water Safety & Lifeguard Instructor 2
- [RECS212](#) Instructional Methods in Adapted Aquatics 2
- [RECS220](#) Methods in Arts & Crafts 3
- [RECS262](#) Outdoor Recreation 3
- RECS270 Sports Management 3
- [RECS280](#) Readiness in Games, Activities and Sports 3
- RECS320 Dance & Rhythmic Activities for Recreation 3
- RECS344 Adapted Sports and Recreation 3
- [RECS362](#) Land Management for Recreational Purposes 3
- [RECS365](#) Expedition Management 3
- [RECS367](#) National Parks, National Monuments and National Culture 3
- RECS370 Recreation for the Elderly 3
- RECS375 Commercial Recreation 3
- [RECS397](#) Recreation Studies Junior Research Seminar 1
- [RECS437](#) Recreation Studies Senior Research Seminar 1
- [RECS435](#) Research in Recreation and 3
- [RECS450](#) Philosophy of Human Performance and Leisure 3
- [RECS496](#) Selected Research Topics 1

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Minor: Robotics Technology

Degree Requirements

Total Credits Required: 24 - 27

Required Courses: 12 credits

- [EGRS215](#) Robotics Technology I 2
- [EGRS380](#) Robotics Technology II 2
- [EGRS381](#) Robotics Technology Lab 1
- [EGRS365](#) Programmable Logic Controllers 3
- [EGRS480](#) Manufacturing Automation 3
- [EGRS481](#) Manufacturing Automation Lab 1

Complete all courses from either of the following two sequences:

Engineering Technology Sequence

- [EGNR140](#) Linear Algebra and Numerical Methods for Engineers 2
- [EGNR245](#) Calculus Applications in Technology 3
- [EGNR265](#) "C" Programming 3
- [EGRS430](#) Systems Integration and Machine Vision 4
- [EGNR496](#) Senior Directed Project 3

Computer Science Sequence

- [CSCI121](#) Principles of Programming 3
- [CSCI221](#) Computer Networks 3
- CSCI461 Decision Support and Expert Systems 3
- or
- [CSCI490](#) Individual Research Topics Computer Science 3
- CSCI or MATH 300-level or above 3

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Minor: Social Work

Degree Requirements

Total Credits Required: 21

Required Courses:

- [SOWK110](#) Introduction to Social Work 3
- [PSYC201](#) Communication Skills in Counseling 3
- [SOWK250](#) Social Work Practicum 6-9
- [SOWK310](#) Clinical Practice and Diagnosis 3
- [SOWK344](#) Social Welfare Systems 3

One elective course from the following:

- [SOCY301](#) Social Research Methods 3
- [PSYC291](#) Group Counseling 3
- [SOWK301](#) Alternative Dispute Resolution and Conflict Management 3
- [SOWK305](#) Tribal Law and Government 3
- [SOCY338](#) Deviance 3
- [SOWK341](#) Addiction 3
- [PSYC391](#) Family Therapy 3
- [SOWK480](#) 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.

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Minor: Society and Environment

Degree Requirements

Total Credits Required: 25

- [BIOL304](#) The Human Environment 3
- [ECON202](#) Principles of Microeconomics 3
- [ECON307](#) Environmental Economics 3
- [INTD490](#) Senior Directed Study 3
- [NSCI103](#) Environmental Science 3
- [POLI342](#) International Environmental Policy 3
- [SOCY102](#) Social Problems 4
- [SOCY227](#) Population and Ecology 3

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Minor: Sociology

Degree Requirements

Total Credits Required: 23

- [SOCY101](#) Introduction to Sociology 4
- [SOCY238](#) Social Psychology 4
- **or**
- [SOCY214](#) Criminology 3
- **or**
- [SOCY227](#) Population and Ecology 3
- [SOCY310](#) Development of Sociological Theory 3
- **or**
- [SOCY311](#) Contemporary Sociological Theory 3
- **or**
- [SOCY301](#) Research Methods 3

One elective course from the following:

- [SOCY314](#) Social Change 3
- [SOWK480](#) Grantwriting 3
- [SOCY497](#) Community Action Project 3

Additional sociology courses (9-10 credits) to total a minimum of 23 credits.

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Minor: Sports Marketing

Degree Requirements

Total Credits Required: 28

Required Courses:

- [BUSN231](#) Business Communications 3
- [MRKT281](#) Marketing Principles and Strategy 3
- [MRKT379](#) Sports and Events Marketing 3
- RECS270 Sports Management 3
- [RECS295](#) Practicum 2
- [RECS496](#) Selected Research Topics 2

Select 12 credit hours from the following electives:

- [COMM320](#) Public Relations 4
- [INTB486](#) International Marketing 3
- [MRKT283](#) Principles of Selling 3
- [MRKT381](#) Consumer Behavior 3
- [MRKT383](#) E-Marketing 3
- [MRKT385](#) Services Marketing 3
- [MRKT387](#) Advertising Theory and Behavior 3
- [MRKT388](#) Retail Management 3
- [MRKT480](#) Marketing Research 3

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Minor: Substance Abuse Counseling

Degree Requirements

Total Credits Required: 27

- [SOWK204](#) Fundamentals of Drug Abuse 3
- [SOWK250](#) Social Work Practicum 3
- [SOWK292](#) Substance Abuse Prevention and Treatment 3
- [SOWK341](#) Addiction 3
- [PSYC201](#) Communication Skills in Counseling 3
- [PSYC240](#) Behavior Management 3
- [PSYC396](#) Tests and Measurements* 3
- [PSYC291](#) Group Counseling 3
- **or**
- [PSYC391](#) Family Therapy 3
- [PSYC259](#) Abnormal Psychology** 3
- **or**
- [SOCY338](#) Deviance** 3

*Note: [PSYC396](#) has a prerequisite of one of these statistics courses: [MATH207](#), [PSYC210](#) or [SOCY302](#).

**May count toward SOCY/PSYC minor.

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Minor: Sustainability

Degree Requirements

Total Credits Required: 21

Required Courses (3 credits)

- [NSCI103](#) Environmental Science 3

Law and Policy: 3 credits - one of the following two:

- [EVRN311](#) Environmental Law 3
- [POLI342](#) International Environmental Policy 3

Science & Technology: Minimum 6 credits from the following:

- [BIOL235](#) Introduction Protected Horticulture 3
- [EGNR261](#) Energy Systems/Sustainability 3
- [EGNR361](#) Energy Systems/Sustainability Lab 1
- [EVRN315](#) Human Impacts on Environment 4
- [EVRN317](#) Environmental Health Apps 4
- [EVRN435](#) Environmental Systems 3
- [GEOG108](#) Physical Geography: Meteorology/Climatology 4
- [GEOL334](#) Hydrologic Systems Surface & Ground water 4
- [NRES287](#) Conservation Biology 3
- [NRES304](#) The Human Environment 3

Economics: Minimum 6 credits from the following:

- [ECON201](#) Principles Macroeconomics 3
- [ECON202](#) Principles Microeconomics 3
- [ECON307](#) Environmental Economics 3
- [POLI420](#) Politics of the World Economy 4

Sociology & Human Behavior: Minimum 3 credits from the following:

- [BUSN403](#) Business, Government & Society 3
- [PSYC217](#) Social Psychology 3
- [SOCY102](#) Social Problems 4
- [SOCY227](#) Population & Ecology 3

Minimum of 6 credits at the 300/400 level required.

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Minor: Theatre

Degree Requirements

Total Credits Required: 24

- [THEA112](#) Acting for Beginners 3
- [THEA212](#) Improvisational Acting 3
- [THEA251](#) Theatre History 3
- [THEA309](#) Survey of Great Playwrights 3
- [THEA312](#) Acting Shakespeare 3
- [THEA333](#) Play Analysis 3
- [THEA412](#) Acting Studio 3

Required Practicum (3 credits):

- [THEA162](#) Practicum-Acting in Practice 1
- [THEA163](#) Practicum-Production Team 1
- [THEA164](#) Practicum-Healthcare Simulation 1

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BIOL199

Freshman Seminar

(1,0) 1

A partial focus for this course will be on academic skills and the transition from high school to college. Topics will include time management, use of campus resources, development of critical thinking, and strengthening study skills. At other times students will meet in discipline-based groups in conjunction with BIOL299, BIOL399 and BIOL499. These meetings will include discussion of literature relevant to the discipline and progress reports from upper-class students engaged in scholarly projects.

Source: Academic Catalog 2020-21

BIOL204

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: BIOL131 and CHEM115.

Source: Academic Catalog 2020-21

BIOL220

Genetics

(3,3) 4

This course covers the three major subdivisions of the study of genetics - Mendelian or transmission genetics, molecular biology, and population genetics. Transmission genetics topics will include traditional genetics problems and modes of inheritance; mitosis, meiosis and control of the cell cycle; chromosomal structure and recombination. Molecular topics will include information on DNA structure and replication, transcription, translation, gene cloning, genomics, and current research in DNA technology. Topics in population genetics will include aspects of the Hardy-Weinberg theory. The laboratory will include exercises in both traditional and molecular genetics. Prerequisites: BIOL131 and CHEM115.

Source: Academic Catalog 2020-21

BIOL280

Biostatistics

(2,2) 3

A course in the design and analysis of biological experiments. The focus of the course is the development of a systematic method for determining an appropriate statistical technique and the interpretation of results in terms of biological science. Prerequisites: BIOL131, BIOL132, and MATH111 or Calculus.

Source: Academic Catalog 2020-21

BIOL299

Sophomore Seminar

(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BIOL199, 399 and 499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Sophomores will assist with ongoing projects and will be guided by faculty and juniors enrolled in BIOL399 to conduct a comprehensive, annotated literature search in their area of interest. Prerequisite: BIOL199 and ENGL111.

Source: Academic Catalog 2020-21

BIOL337

General Ecology

(2,3) 3

A survey of concepts and applications of plant and animal physiological, morphological, behavioral, population, community, and systems ecology. Prerequisites: BIOL131, BIOL132 and MATH111.

Source: Academic Catalog 2020-21

BIOL399

Planning Research Project

(1,0) 1

A one credit practicum course in which students meet weekly with a faculty mentor to develop a senior research project, complete a formal research proposal, and present the research proposal to peers and faculty. Students and mentors will also meet in larger groups to discuss relevant literature and provide constructive feedback of student projects from BIOL499 and BIOL399. Prerequisites: BIOL280, BIOL299 and COMM101.

Source: Academic Catalog 2020-21

BIOL499

Senior Symposium

1

A one credit practicum course in which students meet weekly with a faculty mentor to complete the formal senior thesis paper, and prepare both oral and poster presentations for the senior symposia. Students and mentors will also meet in larger groups to discuss relevant literature and provide constructive feedback of student projects from BIOL499 and BIOL399. Prerequisites: BIOL280, BIOL299 and COMM101.

Source: Academic Catalog 2020-21

BIOL315

Plant Sciences: Structure and Function

(3,3) 4

Organization of the plant body, photosynthesis, water relations, mineral nutrition, growth and reproduction, plant responses to stress, ecological and economic importance of secondary metabolites. Prerequisites: BIOL131, BIOL132, CHEM115.

Source: Academic Catalog 2020-21

BIOL330

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: BIOL131, BIOL132 and CHEM116.

Source: Academic Catalog 2020-21

BIOL421

Advanced Cell & Molecular Biology

(3,3) 4

This course will examine cellular structure and function with emphasis on organelle ultrastructure, cell membranes and permeability, cellular interactions, and the molecular foundations of genetic mechanisms and cell energetics. Prerequisites: BIOL220 and CHEM351.

Source: Academic Catalog 2020-21

BIOL202

Plant Science: Ident/Diversity

(2,3) 3

Identification of plants, with emphasis on local flora; systematics and overview of the biodiversity across plant families, with emphasis on seed plants; ecological, cultural and economic concerns of select plant species. Prerequisite: BIOL132

Source: Academic Catalog 2020-21

BIOL302

Invertebrate Zoology

(2,3) 3

A study of the invertebrate groups with emphasis on morphology, phylogeny and life cycles. Prerequisite: BIOL132.

Source: Academic Catalog 2020-21

BIOL303

General Entomology

(2,3) 3

An introduction to the biology, ecology and systematics of the insects. This course covers fundamentals of insect taxonomy and physiology; and the varied roles insects play in the natural world and in human history and culture. Prerequisite: BIOL132.

Source: Academic Catalog 2020-21

BIOL306

Mycology

(2,2) 3

Covers fungal structure, reproduction, and classification, fungal infections and toxicoses of humans and plants, food uses of fungi, fungal identification, and fungal cultural. Laboratory covers techniques for fungal cultural, identification, and laboratory diagnosis of mycoses. Prerequisite: BIOL132 and BIOL204.

Source: Academic Catalog 2020-21

NRES310

Ichthyology

(2,3) 3

Study of the anatomy, physiology, behavior, taxonomy and natural history of fishes, with emphasis on freshwater species, particularly those in the Great Lakes region. Prerequisite: BIOL132.

Source: Academic Catalog 2020-21

NRES311

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. Prerequisite: BIOL243 or BIOL330.

Source: Academic Catalog 2020-21

NRES312

Ornithology

(2,4) 3

A study of the biology and taxonomy of birds. Labs will focus upon bird anatomy and bird recognition using video tapes and specimens, Prerequisite: BIOL132.

Source: Academic Catalog 2020-21

BIOL422

Parasitology

(2,2) 3

A study of the morphology, taxonomy, habitats, pathology and life cycles of parasites. Prerequisites: BIOL131 and 132.

Source: Academic Catalog 2020-21

BIOL425

Virology

(2,3) 3

The basic concepts of virology are discussed. Lab will cover some traditional virology methods but will emphasize recent molecular approaches to viral identification. Prerequisite: BIOL204 and BIOL220.

Source: Academic Catalog 2020-21

NRES475

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: BIOL337 and Junior Standing.

Source: Academic Catalog 2020-21

NRES199

Freshman Seminar

(1,0) 1

A partial focus for this course will be on academic skills and the transition from high school to college. Topics will include time management, use of campus resources, development of critical thinking, and strengthening study skills. At other times students will meet in discipline-based groups in conjunction with BIOL or NRES299, BIOL399 and BIOL499. These meetings will include discussion of literature relevant to the discipline and progress reports from upper-class students engaged in scholarly projects.

Source: Academic Catalog 2020-21

NRES299

Sophomore Seminar

(1,0) 1

Students meet in discipline-based, student-faculty groups in conjunction with BIOL/NRES199, BIOL399 and BIOL499. Weekly meetings will include discussion of literature relevant to the discipline and progress reports from upperclass students engaged in scholarly projects. Sophomores will assist with ongoing projects and will be guided by faculty and juniors enrolled in BIOL399 to conduct a comprehensive, annotated literature search in their area of interest. Prerequisite: BIOL199 or NRES199 and ENGL111.

Source: Academic Catalog 2020-21

NRES250

Quantitative Biology

(3,0) 3

This course will use quantitative methods to examine biological relationships and processes. Students will explore diverse biological topics including heat and energy balance, relative growth, photosynthesis, genetic drift, and diffusion using a variety of quantitative tools. Prerequisites: BIOL131, BIOL132 and MATH111.

Source: Academic Catalog 2020-21

NRES398

Planning an Experiential Learning Project

(1,0) 1

A weekly seminar class for students planning a major experiential learning project, such as a capstone academic service learning project or internship. Students will work with the course instructor to define the project objectives, outline the tasks, plan the work with the host agency, plan the project assessment techniques and budget, and design the academic evaluation. The outcome of class will be a proposal for the project. Prerequisite: NRES/BIOL299.

Source: Academic Catalog 2020-21

NRES399

Research Project Design

(1,0) 1

This seminar style course is designed to help students develop their senior thesis project. Topics include literature analysis, scientific writing, and oral presentation of scientific information. In addition, all students will work with their senior thesis mentor, finalize a topic for their senior thesis project and present their proposed study in a seminar format. Students in NRES399 are required to attend the poster session and senior thesis oral presentations. Prerequisites: NRES199 or USEM101 and NRES299.

Source: Academic Catalog 2020-21

NRES450

Apprenticeship in (Discipline)

(0,3) 1

Students will assist in classroom laboratories or operation of university facilities (e.g., CFRE Fish Hatchery and Mesocosm Room), under daily direction of faculty or staff and supervision of faculty. Course may be repeated for a maximum of two credits. Students must gain approval of the supervising faculty member.

Source: Academic Catalog 2020-21

NRES495

Senior Project

(0,6) 2

A practicum under the guidance of a faculty member. The student will conduct a scholarly project based on the proposal submitted by the student in BIOL399 (or an appropriate substitute). Prerequisite: BIOL399.

Source: Academic Catalog 2020-21

NRES499

Senior Capstone

(1,0) 1

Senior Capstone is required of all seniors majoring in conservation biology, environmental science, and fisheries and wildlife. Students will write a scholarly paper detailing their individual research or experiential learning project. An oral seminar and a poster presentation are also required components of this course. Students must attend the presentations of the other students enrolled in this course. Prerequisites: NRES495 or NRES497 or EVRN495.

Source: Academic Catalog 2020-21

CHEM116

General Chemistry II

(4,3) 5

Fundamental principles of chemistry with emphasis on physical chemical concepts such as solids and solutions, kinetics, thermodynamics, equilibrium, including acid-base reactions, electron transfer processes and nuclear chemistry.

Prerequisite: CHEM115 with a grade of C- or better.

Source: Academic Catalog 2020-21

CHEM225

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: CHEM116 with a grade of C- or better.

Source: Academic Catalog 2020-21

CHEM208

Survey of Organic Chemistry with Biological Applications

(3,3) 4

A survey course in organic chemistry covering the nomenclature, structure, reactivity, synthesis, and spectroscopic analysis of important organic compounds with an emphasis on biological applications. This course will introduce students to the chemistry of bio-organic compounds and persistent organic pollutants. The laboratory will introduce basic organic laboratory techniques and will include experiments in organic synthesis, separations, and analysis. Prerequisite: CHEM116.

Source: Academic Catalog 2020-21

MATH111

College Algebra

(3,0) 3

This course is a study of families of functions through formulas, tables, graphs and words, emphasizing applications in business, life and social science. The function families include linear, polynomial, rational, exponential, logarithmic and power functions. Within these families, topics include problem solving, model creation, solving equations, systems of equations and inequalities, rates of change, graphing, analysis, and interpretation. Prerequisites: Two years of high school algebra and satisfactory achievement on the mathematics placement exam or MATH102 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.

Source: Academic Catalog 2020-21

MATH112

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: MATH111 with a grade of C or better. This course will not count toward a major or minor in mathematics.

Source: Academic Catalog 2020-21

BIOL208

Principles of Animal Biology and Health

(3,0) 3

The course provides a comprehensive overview of the biology of animals that are in close association with humans, including food animals, companion animals and zoo animals. The main topics will emphasize fundamental concepts of animal anatomy and physiology, animal nutrition and growth, animal breeding and selection, animal health and management, ecology and behavior, diversity and evolution, as well as applications in care and use of specific animal species and phyla. Prerequisite: BIOL131 and BIOL132.

Source: Academic Catalog 2020-21

BIOL243

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: BIOL132 and sophomore standing.

Source: Academic Catalog 2020-21

BIOL405

Animal Behavior

(3,0) 3 Alternate Years

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 BIOL330 or 337. Offered even-numbered fall semesters.

Source: Academic Catalog 2020-21

BIOL420

Evolutionary Analysis

(3,0) 3

This course explores the fundamental mechanisms of evolutionary process and speciation, and illustrates the use of evolutionary analysis as a problem-solving tool. Issues of current interest in ecology, conservation, animal behavior, human medicine and a variety of other fields are addressed from the evolutionary perspective to explain biological phenomena and community interactions. Prerequisite: BIOL220.

Source: Academic Catalog 2020-21

BIOL335

Principles of Animal Nutrition

(3,0) 3 Alternate Years

A scientific approach to the nutritional role of water, carbohydrates, proteins, lipids, minerals, and vitamins. The course will emphasize comparative aspects of gastrointestinal anatomy and physiology for livestock, wildlife, and fish. Prerequisites: CHEM116.

Source: Academic Catalog 2020-21

BIOL426

Animal Disease and Zoonoses

(3,0) 3

The course covers the environmental conditions that favor disease outbreaks, and the affects of diseases on the functional dynamics of both terrestrial and aquatic ecosystems, including human public health. Basic concepts of the ecology of infectious diseases and management strategies for functional ecosystems will be discussed. Prerequisite: BIOL337.

Source: Academic Catalog 2020-21

NRES240

Natural History of the Vertebrates

(3,0) 3

A survey course covering the taxonomy, phylogeny and ecology of vertebrates with an emphasis on North American taxa.
Prerequisite: NRES107 or BIOL132.

Source: Academic Catalog 2020-21

BIOL423

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: BIOL131, BIOL132, BIOL204 and CHEM351.

Source: Academic Catalog 2020-21

CHEM353

Introductory Toxicology

(3,0) 3 Alternate Years

An introduction to toxicology, including its history, types of poisons, their mode of operation and the biochemistry of detoxification. Environmental problems caused by toxic contaminants will be discussed. Prerequisite: CHEM351

Source: Academic Catalog 2020-21

CHEM351

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, vitamins, 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: CHEM225.

Source: Academic Catalog 2020-21

BIOL307

US Food System

(3,0) 3

An overview of how food is produced, sold, bought and used in the US. The class will analyze the ecological, economical, social, cultural, political and ethical implications of the conventional operation of the US food systems and investigate emerging alternatives designed to address these issues. Prerequisites: ENGL111, Junior status.

Source: Academic Catalog 2020-21

BIOL235

Introduction to Protected Horticulture

(2,3) 3

An introduction to growing crop plants in hoopouses, greenhouses or other protective structures. Topics include infrastructure considerations, management of growth conditions and disease/pests specific to growing indoors, variety selection, monitoring and adaptive management, and cost management. Prerequisites: BIOL 104 or both BIOL 131 and BIOL 132.

Source: Academic Catalog 2020-21

BIOL389

Internship in (Discipline)

(3-4) 3-4

A variable credit practicum course in which the students will perform research and/or gain work experience under the direction of a faculty mentor and a qualified supervisor. Students are expected to spend a minimum of 45 hours in an approved work setting for each credit earned. The course may be repeated once for a maximum of eight credits. Student interns will be required to write weekly updates or journal entries to be submitted to their LSSU faculty mentor for evaluation of what the student has learned. Prerequisites: 2.50 GPA in major and permission of faculty mentor or department chair.

Source: Academic Catalog 2020-21

POLI130

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.

Source: Academic Catalog 2020-21

POLI301

Policy Analysis and Evaluation

(3,0) 3

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.

Source: Academic Catalog 2020-21

COMM302

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: COMM101.

Source: Academic Catalog 2020-21

COMM320

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: COMM101.

Source: Academic Catalog 2020-21

BIOL232

Introduction to Aquaponics

(3,3) 4

The course will cover the main topics of aquaponics including an overview of the concept; coupled versus uncoupled systems; microbiology (friendly microbes and pathogens), water chemistry and nitrogen-cycling, plant growth and nutrition, aquatic animal growth and nutrition, automation and system monitoring, sustainable energy options. Pre-requisite BIOL132 or BIOL104 and CHEM115 or CHEM108 and CHEM109.

Source: Academic Catalog 2020-21

MRKT281

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: ENGL110.

Source: Academic Catalog 2020-21

MRKT384

Social Media Marketing

(3,0) 3

The course content will provide insight to social interactions, examining the various social media channels available to marketers, social marketing strategies, and track their effectiveness. Social media is heavily technology-driven, the course will cover relevant related aspects in digital marketing its relation to buying and selling of goods and services, or the transmitting of funds or data, over an electronic network. Prerequisite: Sophomore standing.

Source: Academic Catalog 2020-21

MRKT386

Mobile Marketing

(3,0) 3

The course defines mobile marketing, designs strategies, tracks ROI of mobile advertising, and instructs students in the application and design of mobile websites. The course teaches students how users engage with mobile, create a clear marketing strategy, target segment and measure mobile campaigns. Prerequisite: Sophomore standing.

Source: Academic Catalog 2020-21

BIOL385

Public Health Statistics and Epidemiology

(3,0) 3

Principles, purpose and methods of descriptive and analytic epidemiology with emphasis on environmental health.
Prerequisite: BIOL280 or PSYC210 or SOCY302 or MATH207.

Source: Academic Catalog 2020-21

EVRN131

Introduction to GIS and GPS

(2,3) 3

This course develops foundational knowledge and skills in (1) cartography (the science and art of map making); (2) remote sensing; (3) geographic information systems (GIS) and the many application of GIS in diverse professional and academic fields; and (4) the theory and operation of GPS receivers and data integration with GIS. Prerequisites: none.

Source: Academic Catalog 2020-21

EVRN225

Intermediate GIS

(2,3) 3

This course includes design, implementation, and use of geographic information systems (GIS) for a variety of practical applications and research topics. Emphasis will be on geodatabases, georeferencing, geocoding, and geoprocessing, as well as providing an introduction to advanced topics using ESRI's suite of geospatial applications. Prerequisite: EVRN131.

Source: Academic Catalog 2020-21

EVRN325

Geospatial Analysis

(2,3) 3

This course utilizes visualization of spatial data with GIS-based methods to analyze the data's distribution in space and/or time. Key topics will include the properties and quality of spatial data from land based and remote sensing sources, and the conceptual framework of spatial analysis. Project-centric lab exercises will include a variety of geospatial application such as the analysis of land use/land cover change, digital elevation model (DEM) analysis for terrain, watershed and flow, spatial interpolation, site suitability analysis, and spatial modeling through public and/or private sector applications.

Prerequisite: EVRN225.

Source: Academic Catalog 2020-21

BIOL121

Human Anatomy and 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 complement the lecture topics. This course may not be used as a general education natural science elective nor does this sequence apply toward a major or minor in biological science. Prerequisites: High school chemistry, MATH088 or equivalent satisfactory score on ACT/SAT or Placement Exam, Pre or Corequisite ENGL110.

Source: Academic Catalog 2020-21

BIOL332

Embryology

(2,2) 3 Alternate Years

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: BIOL131 and BIOL132. (BIOL243 is highly recommended.)

Source: Academic Catalog 2020-21

BIOL380

Clinical Hematology and Hemostasis

(3,3) 4 Alternate Years

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: CHEM351 and BIOL330 as a pre- or corequisite.

Source: Academic Catalog 2020-21

BIOL406

Immunoematology

(2,3) 3 Alternate-Year Course

Fundamentals of blood banking in the ABO, Rh and other blood group systems; blood component preparation and utilization; transfusion complications; quality control and problem solving. Laboratories include techniques used in immunology/serology; blood grouping; compatibility testing; and antibody identification. Offered even-numbered springs. Prerequisites: BIOL220. Pre- or co-requisite: BIOL423.

Source: Academic Catalog 2020-21

BIOL433

Histology and Histopathology

(3,3) 4 Alternate Years

A systems approach is used to study the microscopic anatomy of mammalian tissues and organs. Related physiological processes are integrated with the anatomical studies. The course includes an intensive laboratory experience where students will learn to visually identify diseased tissue. They will also learn methods of sample preparation including sectioning and staining for microscopic identification of pathogens. Prerequisites: BIOL330.

Source: Academic Catalog 2020-21

BIOL455

Clinical Chemistry and Body Fluids Analysis

(3,2) 4 Alternate Year Course

Covers molecular analytes that are measured in blood, urine, and body fluids: the physiologic and pathologic processes that affect the levels of these analytes, correlations of analyte levels with disease, methods and instruments used to measure them, and principles and practices of quality control. Offered fall of even-numbered years. Prerequisites: MATH207, CHEM332. Pre- or co-requisite: CHEM351. It is highly recommended that students take BIOL330, Animal Physiology, before taking BIOL455.

Source: Academic Catalog 2020-21

BIOL480

Advanced Clinical Microbiology

(3,3) 4 Alternate Years

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: BIOL204 and CHEM326.

Source: Academic Catalog 2020-21

CHEM326

Organic Chemistry II

(3,3) 4

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 advance 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: CHEM225 with a grade of C- or better.

Source: Academic Catalog 2020-21

PHYS222

Principles of Physics II

(3,2) 4

Thermodynamics, vibrations and waves, electricity and magnetism, light, optics, relativity and modern physics. Prerequisite: PHYS221 with a grade of C or better.

Source: Academic Catalog 2020-21

CHEM231

Quantitative Analysis

(3,3) 4

Evaluation of analytical data and study of gravimetric and titrimetric methods of analysis. Prerequisites: CHEM116 with a grade of C- or better and MATH111 with a grade of C.

Source: Academic Catalog 2020-21

CHEM261

Inorganic Chemistry

(3,3) 4

This course will provide a foundation in Inorganic Chemistry with a focus on understanding the properties of the elements, bonding and geometries of small molecules and their chemical reactivities. Survey of main group and transition metal chemistry and applications to bio-inorganic chemistry. The laboratory component will provide students with opportunities to observe and measure the changes that accompany inorganic reactions and to make predictions regarding these inorganic reactions. Prerequisite: CHEM116 with a grade of C- or better.

Source: Academic Catalog 2020-21

CHEM310

Applied Spectroscopy

(3,3) 4

General principles of spectroscopy will be explored including underlying principles and theory, data acquisition and processing coupled with spectral interpretation. Different spectroscopic methods used for the structural determination of organic molecules and in chemical research are described including mass spectrometry (MS), ultraviolet and visible spectroscopy (UV-Vis), infra-red spectroscopy (IR), atomic spectroscopy, fluorescence spectroscopy, and both one-dimensional and two-dimensional ^1H and ^{13}C nuclear magnetic resonance (NMR) spectroscopy. Prerequisite: CHEM231 and CHEM326. (Alternate Years)

Source: Academic Catalog 2020-21

CHEM332

Instrumental Analysis

(3,3) 4

Continuation of CHEM231. 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: CHEM231 with a grade of C- or better. Recommended either PHYS222 or PHYS232.

Source: Academic Catalog 2020-21

CHEM361

Physical Chemistry I

(4,0) 4

Chemical thermodynamics with applications to both phase and chemical equilibria. Prerequisites: CHEM116, one year of physics, and either MATH112 or MATH152. Corequisite: CHEM363.

Source: Academic Catalog 2020-21

CHEM362

Physical Chemistry II

(3,0) 3

Traditional quantum chemistry topics will be discussed that help explain chemical phenomena and provide descriptions and applications for spectroscopy. Prerequisite: CHEM361.

Source: Academic Catalog 2020-21

CHEM363

Physical Chemistry Laboratory: Kinetics and Reaction Dynamics

(0,3) 1

An advanced laboratory exploring reaction kinetics and dynamics with an emphasis on modern methods of physical chemistry measurement. Prerequisite: CHEM116 and one semester of calculus.

Source: Academic Catalog 2020-21

CHEM395

Junior Seminar

(1,0) 1

Literature searching, scientific writing, and oral presentation of scientific data. Students will be expected to listen to presentation of peers enrolled in CHEM/EVRN499 and develop a topic for their senior thesis. Prerequisite: Junior standing. Note: Also listed as EVRN395.

Source: Academic Catalog 2020-21

CHEM461

Advanced Inorganic Chemistry

(3,0) 3 Alternate Years

This is an every-other-year course. This course will meet for three hours per week. Advanced concepts of inorganic chemistry will be examined, including atomic structure, ionic and covalent substances, acids and bases, main group elements, and transition metal elements. Prerequisite: CHEM261.

Source: Academic Catalog 2020-21

CHEM462

Advanced Inorganic Chemistry Laboratory

(0,3) 1 Alternate Years

This is an every-other-year course. This laboratory will meet for three hours per week. Advanced concepts of inorganic chemistry will be examined in a laboratory setting. Pre- or corequisites: CHEM461 and either CHEM310 or CHEM332.

Source: Academic Catalog 2020-21

CHEM495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. This course will be required for a degree certified by the American Chemical Society. This course may not be repeated for credit. Prerequisites: CHEM395 (also listed as EVRN395) and permission of instructor. Dual listed as EVRN495.

Source: Academic Catalog 2020-21

CHEM499

Senior Seminar

(1,0) 1

Required for seniors majoring in chemistry/environmental science. Students will present the results of their scholarly research. Students who have completed CHEM/EVRN495 will be required to give poster and oral presentations to the University community as part of this class. Pre- or corequisite: CHEM395 (also listed as EVRN395). Dual listed as EVRN499.

Source: Academic Catalog 2020-21

USEM101

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.

Source: Academic Catalog 2020-21

BUSN211

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: MATH111.

Source: Academic Catalog 2020-21

MATH207

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam. This course will not count toward a major in mathematics.

Source: Academic Catalog 2020-21

MATH151

Calculus I

(4,0) 4

Limits, continuity and inverse functions. Logarithmic and exponential functions. Differentiation and applications of the derivative. L'Hopital's rule. Inverse trigonometric functions. Integration and the definite integral. Prerequisites: high school mathematics that includes two years of algebra, one year of plane geometry and one-half year of trigonometry and equivalent/satisfactory score on SAT, ACT or Placement Exam or both MATH111 and MATH131 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH152

Calculus II

(4,0) 4

Applications of the definite integral. Techniques of integration and improper integrals. Infinite series. Conic sections, polar coordinates and parametric equations. Prerequisite: MATH151 with a grade of C or better.

Source: Academic Catalog 2020-21

EGNR140

Linear Algebra and Numerical Applications for Engineers

(1,3) 2

This course covers the engineering application of concepts from applied mathematics, iterative programming and computational software packages. Applications of linear algebra are introduced. Iterative programming emphasizes loops, conditional statements and user input-output. The lab also includes instruction on commercially-available software used to perform computational tasks of applied interest. Prerequisite: MATH131. Pre- or Co-requisites: MATH112 or MATH151.

Source: Academic Catalog 2020-21

EGNR245

Calculus Applications for Technology

(2,2) 3

This course covers engineering applications of differential and integral calculus, including areas, volumes of solids, vector analysis, matrix algebra, polar and cylindrical coordinate systems, partial differentiation, and multiple integrals for typical engineering technology problems. Application and solutions to engineering problems will emphasize and require the use of commercial software packages such as MathCAD and MATLAB. Prerequisite: EGNR140.

Source: Academic Catalog 2020-21

EDUC443

Science Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific science content. Students develop and present science lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

Source: Academic Catalog 2020-21

EDUC453

Directed Study in Science Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific science content. Students develop and present science lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC443. Prerequisite: EDUC415 or EDUC430.

Source: Academic Catalog 2020-21

PHYS232

Applied Physics for Engineers and Scientists II

(3,2) 4

Continuation of PHYS231. Introduction to thermal physics, electricity, magnetism, electromagnetic waves, and optics.
Prerequisite: PHYS231 with a grade of C or better.

Source: Academic Catalog 2020-21

EDUC301

Educational Psychology and Learning Theory

(3,0) 3

This course focuses on research-based theories of learning and learning processes, the role of the teacher in supporting the process, and alternatives for evaluation of learning outcomes. Field experience is required. Prerequisites: EDUC250 and admission to the teacher education program.

Source: Academic Catalog 2020-21

EDSE301

Introduction to Special Education

(3,0) 3

An introduction to the historical and legal bases of special education. Research based examination of the models, theories and philosophy of teaching students with disabilities. Prerequisites: admission to the School of Education. This course may NOT be repeated for credit.

Source: Academic Catalog 2020-21

EDUC350

Integrating Technology into 21st Century Learning Environments

(2,2) 3

This course explores instructional technology tools, educational media, theory, and practice with the goal of designing consummate learning experiences with seamless technology integration for all students. Application of technology and learning theory to planning for instruction is included, with specific focus on setting outcomes for learning. Prerequisites: Admission to the teacher education program, EDUC301.

Source: Academic Catalog 2020-21

EDUC415

General Instructional Methods

(1,2) 2

This course provides opportunities to study and apply research-based instructional methodologies to facilitate effective learning with an emphasis on differentiation and authentic assessment. Fieldwork required. Prerequisites: Admission to the teacher education program, EDUC350.

Source: Academic Catalog 2020-21

EDUC440

Reading in the Content Area

(3,0) 3

A study of reading methods appropriate to use in secondary classrooms. Includes formal and informal assessment procedures for determining students' abilities and the accompanying strategies to enhance content area comprehension and concept development. Students use national and state standards and benchmarks in planning instruction and assessment. Integrated technology component. Fieldwork required. Prerequisites: EDUC250, EDUC301 and admission to the teacher education program.

Source: Academic Catalog 2020-21

EDUC460

Classroom Management

(2,0) 2

This course focuses on effective classroom management techniques essential to creating a positive, democratic learning environment. Exploration of management techniques and theories leads to a development of personal classroom management system to help students become responsible for their behaviors and choices. Prerequisite: EDUC415.

Source: Academic Catalog 2020-21

EDUC480

Directed Teaching Seminar

(2,0) 2

This seminar provides a forum for students in the Directed Teaching experience to discuss issues in teacher education, classroom management, teaching of all students and professional development. Co-requisite: EDUC492.

Source: Academic Catalog 2020-21

EDUC492

Directed Teaching

10

This course is a full-time teaching practicum under the direction and mentoring of a k-12 cooperating teacher. Evolution from observation and facilitation of small group activities, to whole-class instruction of a full-time teaching load in an area school. Emphasis is placed on maintaining classroom communities that ensure equitable access to important knowledge and skills. Grading will be CR/NC. Prerequisites: Admission to student teaching internship. Corequisite: EDUC480.

Source: Academic Catalog 2020-21

EDUC101

Self as Learner

(2,0) 2

This course introduces students to the field of education. Emphasis is placed on the application of basic learning theory to personal success in learning, successful integration into the university culture, educational ethics, and professional growth through the study of controversies in education.

Source: Academic Catalog 2020-21

CHIN151

First-Year Chinese I

(4,0) 4

An introductory course designed to develop the four basic language skills in listening, speaking, reading, and writing in the target language as well as the acquisition of basic Chinese grammar and vocabulary. A communicative approach based on real-life situations. Relevant Chinese cultural aspects discussed. English used as necessary in classroom instruction.

Source: Academic Catalog 2020-21

CHIN152

First-Year Chinese II

(4,0) 4

Further development of basic language skills in listening, speaking, reading and writing with a strong emphasis on speaking and reading fluency. Relevant cultural aspects briefly discussed and the target language used progressively in instruction when it fits. Prerequisite: CHIN151 or equivalent.

Source: Academic Catalog 2020-21

CHIN251

Second-Year Chinese I

(3,0) 3

An intermediate-level course aiming at expanding the learner's ability to communicate in everyday life situations in the target language. Continued focus on language proficiency in listening, speaking, reading, and writing as well as further development of vocabulary knowledge and consolidation of grammatical knowledge. Social and cultural norms and conventions discussed when appropriate. Communicative approach used in instruction. Prerequisite: CHIN151, CHIN152 or equivalent.

Source: Academic Catalog 2020-21

CHIN252

Second-Year Chinese II

(4,0) 4

An intermediate-level course aiming at expanding the learner's ability to communicate in everyday life situations in the target language. Continued focus on language proficiency in listening, speaking, reading, and writing as well as further development of vocabulary knowledge and consolidation of grammatical knowledge. Social and cultural norms and conventions discussed when appropriate. Communicative approach used in instruction. Prerequisite: CHIN251 or equivalent.

Source: Academic Catalog 2020-21

SPAN161

First-Year Spanish I

(4,1) 4 Fall

Introduction to basic Spanish grammar and vocabulary, designed to acquaint the student with the essentials of oral and written Spanish.

Source: Academic Catalog 2020-21

SPAN162

First-Year Spanish II

(4,1) 4 Spring

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: SPAN161 or equivalent.

Source: Academic Catalog 2020-21

NRES203

Fundamentals of Natural Resources

(3,0) 3

This course will introduce students to the history of natural resource conservation and management, career opportunities within the field of natural resources, and interaction between humans and the environment. The course will focus extensively on basic concepts in human dimensions as they apply to natural resource conservation and management. Course topics include assessing social attitudes and values, social conflicts and conflict resolution, legal and regulatory framework of natural resource management, and the role of stakeholder groups in conservation and management. Prerequisite: Pre- or Co-requisite ENGL110.

Source: Academic Catalog 2020-21

NRES230

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: CHEM108 and CHEM109 or above; NSCI103 or BIOL132.

Source: Academic Catalog 2020-21

NRES284

Principles of Forest Conservation

(2,4) 4

An introduction to forest structure, function, and ecology. Important fundamentals of conservation biology such as the effects of disturbance, fragmentation, and biodiversity on forest ecosystems will be emphasized. Students will master identification of tree and shrub species of the Eastern Upper Peninsula and perform commonly used techniques to evaluate the forest resource. The lab portion of the course is in the field and proper dress is required. Prerequisites: BIOL132 or NSCI103.

Source: Academic Catalog 2020-21

NRES286

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. Prerequisite: MATH111.

Source: Academic Catalog 2020-21

NRES287

Conservation Biology

(3,0) 3

This course will provide a strong background in the field of conservation biology. The course will discuss patterns in, valuation of, and threats to biodiversity. The course will also examine tools and strategies for conserving biodiversity at the population and species levels and discuss the application of conservation biology in today's society. Specific topics include: (1) Principles of and issues in conservation; (2) Threats to biodiversity; (3) Methods and approaches to evaluate and mitigate threats; (4) Application of principles in the design of conservation reserves, restorations, and sustainable development. Prerequisites: BIOL131 and BIOL132.

Source: Academic Catalog 2020-21

NRES304

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.

Source: Academic Catalog 2020-21

NRES470

Restoration Ecology

(3,0) 3

This course will provide a broad overview of restoration of both terrestrial and aquatic ecosystems, including praries, wetlands, lakes, and streams. Through lectures, field trips, and case study discussions, students will be introduced to ecological principles and techniques used to restore and rehabilitate ecosystems. Students also will be involved in identifying, designing, and evaluating local restoration projects in conjunction with local resource agencies. Prerequisite: BIOL337.

Source: Academic Catalog 2020-21

EVRN311

Environmental Law

(3,0) 3 Alternate Years

Study of the fundamental concepts of environmental law and ethics. Course includes a survey of the field of environmental ethics and a discussion of ethical issues, a review of the basic legal systems and research techniques, state and federal environmental statutes and codes of conduct for environmental professionals. Extensive use of case studies related to application of environmental law are used to illustrate ethical dilemmas and the approaches for resolving them. Prerequisite: junior standing.

Source: Academic Catalog 2020-21

ECON307

Environmental Economics

(3,0) 3

This course examines the application of economic analysis to problems of air, water, forests, fisheries, energy, and soil use; economic approaches to valuing the environment; the benefits and costs of pollution control; and alternative policy approaches to environmental problems with emphasis on emissions trading. Prerequisite: ECON202.

Source: Academic Catalog 2020-21

SOCY227

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.

Source: Academic Catalog 2020-21

POLI342

International Environmental Policy

(3,0) 3

This course is intended to familiarize students with the efforts of the international community to establish policy guidelines designed to begin the regulation of the global environment. The course covers basic concepts to international relations necessary to understand the general workings of the nation-state system. It then begins an exploration of significant historical international environmental issues and the ways in which these have been dealt with by the international community. The course further challenges students by investigating various alternative solutions for solving the myriad of global environmental problems faced by all of humankind in the new century.

Source: Academic Catalog 2020-21

NRES497

Experiential Learning Project

3

A full semester/summer practicum experience. Students will develop work goals, responsibilities, and outcomes with their agency supervisor and faculty mentor. Students will prepare formal communication components (workshop or oral presentation and a poster). The experience should be 12 weeks at 40 hours per week. Prerequisite: NRES398.

Source: Academic Catalog 2020-21

MGMT 360

Management Concepts and Applications

(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.

Source: Academic Catalog 2020-21

MRKT385

Services Marketing

(3,0) 3

A study of the principles and practices unique to service providers. The focus of this course is to examine how the marketing of services differs from traditional marketing principles/concepts applied to goods and the alternative strategies for service providers to improve service marketing effectiveness and customer interactions. Prerequisite: MRKT281.

Source: Academic Catalog 2020-21

POLI201

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.

Source: Academic Catalog 2020-21

COMM280

Understanding the Mass Media

(3,0) 3

Acquaints students with the basic similarities and differences in newswriting among the mass media, particularly newspapers, radio and television. Students will practice writing in the various formats. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

COMM416

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: COMM101.

Source: Academic Catalog 2020-21

NRES333

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: NRES310.

Source: Academic Catalog 2020-21

NRES339

Wildlife Ecology

(3,0) 3

A quantitative analysis of the ecology and management of wildlife populations. Theories of population dynamics and distribution are presented. Community interactions including competition, predation, and herbivory, are explored in detail. Prerequisites: NRES250, BIOL280 and BIOL337.

Source: Academic Catalog 2020-21

NRES345

Limnology

(2,4) 4

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: NRES250 and CHEM115.

Source: Academic Catalog 2020-21

NRES432

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: BIOL280, NRES333 and NRES345.

Source: Academic Catalog 2020-21

NRES439

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: NRES311 or NRES312 and NRES339.

Source: Academic Catalog 2020-21

CJUS101

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.

Source: Academic Catalog 2020-21

CJUS102

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.

Source: Academic Catalog 2020-21

CJUS197

Physical Fitness for Public Safety

(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Law enforcement students (MCOLES) take course both semesters of their senior year.

Source: Academic Catalog 2020-21

CJUS201

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. Prerequisite: Criminal justice student, sophomore standing or permission of instructor. Course may be repeated twice for credit, to a maximum of 3 credits.

Source: Academic Catalog 2020-21

CJUS313

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: CJUS101 and CJUS102.

Source: Academic Catalog 2020-21

CJUS321

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: CJUS101 and CJUS102.

Source: Academic Catalog 2020-21

NRES372

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: BIOL280 and NRES310.

Source: Academic Catalog 2020-21

GEOL223

Earth Materials

(3,3) 4

A course emphasizing techniques for identification and interpretation of minerals and rocks. Major topics include: physical properties, crystalline structure, and chemical composition of minerals, classification of minerals and rocks; interpretation of origins of igneous, sedimentary and metamorphic rocks; plate tectonic occurrence of minerals and rock assemblages; and societal and economic significance of minerals and rocks. Prerequisite: GEOL121 or NSCI102. Pre- or corequisites: GEOL122 and CHEM115.

Source: Academic Catalog 2020-21

GEOL308

Structural Geology Systems

(3,3) 4

A study of the deformation of the Earth through a project-centered approach that focuses on geologic questions. Course emphasis is on descriptive, kinematic and dynamic analysis of geologic structures, deformation mechanisms and the evolution of each in the context of the regional and global geology. Day and/or weekend field excursions may be required. Prerequisite: GEOL121 and GEOL122.

Source: Academic Catalog 2020-21

GEOL315

Geoenvironmental Systems

(3,3) 4 Alternate Years

The study of environmental issues in a geological context through local and regional field projects. Projects will examine issues such as flooding, shoreline erosion, slope stability, groundwater resources and contamination, and the environmental impact of mineral and energy resource extraction. Emphasis will be placed on the evaluation of environmental issues through the application of geological and environmental field data such as collecting and analyzing sediments, and bedrock and sediment mapping. Prerequisites: GEOL121 and GEOL122, CHEM115 and EVRN131.

Source: Academic Catalog 2020-21

GEOL322

Geochemical Systems

(3,3) 4

The study of high- and low-temperature geochemical processes including topics such as chemical, mineral and rock equilibrium, redox reactions, isotopes, chemical weathering, and nutrient cycles. Low-temperature geochemistry will emphasize processes that occur in soil, water, air, and sediments. High-temperature geochemistry will focus on trace and primary elements, igneous and metamorphic processes and geochemical processes that form ore-bearing mineral deposits. A field trip to visit mining, mineral exploration or environmental sites may be required. Prerequisites: GEOL223 and CHEM115.

Source: Academic Catalog 2020-21

GEOL334

Hydrologic Systems: Surface and Groundwater

(3,3) 4

A study of hydrologic systems with an emphasis on hydrologic processes on land surface, sub-surface, and near-surface atmosphere. Water movement through geologic materials, aquifer properties, well-water dynamics, and contaminant transport in groundwater; physical basis of evapotranspiration, precipitation, and surface runoff; and causes and solution approaches of water resource problems will be studied. Laboratory components will provide experience in hydrologic field-techniques, analytical methods of hydrologic data, model-based exercises and data analysis. Prerequisites: GEOL121, EVRN131 and MATH111. Pre-or Corequisite: GEOL122.

Source: Academic Catalog 2020-21

GEOL355

Stratigraphy and Sedimentation

(3,3) 4 Alternate Years

The study and interpretation of clastic and carbonate sediments and rocks and the environments in which they form. Emphasis will be on stratigraphic and sedimentological principal through topics such as clastic transport and fluid flow; sedimentary structures; lithostratigraphy, biostratigraphy and introduction to sequence stratigraphy; facies recognition and relationships; depositional models; stratigraphic diagrams and maps; diagenesis and tectonics and sedimentation. Weekend fieldtrips may be required. Prerequisite: GEOL223 and GEOL308.

Source: Academic Catalog 2020-21

GEOL380

Introduction to Field Geology

(0,9) 3

Introduction to field methods in geology including measurement of sections, mapping techniques, and field interpretation of outcrops. A variety of geologic provinces and environments will be examined. A supply and travel fee will be charged.

Prerequisites: GEOL223 and GEOL308.

Source: Academic Catalog 2020-21

GEOL431

Geophysical Systems

(3,3) 4 Alternate Years

The study of geologic, geophysical, and environmental problems using geophysical techniques such as: ground penetrating radar, magnetic, electromagnetic, resistivity, gravity, seismics, etc. Projects will involve geophysical and geologic survey design, data collection, data processing, and data interpretation and will require the integration of geophysical and geological data to solve problems. Prerequisite: GEOL308. Pre- or corequisites: MATH112 or MATH151 and PHYS221 or PHYS231.

Source: Academic Catalog 2020-21

GEOL440

Technology in Geology

(1,3) 2 Alternate Years

Students will use modern technologies to evaluate geologic problems and questions. These technologies will change with time but may include computer, field and/or laboratory applications. Prerequisite: Eight or more credits of GEOL 3XX and/or GEOL4XX courses.

Source: Academic Catalog 2020-21

GEOL450

Geology Seminar I

(0,2) 1 Alternate Years

Study, discussion, and laboratory experience in specialized topics in geology. Students will collect and compile information, write research papers, make presentations, and lead discussions. Prerequisite: Two GEOL courses at the 300 level or above.

Source: Academic Catalog 2020-21

GEOL451

Geology Seminar II

(0,2) 1 Alternate Years

Study, discussion, and laboratory experience in specialized topics in geology. Students will collect and compile information, write research papers, make presentations, and lead discussions. Prerequisite: Two GEOL courses at the 300 level or above.

Source: Academic Catalog 2020-21

GEOL468

Tectonic Systems

(3,6) 5 Alternate years

Study of tectonic process and how these processes affect the earth and its evolution with time. A variety of modern and ancient tectonic settings will be studied through projects and case studies. The deformational, geochemical, mineralogical, petrological, sedimentological and geophysical characteristics of individual tectonic settings will be evaluated and their evolution with time will be analyzed. Weekend and/or weeklong field trips may be required. Prerequisites: GEOL223 and GEOL308.

Source: Academic Catalog 2020-21

GEOL480

Advanced Field Geology

(0,9) 3 Alternate Years

Three weeks of advanced field methods in geology including field mapping of deformed rocks, construction of cross sections, and interpretation of depositional and deformational histories. A variety of geologic provinces and environments will be examined. A supply and travel fee will be charged. Prerequisites: GEOL380 and one additional GEOL course at the 300 level or above.

Source: Academic Catalog 2020-21

MATH308

Probability and Mathematical Statistics

(3,0) 3

An introductory course in probability and mathematical statistics. Probability, probability distributions, mathematical expectation, moment generating functions and the Central Limit Theorem. Prerequisite: MATH152 with a grade of C or better.

Source: Academic Catalog 2020-21

EVRN341

Fate and Transport in the Environment

(3,3) 4

A study of the fate and transport of chemicals in the hydrosphere, atmosphere, lithosphere, and biosphere, and the modern analytical techniques utilized by environmental chemists. The laboratory component is project based and will utilize modern analytical instrumentation and modeling approaches. Prerequisite: CHEM116.

Source: Academic Catalog 2020-21

EVRN211

Field Data Methods

(0,2) 1

A field intensive course including hands-on projects to delineate spatial boundaries based geographic, topographic, and/or ecological constructs (e.g. wetlands) to support decision-making with regards to conservation, mitigation, land use, or restoration. Prerequisites: BIOL132 and EVRN131.

Source: Academic Catalog 2020-21

EVRN315

Human Impacts on the Environment

(3,3) 4

A study of human impacts on the environment, with an emphasis on global sustainability issues including impact from technology, population growth, agricultural and land use, climate change, chemical use and pollution, and energy systems. The laboratory will focus on developing skills in modeling, site assessment, and resource management. Prerequisite: NSCI103, ENGL111, and one semester of college chemistry.

Source: Academic Catalog 2020-21

EVRN317

Environmental Health Applications

(3,3) 4

A systems approach addressing the factors that contribute to illness, injury, or death, and that affect the health status of individuals and populations. Topics include: environments within buildings, food sanitation, recreation facilities, personal services, and community noise and control. The laboratory emphasizes methods of measuring and evaluating environmental health risks as well as field experience. Prerequisite: One semester of chemistry and NSCI103 or permission of instructor.

Source: Academic Catalog 2020-21

EVRN365

Applied Geospatial Technologies

(3,3) 4 Alternate Years

This course focuses on contemporary and emerging trends in field-based geospatial technologies such as using unmanned aerial vehicles (e.g. drones), land survey equipment and advanced GPS for data collection. Course content will evolve to reflect the current state of technologies in geospatial data acquisition, processing, and delivery. Prerequisite: EVRN225.

Source: Academic Catalog 2020-21

EVRN389

Environmental Research Methods

(1,5) 3

A variety of sampling techniques and laboratory methods are introduced as they relate to the environmental sciences. These methods include sampling, preservation, and analysis of biotic (plankton, fish, benthic invertebrates, DNA, pathogens) and abiotic (water quality, sediments, soil, climate) data. Topics include representative sampling, trace inorganic and organic methods, calibration, selection of analytical methods, QA/QC, data analysis, and cost comparison. This course requires travel over spring break. Prerequisites: CHEM108 and CHEM109 or CHEM116; either NSCI103, NSCI116, NRES286 or NRES345; and either MATH207, BUSN211 or BIOL280.

Source: Academic Catalog 2020-21

EVRN435

Environmental Systems

(3,0) 3

A systems approach addressing engineered systems and their environmental impacts in modern society. Students will describe and analyze the causes and consequences of air pollution and air pollution control, water pollution and water pollution control (point source and nonpoint source controls), waste treatment, wastewater treatment, drinking water treatment, soil remediation, modern landfills, and design criteria. Prerequisites: MATH111, CHEM115, and NSCI103.

Source: Academic Catalog 2020-21

EVRN495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. This course will be required for a degree certified by the American Chemical Society. This course may not be repeated for credit. Prerequisites: EVRN395 (also listed as CHEM395), and permission of instructor. Dual listed as CHEM495.

Source: Academic Catalog 2020-21

FIRE312

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: FIRE111 or CHEM116 and junior standing.

Source: Academic Catalog 2020-21

GEOL490

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 chair. This course may be repeated for a maximum of eight credits. Prerequisites: Junior standing or higher.

Source: Academic Catalog 2020-21

GEOL495

Senior Project

(0,6) 2

This is a practicum course in which students, under the guidance of a faculty mentor, conduct a scholarly project mutually agreed upon by the student and his/her faculty mentor. Prerequisite: NRES399 or equivalent and permission of the instructor.

Source: Academic Catalog 2020-21

ENGL221

Introduction to Creative Writing

(3,0) 3

Through writing and discussion, students will study and practice introductory elements of drama, fiction, nonfiction, and poetry. Co-requisite ENGL110.

Source: Academic Catalog 2020-21

ENGL231

American Literature I

(3,0) 3

This course is a chronological study of American literature from the colonial writers through the Romantic period, ending with the Civil War. Prerequisite: ENGL180.

Source: Academic Catalog 2020-21

ENGL232

American Literature II

(3,0) 3

This course is 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: ENGL180.

Source: Academic Catalog 2020-21

ENGL320

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.

Source: Academic Catalog 2020-21

THEA112

Acting for Beginners

(2,2) 3

This course provides an exciting, fun, and safe environment to begin a college-level study of acting. These simple, doable acting techniques will help students express their ideas and thoughts more fully. Working to get students present in the moment, this course will introduce physically active games and exercises that activate all the actor's tools including breath, body, face, voice, and knees through releasing tension and embracing the imagination. Open to all majors.

Source: Academic Catalog 2020-21

MATH215

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: MATH151 or 112 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH321

History of Mathematics

(3,0) 3

Selected topics in the development of mathematics from the time of the ancient Babylonians and Egyptians to the 20th century. Prerequisites: MATH112 or 151 with a grade of C or better, and MATH215 with a grade of C or better.

Source: Academic Catalog 2020-21

CHLD150

Observation and Assessment

(4,0) 4

This course provides experience with the practices and tools for observation, documentation, and assessment of young children from birth through age eight. Discussion will include the use of results of assessment for planning continued developmental and learning experiences, as well as for appropriate classroom management and guidance strategies. Field experience is required.

Source: Academic Catalog 2020-21

CHLD210

Infants and Toddlers

(4,0) 4

This course examines the design and evaluation of developmentally appropriate teaching, caregiving, and guidance practices for children from birth to 36 months. Addresses environments that provide challenging and developmentally appropriate expectations to stimulate development toward the long-term goals of autonomy, and cognitive and social-emotional growth of infants and toddlers. Field experience is required. Prerequisite: CHLD150.

Source: Academic Catalog 2020-21

CHLD225

Emergent Literacy

(3,0) 3

This course focuses on literacy acquisition theory and language development milestones for children from birth through age 8. Factors that affect reading acquisition and techniques that assist children in developing listening, speaking, reading and writing skills are also explored. Consideration of the unique needs of English Language Learners is included.

Prerequisite: CHLD210.

Source: Academic Catalog 2020-21

CHLD245

Early Childhood Curriculum

(3,0) 3

This course focuses on the design of developmentally appropriate practices and curriculum for young children. Emphasis is placed on planning learning activities that support positive developmental outcomes, as well as on differentiating instructional strategies for the individual child. Field experience is required. Prerequisite: CHLD150.

Source: Academic Catalog 2020-21

CHLD270

Administration of Early Childhood Programs

(2,0) 2

This course focuses on the financial, legal, supervisory and administrative procedures used in operating early childhood programs, including applicable local, state, and national standards. Prerequisite: CHLD150.

Source: Academic Catalog 2020-21

CHLD310

Inclusion of Young Children with Special Needs in Early Childhood Settings

(3,0) 3

This course provides resources and models for designing and implementing quality inclusive learning environments for young children who demonstrate developmental diversity birth to age 5. Includes identification of common delays, impairments and disabilities, as well as assistive technologies appropriate for supporting continued development. Field experience is required. Prerequisite: CHLD210.

Source: Academic Catalog 2020-21

CHLD440

Family and Community Partnerships

(3,0) 3

This course explores the multiple integrated influences that impact the development of young children, and provides opportunities for students to develop collaborative and cooperative skills that are essential to building partnerships focused on supporting that development. The various roles of the early childhood educator as an advocate for individual children and for the community is addressed. Field experience is required. Prerequisite: CHLD310.

Source: Academic Catalog 2020-21

CHLD480

Directed Teaching: Seminar

(1,0) 1

This seminar provides a forum for students in the CHLD Directed Teaching experience to discuss issues in early childhood education, classroom management, teaching of all students and professional development. Co-requisite: CHLD492.

Source: Academic Catalog 2020-21

CHLD492

Directed Teaching: Early Childhood

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This course is a full-time teaching practicum under the direction and mentoring of a cooperating teacher at the pre-primary level. Evolution from observation and facilitation of small group activities, to whole-class instruction of a full-teaching load in an area center. Emphasis is placed on full range of responsibilities, including family involvement and administrative responsibilities. Grading will be CR/NC. Prerequisite: Admission to student teaching internship. Corequisite: CHLD480.

Source: Academic Catalog 2020-21

MATH103

Number Systems and Problem Solving for Elementary Teachers

(3,2) 4

General notions of problem solving and number theory for elementary teachers including sets, functions, numeration systems, and properties and operations of whole numbers, integers, fractions and decimals, and proportional reasoning. Prerequisite: Equivalent/satisfactory score on ACT or Placement Exam, or MATH102 with a grade of C (2.00) or better.

Source: Academic Catalog 2020-21

MATH104

Geometry and Measurement for Elementary Teachers

(3,2) 4

Basic notions of geometry for elementary teachers including constructions, congruence and similarity, motion geometry, symmetry and tessellations. Concepts of measurement, coordinate geometry, probability and data analysis. Prerequisite: Equivalent/satisfactory score on ACT, or Placement Exam, or MATH102 with a grade of C (2.00) or better.

Source: Academic Catalog 2020-21

HIST321

History of Michigan

(2,0) 2

The History of Michigan is a survey course that will include an examination of the geology, geography, and history of the state. This course will also study the role of citizens, events, issues, and their impact on the development of Michigan as well as the larger developments in the United States during the Jacksonian Period, the Civil War Period, the Period of Rapid Industrialization and Urbanization, the Period of 1914 to 1945, the Period 1950 to the Present, the Period of Industrial Expansion and Decline, and the Post-Vietnam War Period of Globalization. The major political, economic, social, and cultural movements and developments of these historic periods will be examined.

Source: Academic Catalog 2020-21

ENGL222

English Grammar & Language in Context

(3,0) 3

This course requires students to master the vocabulary and principles of standard English grammar related to sentence structure and the production of meaning. Students will also analyze and evaluate prescriptive and descriptive conventions of usage, the history and cultural influences of the English language, and its regional and social variations. Prerequisites: A grade of C or higher in ENGL110 and ENGL111.

Source: Academic Catalog 2020-21

ENGL335

Children's Literature

(3,0) 3

This course focuses on understanding the historical, cultural, and generic dimensions of children's literature, with emphasis on critical reading, literary analysis, and the selection and evaluation of texts for children and young adults. Pre-requisites: ENGL111 or COMM101.

Source: Academic Catalog 2020-21

EDUC330

Reading in the Elementary Classroom

(3,0) 3

This course examines reading as a process of constructing meaning through dynamic interaction among reader, the text, and the context of the reading situation. Content includes objectives, content, materials, organization and methods of teaching reading in the elementary school. Fieldwork required. Prerequisite: Admission to the teacher education program. Pre- or co-rerequisite: EDUC301.

Source: Academic Catalog 2020-21

EDUC410

Corrective Reading in the Classroom

(3,0) 3

This course considers methods for the classroom diagnosis of students' reading strengths and weaknesses. Techniques for planning and implementing corrective and remedial interventions based on diagnosis are presented and applied. Fieldwork required. Prerequisite: EDUC330.

Source: Academic Catalog 2020-21

EDUC411

Elementary Language Arts and Literacy Skills

(2,0) 2

This course studies methods of teaching language arts as literate activity and the use of a research base for the social context of children's learning. Emphasis is on the emergence of literacy in elementary students. Fieldwork required. Prerequisites: EDUC415, admission to teacher education program.

Source: Academic Catalog 2020-21

EDUC420

Math Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies that facilitate effective mathematics instruction. Students develop and present mathematics lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. Prerequisites: MATH103, MATH104, EDUC415 and admission to teacher education program.

Source: Academic Catalog 2020-21

EDUC421

Science Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies that facilitate effective science instruction. Students develop and present science lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. EDUC415 and admission to teacher education program.

Source: Academic Catalog 2020-21

EDUC422

Social Studies Methods for Elementary Teachers

(2,0) 2

This course studies strategies and methodologies to facilitate effective social studies instruction. Students develop and present social studies lessons and units using national, state and local standards in planning instruction and assessment. Emphasis is placed on effective integration of technology in learning and assessment. Fieldwork required. Prerequisites: EDUC415 and admission to teacher education program.

Source: Academic Catalog 2020-21

EDUC423

Arts Methods for Classroom Teachers

(2,0) 2

Elementary teacher candidates examine the knowledge, understanding, and application of the content, functions, and achievements of dance, music, theatre, and the visual arts to promote elementary students' ability to create, perform and respond in and through the arts. Candidates demonstrate their understanding that all students can learn the knowledge and skills that make up the arts.

Source: Academic Catalog 2020-21

EDUC424

Health/Physical Methods for Classroom Teachers

(2,0) 2

Elementary teacher candidates demonstrate the knowledge, understanding, and application of research-based strategies to create opportunities for all students to develop critical knowledge, skills, and behaviors that contribute to life-long health. Candidates demonstrate knowledge and understanding through planning and appropriate implementation of effective past and current research-based human movement and physical activity strategies as central elements to foster active, life-long healthy lifestyles for all elementary students.

Source: Academic Catalog 2020-21

MATH251

Calculus III

(4,0) 4

Three-dimensional space, vectors, vector-valued functions, partial differentiation, multiple integration, topics in vector calculus. Prerequisite: MATH152 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH216

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: MATH215 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH305

Linear Algebra

(3,0) 3 Alternate Years

An introduction to matrix algebra, vector spaces and linear transformation, including applications to the natural and social sciences. Prerequisites: MATH112 or MATH151 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH309

Applied Statistics

(4,0) 4

A continuation of MATH308 including estimation of parameters, testing hypotheses, nonparametric methods, analysis of variance, multiple regression and an introduction to statistical software packages. Prerequisite: MATH308 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH310

Differential Equations

(3,0) 3

Differential equations of first order, linear differential equations of second and higher orders, including Laplace transformation. Introduction to power series methods, applications. Prerequisite: MATH152 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH341

Abstract Algebra I

(3,0) 3

An introduction to congruencies, groups, subgroups, quotient groups, fundamental homomorphism theorems, Sylow theorems. Prerequisite: MATH215 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH351

Graph Theory

(3,0) 3 Alternate Years

Selected topics in graph theory, including connectivity, matchings, edge and vertex colorings, networks and tournaments.
Prerequisite: MATH216 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH401

Mathematical Modeling

(3,0) 3 Alternate Years

Selected applications of mathematics in such areas as biology, economics, social science and engineering are discussed. The construction of a mathematical model used to study a real situation will be stressed, as well as interpretation of mathematical results in that context. Prerequisites: junior/senior standing, a course in computer programming, and mathematical maturity at the level of MATH305, 308 or 310 with a minimum grade of C.

Source: Academic Catalog 2020-21

MATH411

Advanced Topics in Calculus

(3,0) 3 Alternate Years

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: MATH251 and 310 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH490

Individualized 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 nine credits. Prerequisite: Junior standing or higher and Permission of Instructor.

Source: Academic Catalog 2020-21

CSCI103

Survey of Computer Science

(3,0) 3

An introduction to the field of computer science for computer science, computer networking, and web development majors. Applications, history of computing, computer networks and the Internet, programming, hardware, theory of computation, algorithms, fundamental concepts in computing.

Source: Academic Catalog 2020-21

CSCI105

Introduction to Computer Programming

(2,2) 3

An introductory course in computer programming in a graphical development environment, intended for students with no prior computer programming experience. Arithmetic, control structures and simple data structures. Sound, graphics and animation techniques. Prerequisite: MATH088 or equivalent/satisfactory score on SAT, ACT or Placement Exam.

Source: Academic Catalog 2020-21

CSCI121

Principles of Programming

(4,0) 4

A broad-based introduction to computer programming, using the C++ programming language and basic operating system features as vehicles. Basic programming principles, including built-in and programmer-defined data, operators, functions and control structures. Introduction to classes and dynamic memory allocation. Text manipulation and parsing, binary files, and exception handling. C-style input and output. Applications will be drawn from across the discipline of computer science. Prerequisite: CSCI105 and MATH102 (or equivalent math placement) with a grade of C or better in both classes.

Source: Academic Catalog 2020-21

CSCI106

Web Page Design and Development

(2,2) 3

Topics include planning a web site starting with domain name registration and selection of hosting service providers, creating web page using HTML/XHTML and cascading styles sheets; validating web pages; using web authoring tools such as Dreamweaver; publishing web pages to a remote web server, introductory web site design, including best practices for inserting graphics, page layout, building the web site navigation and user interface, integration of third-party and Web 2.0 tools and software, implementing web and accessibility standards, ethical and legal issues such as copyright and trademarks.

Source: Academic Catalog 2020-21

MATH325

College Geometry

(2,2) 3 Alternate Years

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: MATH215 with a grade of C or better.

Source: Academic Catalog 2020-21

EDUC442

Math Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific mathematics content. Students develop and present math lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

Source: Academic Catalog 2020-21

EDUC452

Directed Study in Math Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific mathematics content. Students develop and present mathematics lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC442. Prerequisite: EDUC415 or EDUC430.

Source: Academic Catalog 2020-21

FINC341

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: ACTG133 and MATH111.

Source: Academic Catalog 2020-21

BIOL206

Medical Laboratory Practices

(2,0) 2

Covers fundamental principles of medical laboratory science including safety, specimen handling, measurement, common calculations, organization of the medical laboratory, automation, and quality control. Prerequisites: MATH111, CHEM115, BIOL131.

Source: Academic Catalog 2020-21

BIOL460

Clinical Internship

3 or 9

A six-month internship experience in a clinical laboratory. This course is open only to students in the Medical Laboratory Science Major, Clinical Concentration. Students will be placed at one of LSSU's affiliate clinical sites. There they will perform routine analyses of clinical specimens under the supervision of clinical site personnel. Students will be trained in chemical, hematological, microbiological, coagulation, and blood bank analyses. Prerequisites: BIOL380, BIOL406, BIOL423, BIOL455, BIOL480 and Permission of Course Director. Variable credits, 3 or 9; must be repeated once for a maximum of 12 credits.

Source: Academic Catalog 2020-21

NURS211

Introduction to Professional Nursing

(3,0) 3

This course introduces the student to a theoretical foundation for professional nursing practice. It focuses on nursing's historical origin, and its development throughout the years to present. Concepts discussed include nursing and related theories, the nursing process, legal/ethical issues and other topics relevant to the practice of professional nursing.

Prerequisite: permission of dean or instructor only.

Source: Academic Catalog 2020-21

NURS212

Health Appraisal

(2,6) 4

This course serves as an introduction to the nursing assessment and analysis component of the nursing process as a method of determining an individual's health potential and status across the lifespan. Emphasis is on obtaining and documenting a health history, performing a nursing assessment and beginning to formulate a nursing diagnosis.

Prerequisite: permission of dean or instructor only.

Source: Academic Catalog 2020-21

NURS213

Fundamentals of Nursing

(3,9) 6

This course provides a theoretical and clinical foundation upon which science is applied to clients experiencing common health stressors. Emphasis is placed upon collecting relevant data, formulating nursing diagnosis based on the data, implementation of both appropriate nursing interventions and related psychomotor nursing skills. Responsibilities as a health team member who displays caring behaviors and as a self-directed learner are also considered. Prerequisites: NURS211, NURS212. Pre- or corequisite: HLTH208, HLTH209, HLTH232, and BIOL223 or BIOL204.

Source: Academic Catalog 2020-21

NURS325

Nursing of Childbearing Families

(3,6) 5

Theoretical and clinical foundation for application of the nursing process in caring for childbearing families. Focus on: norms and complications of the childbirth experience with application of strategies to promote health and prevent complications related to pregnancy and childbirth. Prerequisite: NURS327. Corequisite: NURS326. Pre-or Corequisite: NURS/HLTH328.

Source: Academic Catalog 2020-21

NURS326

Nursing of Children and Families

(3,6) 5

Theoretical and clinical foundation for application of nursing process in caring for children and their families. Emphasis: health promotion, maintenance and restoration with application of principles and concepts related to growth and development, family theory, environmental influences on health and the nursing process. Prerequisite: NURS327; Corequisite: NURS325. Pre- or Corequisite: NURS/HLTH328.

Source: Academic Catalog 2020-21

NURS327

Adult Nursing I

(4,12) 8

Combined class and clinical experiences that apply the concepts of nursing and related theories to the care of the adult client with common health alterations in each of the basic human need areas. Nursing clinical experiences are in primary, secondary, and tertiary care settings for adult clients. Prerequisites: NURS213, HLTH209 and BIOL223 or BIOL204.

Source: Academic Catalog 2020-21

NURS431

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: HLTH328, NURS325, NURS327, NURS326. Corequisite: NURS435.

Source: Academic Catalog 2020-21

NURS432

Nursing of Populations

(3,6) 5

This is a theory and clinical course applying the nursing process to populations. Content includes application of public health nursing principles, levels of prevention, epidemiology and health education. Expands the role of the nurse as a teacher, collaborator and advocate. Examines the effect of health care delivery trends and issues on the health of populations. Prerequisites: For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326. Post-licensure Majors (RN-BSN): NURS363 and NURS365.

Source: Academic Catalog 2020-21

NURS433

Community Mental Health Nursing

(3,6) 5

Theoretical and clinical foundation in mental health nursing. Emphasis is on the use of the therapeutic relationship and communication skills to help clients cope with stressors of life experiences. Nursing, human needs theory, stress adaptation theory are used to help the client achieve optimum level of mental health. Clinical experiences are provided in both the community and in the acute care settings. Prerequisites: HLTH328, NURS325, NURS326, NURS327.

Source: Academic Catalog 2020-21

NURS434

Nursing Research

(3,0) 3

This course develops appraisal skills of nursing and related research. It will enable students to think critically and ethically about providing the best possible care to clients based on evidence. Assignments and class discussion emphasize application of current research to a variety of dimensions including human beings, health, nursing and environment. Co-requisite: NURS327, MATH207 or PSYC210.

Source: Academic Catalog 2020-21

NURS435

Management in Nursing

(4,0) 4

Analysis of the leadership and management roles in professional nursing; focus is leadership/management theories basic to the planning, organizing, directing and controlling of nursing services in health care settings. Includes concepts of nursing model integration in management, communications, decision making and conflict resolution, resource management, legal and ethical responsibilities, employee relations, health care system design, systems appraisal, and case management. Students will formulate a personal nursing management/leadership philosophy. For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326, Corequisite NURS431.

Source: Academic Catalog 2020-21

NURS436

Contemporary Issues in Nursing

(2,0) 2

Course analyzes contemporary and future issues involving the professional nurse. The course further explores role socialization from nursing student to BSN-prepared nurse. Course reviews the legal responsibilities and professional regulation of nursing practice. Selected social, ethical, political, economic and legal issues will be examined. Prerequisite: For Pre-licensure BSN Majors: HLTH328, NURS325, NURS327, NURS326. For Post-licensure Majors (RN-BSN): NURS360.

Source: Academic Catalog 2020-21

BIOL223

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: CHEM105 or CHEM110 and BIOL122. Does not apply towards a major or minor in biology.

Source: Academic Catalog 2020-21

CHEM110

Applied Organic & Biochemistry

(3,2) 4

A continuation of concepts presented in CHEM108 with an emphasis on the fundamentals of organic and biochemistry. The interrelationships between the metabolic processes of living systems are discussed along with their underlying chemical reactions. Prerequisite: CHEM108 or equivalent, with a grade of C- or better.

Source: Academic Catalog 2020-21

HLTH208

Principles of Human Nutrition

(3,0) 3

Fundamentals of human nutrition and nutrition therapy are presented in relation to human body function in wellness and illness. With a special focus across the lifespan, content from this course begins to build a foundation for the interpretation of diet regimes and diet formulations for patients with nutritional needs. This course is required for all nursing students. Prerequisites: BIOL122 or BIOL105 with a grade of C or better.

Source: Academic Catalog 2020-21

HLTH209

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: BIOL122 or 105 and CHEM105.

Source: Academic Catalog 2020-21

HLTH232

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: BIOL122.

Source: Academic Catalog 2020-21

HLTH235

Healthcare Informatics

(2,0) 2

The purpose of this course is to gain a basic understanding of nursing informatics and its application to education, research and practice in health care professions. Topics include computer literacy skills, information literacy, and overall informatics competencies. Competencies taught will meet the American Nurses Association Scope and Standards of Nursing Informatics Practice (ANA, 2001) for beginning nurses. Prerequisites: Admission into Nursing program and basic computer skills.

Source: Academic Catalog 2020-21

NURS328

Multicultural Approaches to Health Care

(3,0) 3

This course explores values, beliefs and practices related to health behaviors in a variety of culturally diverse groups. Methods for fostering culturally sensitive care are explored. Content includes communication, biological and nutritional considerations, assessment techniques and alternative/complementary health practices. Prerequisite: SOCY101. Also listed as HLTH328.

Source: Academic Catalog 2020-21

NURS352

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. Prerequisites: PSYC155 and junior level status. Also listed as HLTH352.

Source: Academic Catalog 2020-21

NURS360

Professional Nursing Concepts

(4,0) 4

This four-credit course is the transitional course into professional nursing for the practicing registered nurse. Course emphasis: concepts of professional nursing, nursing and other related theories, health promotion, using research in nursing practice, impact of technology on profession, and economics related to nursing care. Includes: the history of nursing, ethics, culture, and critical thinking are interwoven in the exploration of concepts. Prerequisite: Permission of dean or instructor only. For Post Licensure majors (RN-BSN) only.

Source: Academic Catalog 2020-21

NURS363

Individual/Family Assessment

(3,6) 5 5

This course is directed toward the application of theoretical Nursing concepts related to assessment of the individual and family health, development, structure and dynamics through the lifespan. Emphasis is on the principles of factors influencing family health care, comprehensive health history taking, physical assessment skills, and analysis of data to determine an individual's or family's health status. For Post Licensure majors (RN-BSN) only. Pre- or corequisite: NURS360.

Source: Academic Catalog 2020-21

NURS437

Nursing Leadership and Issues

(2,3)3 3

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 student planning his/her experiences with the faculty member and preceptor. Integration of ethics, research, change, caring, advocacy, and approaches to ensure quality care in nursing practice are expected.

Source: Academic Catalog 2020-21

POLI101

Freshman Seminar

(2,0) 2

The focus of this course will be on academic skills, orientation to Lake Superior State University and Sault Ste. Marie, and introduction to the field of Political Science.

Source: Academic Catalog 2020-21

POLI202

Sophomore Seminar on Political Research and Statistics

(3,0) 3

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. Prerequisite: MATH088 or equivalent/satisfactory score on ACT, SAT, or Placement Exam.

Source: Academic Catalog 2020-21

POLI303

Junior Seminar

(4,0) 4

A junior seminar required of all political science majors. The course examines the history of political science, careers in political science, and reviews contemporary approaches and recent research. Students prepare a research proposal to be carried out in POLI404 and POLI405. Prerequisites: Political science major and junior standing.

Source: Academic Catalog 2020-21

POLI351

Political Philosophy

(4,0) 4

An examination of the seminal authors and theories of political philosophy. Major philosophers include Plato, Aristotle, Cicero, Augustine, Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Burke, Mill, Hegel, Marx, Wollstonecraft, Arendt and Rawls. Major ideologies include conservatism, liberalism, socialism, communism, anarchism, fascism, and feminism. Prerequisites: POLI110 and junior or senior standing; or permission of instructor.

Source: Academic Catalog 2020-21

POLI404

Senior Seminar I

(2,0) 2

Implementation of project proposal begun in POLI303. Student will make weekly reports on progress of methodology and data collection to faculty and class. Prerequisite: POLI303.

Source: Academic Catalog 2020-21

POLI405

Senior Seminar II

(2,0) 2

Completion of the project begun in POLI404. Students will make oral presentations of their project results at the end of the course to other students, faculty and invited guests. Prerequisite: POLI404.

Source: Academic Catalog 2020-21

POLI325

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: POLI110 and junior standing.

Source: Academic Catalog 2020-21

POLI367

Congress and the Presidency

(4,0) 4

Examines the legislative and executive branches of government as parts of the policy-making process. Prerequisite: POLI110.

Source: Academic Catalog 2020-21

POLI467

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: POLI120 or its equivalent.

Source: Academic Catalog 2020-21

POLI331

Comparative Politics of Europe

(3,0) 3

An examination of institutions and politics in major European states, such as Great Britain, France, Germany and Russia, and the European Union. Prerequisite: POLI110 or POLI160.

Source: Academic Catalog 2020-21

POLI245

United Nations and World Politics

(3,0) 3

This course provides a general overview of the United Nations and how world politics both influences, and is influenced by, the actions of the United Nations. Prerequisite: POLI241 or permission of instructor.

Source: Academic Catalog 2020-21

POLI411

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: POLI110.

Source: Academic Catalog 2020-21

POLI413

The International Legal Order

(4,0) 4

The primary objective of this course is to explore the reasons for the emergence of the international legal order as a crucial constraint on the freedom of action of national governments; that is, to understand the impact of the international legal order on contemporary international relations. It also seeks to introduce the substance of international law in selected issue-areas, and to provide an overview of the nature of international legal reasoning. Throughout the course, we shall emphasize the interaction of law and politics, and of national and transnational legal processes. Prerequisite: POLI110.

Source: Academic Catalog 2020-21

POLI420

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: POLI110 or 160, and junior standing, as well as either ECON201 or 202. POLI241 recommended but not required.

Source: Academic Catalog 2020-21

ENGL306

Technical Writing

(3,0) 3

Technical writing is designed to introduce students to the theory and practice of technical communication. This course incorporates a broad approach, addressing the issues of critical thinking, collaboration, ethics, and the persuasive presentation of technical information in both written documents and oral presentations. The specific documents that will be covered include memos, formal business letters, technical descriptions, short and analytic reports, proposals and formal oral presentations. The central focus of the course will be the completion of a discipline-specific final project, in which the technical communication skills learned during the course will be enhanced. A major goal of this project, and the class, is to introduce students to the demands of their chosen professions, and thereby prepare them for the kinds of disciplined intellectual and practical work they will be required to complete. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

POLI120

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.

Source: Academic Catalog 2020-21

POLI222

Introduction to the Legal Profession

(3,0) 3

Students will become familiar with how the law functions, how the legal profession has evolved, how to prepare for and apply to law school, how law schools differ from college (including development of various methods and techniques to study the law). In addition, students will become aware of the legal profession and its demands, opportunities, options and trends. Prerequisites: POLI110, sophomore standing and/or permission of instructor. Also listed as LAWS222.

Source: Academic Catalog 2020-21

ACTG132

Principles of Accounting I

(4,0) 4

An introduction to the principles and procedures of accounting as applied to proprietorships and corporations. Areas of study include the accounting, internal control and the asset, liability and equity sections of the balance sheet. Prerequisite: Two years of high school algebra and equivalent/satisfactory score on ACT/SAT or Placement Exam or MATH102 with a grade of C or better.

Source: Academic Catalog 2020-21

LAWS102

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.

Source: Academic Catalog 2020-21

LAWS202

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: LAWS102.

Source: Academic Catalog 2020-21

BUSN350

Business Law I

(3,0) 3

This portion of business law covers the law applicable to contracts, sales, personal property and bailments.

Source: Academic Catalog 2020-21

BUSN355

Business Law II

(3,0) 3

This portion of business law covers the law applicable to commercial paper, corporations, partnerships, agency and employment.

Source: Academic Catalog 2020-21

CJUS250

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.

Source: Academic Catalog 2020-21

CJUS319

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: CJUS101.

Source: Academic Catalog 2020-21

CJUS409

Procedural Criminal Law

(3,0) 3

Principles, duties and mechanics of criminal procedures as applied to important areas of arrest, search and seizure.
Prerequisite: CJUS319; or permission of MCOLES Director.

Source: Academic Catalog 2020-21

INTB375

International Business Law

(3,0) 3

The course provides an introduction to the environment of international business and law. It will focus on the foundations and principles of the international legal environment and international legal systems. The course covers the law on international trade. It allows the student to understand government foreign trade policies, the law concerning international business transactions, importing, exporting, transportation and logistics. This course covers a range of legal issues involved in conducting international business, surveying some of the many issues encountered in intellectual property and licensing, and the taxation of international business transactions.

Source: Academic Catalog 2020-21

MGMT 451

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.

Source: Academic Catalog 2020-21

POLI499

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.

Source: Academic Catalog 2020-21

POLI401

Principles of Public Administration

(3,0) 3

Examines major issues and methods in public administration. Analysis of specific public policy issues. Prerequisite: Advanced standing.

Source: Academic Catalog 2020-21

ECON305

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: ECON201 or 202.

Source: Academic Catalog 2020-21

MGMT365

Human Resource Management

(3,0) 3

An examination of current practices and recommended techniques by which management procures, develops, utilizes and maintains an effective work force. The major areas studied are: recruitment and selection, equal employment opportunity and affirmative action programs, training and development, career planning and performance appraisal, compensation and benefits, safety and health issues, employee and labor relations, including grievance handling, contract negotiation and remaining union-free as an organization. Prerequisite: Junior standing.

Source: Academic Catalog 2020-21

HIST315

Europe From Napoleon to World War I

(4,0) 4 Fall, even-numbered years

A study in the political and economic history of Europe in the period 1789-1914.

Source: Academic Catalog 2020-21

HIST316

Europe in the 20th Century

(4,0) 4 Spring, odd-numbered years

A study of Europe in the age of Nazism, Communism, World War I and II, and the Common Market.

Source: Academic Catalog 2020-21

HIST250

The Atlantic World

(3,0) 3

From the late 15th through the 18th centuries, the continents bordering the Atlantic Ocean were thrust into interaction. Europeans, Africans, and indigenous peoples negotiated diverse new societies through both confrontation and cooperation. This course explores interconnections through histories of Europe, Africa, North America, and the Caribbean, demonstrating the associations between peoples and nations within a global context. Prerequisite: HIST101 or HIST131. Spring odd-numbered years.

Source: Academic Catalog 2020-21

HIST441

History of American Foreign Policy, 1776-1950

(3,0) 3

This course examines US Foreign Policy from 1776 to 1950, with some consideration to the 1607-1776 era. The course investigates US conduct in war and diplomacy, issues of cultural contact, impact of domestic politics on foreign policymaking, the organization political economy, and problems of American Imperialism. Prerequisite or Co-requisite of the HIST131, HIST132 sequence or POLI110.

Source: Academic Catalog 2020-21

PSYC199

Freshman Seminar in Behavioral Science

(2,0) 2

An introduction to the university including academic policies and procedures, campus resources, and requirements for the major. Instruction in time management, study skills, and test-taking skills will be provided. Careers and speciality areas within behavioral science will be explored. An introduction to behavioral science epistemology including the process of knowledge generation and comparison of behavioral science with other core disciplines such as the physical sciences and humanities with respect to foundations, scope and validity of knowledge. An examination of ethical theories and professional codes relevant to the behavioral sciences.

Source: Academic Catalog 2020-21

PSYC210

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. MATH207 may be used in place of PSYC210 to meet the psychology major and minor requirements. Prerequisite: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

PSYC212

Experimental Psychology

(3,2) 4

An examination of the basic research methods employed in the social sciences with emphasis on the experiment. Topics: Epistemology, laboratory experiments, field experiments, survey construction, correlational research. Students will each participate as a subject and an experimenter, collect data, analyze data, and write a laboratory report according to the editorial style of the American Psychological Association. Laboratory assignments require use of computer applications for experimental purposes, including running experiments and collecting data, analyzing results, creation of appropriate figures, and communication of results in text and oral presentations with slides. Prerequisites: PSYC101 and either PSYC210 or MATH207.

Source: Academic Catalog 2020-21

PSYC396

Tests and Measurements

(3,0) 3

This course has two parts. Part one covers measurement theory, the properties of the normal curve, reliability, validity and measurement statistics. Part two reviews major tests used by researchers, educators, clinicians, counselors, addictions counselors and industrial psychologists. Prerequisite: SOCY302 or PSYC210 or MATH207 or equivalent.

Source: Academic Catalog 2020-21

PSYC399

Junior Seminar in Psychological Science

(3,0) 3

Students develop a senior research topic through the review of scholarly literature and weekly meetings with psychology faculty and students engaged in senior research under the supervision of that faculty member. Key elements of the research process will be strengthened including experimental design, statistical analysis, and scientific communications. Different career paths in psychology will be explored along with guidance in pursuing graduate school. At the conclusion of this course, students will obtain approval with the faculty member who will serve as their senior research project advisor and declare which psychology track they will complete for their degree. Prerequisites: Minimum grade of C in PSYC210 and PSYC212.

Source: Academic Catalog 2020-21

PSYC456

History and Systems of Psychology

(3,0) 3

An examination of persons, events, theories, schools and systems that influenced and define contemporary psychology.
Prerequisite: PSYC311.

Source: Academic Catalog 2020-21

PSYC494

Senior Research Practicum I

(0,2) 2

A practicum under the guidance of a faculty mentor. The student will complete the senior research project proposal and secure approval from the appropriate ethics board/committee. Prerequisite: PSYC399 with a B- or better grade. Co-requisite PSYC499 AND permission of instructor.

Source: Academic Catalog 2020-21

PSYC495

Senior Research Practicum II

(0,3) 3

A practicum under the guidance of a faculty mentor. The student will conduct an empirical research project based on the proposal submitted by the student in PSYC494. Prerequisite: PSYC494, PSYC499 and permission of instructor.

Source: Academic Catalog 2020-21

PSYC499

Senior Seminar in Psychological Science

(1,0) 1

Issues in the development and implementation of an empirical research project, including design, statistical analyses, ethical review, and modes of presentation. Prerequisite: PCYC399 with a B- or better grade. Co-requisite: PYSC494 AND permission of instructor.

Source: Academic Catalog 2020-21

PSYC459

Behavioral Neuroscience

(3,3) 4

This course is an introduction to the neurophysiological structures of the brain and their functions as regulators of animal and human behavior. Experiential learning activities related to the lecture content consisting of experimental techniques, computer simulations, data collection, analysis, and reporting of results in APA style are included. Prerequisite: PSYC212 and Junior Standing.

Source: Academic Catalog 2020-21

PSYC311

Learning and Motivation

(3,3) 4

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. The laboratory will provide undergraduate research experiences that are closely related to the lecture content using live animal behavior experiments and/or computer simulations, data collections, analysis, and reporting of results in APA style. Prerequisite: PSYC212.

Source: Academic Catalog 2020-21

PSYC457

Cognition

(3,3) 4

A survey of recent findings on cognition in humans. Topics include learning, memory, problem solving, language and complex perceptual processes. The laboratory will provide undergraduate research experiences that are closely related to the lecture content consisting of experiments and/or computer simulations, data collection, analysis, and reporting of results in APA style. Prerequisite: PSYC212 and Junior Standing.

Source: Academic Catalog 2020-21

PSYC217

Social Psychology

(3,0) 3

Topics include attitude formation and change, interpersonal attraction, aggression, altruism, conformity and environmental psychology.

Source: Academic Catalog 2020-21

PSYC357

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.

Source: Academic Catalog 2020-21

PSYC240

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.

Source: Academic Catalog 2020-21

PSYC259

Abnormal Psychology

(3,0) 3

This course is a systematic investigation of the identification, dynamics and treatment of deviant and maladaptive behavior.

Source: Academic Catalog 2020-21

PSYC301

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: PSYC155 or 265.

Source: Academic Catalog 2020-21

PSYC385

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.

Source: Academic Catalog 2020-21

PSYC305

Psychology Research Practicum

(0,3) 3

Research in psychology under the direct supervision of individual faculty members. Recommended for students considering graduate school. Prerequisite: Minimum grade of C in PSYC210 and PSYC212, AND permission of instructor. May be repeated once for a max of 6 credits.

Source: Academic Catalog 2020-21

PSYC306

Applied Psychology Practicum

(0,3) 3

Students are provided practical experience in the use of psychological theory and research in an applied setting. Prerequisite: SOWK250 (minimum 3 credits), a minimum grade of B in PSYC201 AND permission of instructor. May be repeated for a max of 6 credits.

Source: Academic Catalog 2020-21

PSYC490

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.

Source: Academic Catalog 2020-21

ENGL336

Young Adult Literature and Culture

(3,0) 3

This course focuses on understanding the historical, cultural, and generic dimensions of young adult literature, with emphasis on critical reading, literary analysis, and selection and evaluation of culturally diverse texts for children and young adults. Prerequisite: ENGL180.

Source: Academic Catalog 2020-21

ENGL345

Studies in Classic Texts

(3,0) 3

Readings in literature, beyond North American traditions, that have possessed profound influence or reach throughout history, including theoretical and critical approaches to these texts, examining form, theme, and genre. Includes classic Greek drama, classic British literature from the Anglo-Saxon period through the twentieth century, Shakespeare, mythology, folklore, and world literature in translation. Prerequisites: ENGL111, ENGL180.

Source: Academic Catalog 2020-21

ENGL435

Studies in Visual Texts

(3,0) 3

Theoretical and critical approaches to visual texts, with the focus on graphic novels and film, examining form, theme, and genre and the production and interpretation of meaning in visual media. Prerequisites: ENGL111, ENGL180.

Source: Academic Catalog 2020-21

ENGL380

History of Literary Criticism

(3,0) 3

An investigation of the history of critical theory to include classicism, neoclassicism, romanticism, the New Critics and contemporary critical trends. This course prepares students for advanced studies in literature. Prerequisite: Either ENGL233 and ENGL234 or ENGL231 and ENGL232.

Source: Academic Catalog 2020-21

ENGL490

Senior Thesis I

(2,0) 2

In consultation with an English faculty member, students will gather research and produce a bibliography and research proposal, as well as begin writing the thesis. This course is an independent study. Prerequisites: Literature or English Education major, senior standing, and ENGL380 or EDUC415.

Source: Academic Catalog 2020-21

ENGL499

Senior Thesis

(2,0) 2

Completion of the thesis with focus on revising and editing of the final project. This course is an independent study.
Prerequisite: ENGL490.

Source: Academic Catalog 2020-21

EDUC441

English Language Arts Methods for Secondary Teachers

(3,0) 3

This course applies general instructional strategies and methodologies to specific language arts and English content. Students develop and present English lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Prerequisite: EDUC415 or EDUC430.

Source: Academic Catalog 2020-21

EDUC451

Directed Study in English Language Arts Methods for Secondary Teachers

(3,0) 3

This course, delivered in an independent research or directed study format under the supervision of a faculty member, applies general instructional strategies and methodologies to specific language arts and English content. Students develop and present English lessons and units using national, state, and local standards in planning instruction and assessment, with effective integration of instructional technology. Fieldwork required. Course will substitute for EDUC441. Prerequisite: EDUC415 or EDUC430.

Source: Academic Catalog 2020-21

HIST296

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: HIST101/HIST102 sequence or HIST131/HIST132 sequence. Fall.

Source: Academic Catalog 2020-21

HIST497

Senior Seminar in History

(0-6) 2

Students will complete a 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: HIST496 and instructor permission.

Source: Academic Catalog 2020-21

ACTG133

Principles of Accounting II

(4,0) 4

This course emphasizes the role of managerial accounting information within a firm. Topics include budgeting, responsibility accounting, cost allocations, cost behavior, decision models, product costing, cost control, performance evaluation, capital budgeting, cash flows and methods of financial analysis. Prerequisite: Grade of C or higher in ACTG132.

Source: Academic Catalog 2020-21

BUSN231

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: ENGL111.

Source: Academic Catalog 2020-21

BUSN403

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: ECON202 and junior standing.

Source: Academic Catalog 2020-21

BUSN466

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. Prerequisites: Senior status and FINC341.

Source: Academic Catalog 2020-21

MGMT280

Introduction to Management Information Systems

(3,0) 3

This course will introduce students to MIS theories including (1) Information Systems in Business and Society (information management in global society; security, privacy and ethical issues); (2) Information Technology Concepts (hardware technology, software technology, database management systems, network and internet technology); (3) Business Information Systems (automation and support systems, transaction processing systems, management information systems, decision support and expert systems, enterprise systems such as ERP); (4) Systems Development (systems investigation and analysis, systems planning development and implementation). Students will gain hands-on computer skills in advanced spreadsheet, database, and web technologies. Prerequisites: BUSN121 and ACTG132 with a grade of C or higher.

Source: Academic Catalog 2020-21

MGMT371

Operations and Business Analytics

(3,0) 3

This course introduces students to (1) Operations Management (operations strategy, operations design, operations planning & control, operations execution), (2) Supply Chain Management, and (3) Quantitative Business Analysis (linear programming, project scheduling including PERT and CPM, inventory modeling, statistical process control, queuing theory, simulation, decision analysis, time-series forecasting, advanced statistical analysis). Prerequisite: BUSN211 or equivalent.

Source: Academic Catalog 2020-21

ACTG232

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: ACTG132 and ACTG133.

Source: Academic Catalog 2020-21

ACTG233

Intermediate Accounting II

(4,0) 4

Continuation of ACTG232 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: Grade of C or higher in ACTG232.

Source: Academic Catalog 2020-21

ACTG332

Cost Management I

(4,0) 4

An advanced study of managerial accounting as it applies to management practices. Topics include job order and process costing systems, value chain management, activity based costing and management, joint product costing, CVP analysis, cost allocations, budgeting, and financial planning models, and allocation of support activity costs. Prerequisite: ACTG133.

Source: Academic Catalog 2020-21

ACTG333

Cost Management II

(4,0) 4

A continuation of ACTG332. Topics include strategic decision making, strategic issues in capital investment decisions, standard costing and variance analysis, performance evaluation and the balanced scorecard, responsibility accounting, investment centers and transfer pricing, target costing, theory of constraints, and strategic pricing, managing and controlling quality, management compensation, and business valuation. Prerequisite: ACTG332.

Source: Academic Catalog 2020-21

ACTG334

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: ACTG233, ACTG332, and introductory data processing course.

Source: Academic Catalog 2020-21

ACTG421

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: ACTG133 and Junior standing or approval of the department.

Source: Academic Catalog 2020-21

ACTG422

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: ACTG421.

Source: Academic Catalog 2020-21

ACTG427

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: ACTG233 and 333.

Source: Academic Catalog 2020-21

ACTG432

Advanced Accounting: Consolidations

(4,0) 4

This course involves a study of corporate business combinations and the preparation of related consolidated financial statements. International accounting issues related to the hedging of foreign currency transactions, translation of foreign financial statements and the application/comparison of international accounting standards will also be presented.

Prerequisite: ACTG233 with a grade of C or higher.

Source: Academic Catalog 2020-21

ACTG433

Advanced Accounting: Governmental

(4,0) 4

An introduction to governmental and nonprofit accounting as applied to state and local governments and other nongovernmental not-for-profit entities including colleges and universities, and health care organizations. Areas of study include both the source of GASB standards and statements and the application of this theory to the governmental accounting cycle. Students will also be exposed to and apply a variety of financial performance measures unique to this sector of the economy. Students will prepare a monthly transaction analysis and complete a governmental practice set. Prerequisite: ACTG233 with a grade of C or higher.

Source: Academic Catalog 2020-21

BUSN101

Freshman Seminar

(1,0) 1

This course will enable Business students to improve their academic skills, knowledge and utilization of Lake Superior State University (LSSU) services, familiarity with the unique local community of Sault Ste. Marie, understanding of the field of business, and individual professionalism in representing themselves as future businesspeople and LSSU advocates.

Source: Academic Catalog 2020-21

CHEM452

Advanced Biochemical and Molecular Techniques

(2,4) 4 Alternate Years

A course covering advanced laboratory techniques for manipulating and analyzing bio-polymers such as proteins and nucleic acids. A brief discussion of bioinformatics will be presented. Protein expression vectors, PCR, and modern molecular techniques will be explored with potential applications for chemistry, biology, toxicology, forensic, and clinical lab science. Prerequisite: CHEM351.

Source: Academic Catalog 2020-21

BUSN399

Internship in [Discipline]

(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 achieve the school approved learning objectives/outcomes established for the internship. Students are expected to spend a minimum of 45 hours (1 credit), 90 hours (2 credits), 135 hours (3 credits), or 180 hours (4 credits) in an appropriate work setting. This course may be repeated once for a maximum of four total credits. Prerequisite: 2.5 GPA, junior standing or higher, employee and instructor approval of the Dean.

Source: Academic Catalog 2020-21

BUSN389

Entrepreneurship

(3,0) 3

A study of individual small firms: start-up, on-going management, challenges, and requirements for success. Students will apply both strategic planning and the knowledge acquired from other business courses to (a) demonstrate understanding and competence in using S.A.P. in small business decision-making and operations, (b) develop a viable business plan for a new small business, and (c) utilize problem-solving for other local small businesses, where required, in an advisory capacity. Prerequisites: BUSN121, ACTG132 or ACTG230, MRKT281.

Source: Academic Catalog 2020-21

INTB486

International Marketing

(3,0) 3

The International Marketing course examines the scope, challenge and dynamic environment of international marketing. This course will provide an understanding of the cultural environment of global markets, global opportunities and the development and implementation of global marketing strategies. Challenging decisions must be made in international marketing objectives-strategies-policies, regional & country market selection, products that fit regions-countries, multiple distribution channels, communications to fit each global region, management models & organizations per region-country, knowledge-information-data management, exploration of cultural issues, competition, economies, and customers. Prerequisites: MRKT281 or permission of instructor.

Source: Academic Catalog 2020-21

MGMT380

Principles of Leadership

(3,0) 3

This course provides the student with an understanding of the principles and behaviors situationally appropriate to inspire and influence others. Whether people work individually, in small teams, task forces, or other units at all organizational levels; effective leadership sustains profitability, productivity, and excellent service. Studying research findings, leadership practices, and skills helps the student understand how this knowledge can be applied to effectively lead others.

Prerequisite: MGMT360.

Source: Academic Catalog 2020-21

MGMT 464

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: MGMT360.

Source: Academic Catalog 2020-21

MGMT 476

Employee Training and Development

(4,0) 4

This course provides the student with an understanding of how to prepare and deliver effective employee training. The course is in five parts: training and development needs analysis, program design, development, delivery, and evaluation. The principles and concepts learned are applied by preparing, delivering, and evaluating a three-hour training program. Prerequisite: Senior standing.

Source: Academic Catalog 2020-21

MRKT283

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.

Source: Academic Catalog 2020-21

MRKT387

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: MRKT281.

Source: Academic Catalog 2020-21

MRKT388

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. Prerequisite: MRKT281.

Source: Academic Catalog 2020-21

ECON408

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: ECON201 and 202.

Source: Academic Catalog 2020-21

INTB420

International Comparative Management

(3,0) 3

This course in international comparative management will examine important trends impacting international business as well as the major and developing players in the international economy. The course will examine the stage on which international management is conducted, which includes political, legal and socio-cultural systems as a backdrop. The course will cover how firms develop and execute their international strategies and how they stay ahead of their competitors, once they do. An important aspect for the success of international companies is HR (Human Resources). The course will explore how firms can build an outstanding international workforce through selecting and motivating employees as well as dealing with a host of related human resource management issues, such as compensation, performance appraisal, training and development and labor relations from an international perspective. Prerequisites: MGMT360 or special permission of instructor.

Source: Academic Catalog 2020-21

INTD310

Foreign Study

1-16 graded

Individual extension added based on student's program.

Source: Academic Catalog 2020-21

INTD410

Foreign Study

(3-16) 3-16

Individual extension added based on student's program. (Graded)

Source: Academic Catalog 2020-21

MGMT 469

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.

Source: Academic Catalog 2020-21

MRKT381

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: MRKT281.

Source: Academic Catalog 2020-21

MRKT480

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: BUSN211, MRKT281 and 381.

Source: Academic Catalog 2020-21

MRKT481

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. Prerequisites: MRKT281, 381, 480, and senior status.

Source: Academic Catalog 2020-21

CBUS122

Survey of Cannabis Business

(2,0) 2

The purpose of this course is to provide an overview of the history of cannabis from 2900 BC to modern day. Covering the use of cannabis and hemp and their historical agricultural and cultural importance, the prohibition of cannabis and subsequent cannabis law reform, and the inconsistencies in cannabis policy. The course will develop an understanding of Cannabis Industry, including an introduction to the types of businesses and products related to cannabis and hemp.

Source: Academic Catalog 2020-21

CBUS203

Cannabis Economics

(3,0) 3

The principles of economic reasoning as it applies to the Cannabis industry. Supply and demand, production and cost and the effect of price controls and public policy implications as it relates to the cannabis industry today. Prerequisites: Two years of high school algebra and equivalent/satisfactory score on ACT, SAT or Placement Exam or MATH102 with a grade of C or better.

Source: Academic Catalog 2020-21

CBUS305

Business of Cannabis Cultivation and Dispensary Operations

(3,0) 3

An introduction into the business side of various cultivation, harvesting and distribution methods. Costs, yield and labor requirements as well as benchmarking for the various methods will teach students how to increase the viability of a cannabis operation. Prerequisite: ACTG133.

Source: Academic Catalog 2020-21

CBUS360

Cannabis Law and Policy

(1,0) 1

This course is designed to teach students how state and federal laws are reformed in the United States. The course investigates the recent reform in State laws related to cannabis, how it was passed, and the effectiveness of the legislation. This course will examine the burgeoning field of law surrounding the use, management, sale and production of cannabis.

Source: Academic Catalog 2020-21

CBUS389

Cannabis Entrepreneurship

(3,0) 3

A study of individual small firms: start-up, on-going management, challenges, and requirements for success. Students will apply both strategic planning and the knowledge acquired from other business courses to (a) demonstrate understanding and competence in using S.A.P. in small business decision-making and operations, (b) develop a viable business plan for a new small cannabis business, and (c) utilize problem-solving for other local small businesses, where required, in an advisory capacity. Prerequisites: ACTG132 or ACTG230, BUSN 121 and MRKT281. This course is dual-listed with BUSN389.

Source: Academic Catalog 2020-21

CBUS466

Cannabis 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. A business plan for a cannabis enterprise will be developed as a capstone experience.

Prerequisites: Senior Status and FINC341. This course is dual-listed with BUSN466.

Source: Academic Catalog 2020-21

SOCY420

Sociology of Cannabis

(3,0) 3

This course focuses on the cultural importance, changes in use, and reactions to various forms of marijuana, as well as the differential effects of prohibition and legalization on both the individual and various social institutions. Prerequisite: Junior Status or permission of instructor. This course focuses on the cultural importance, changes in use, and reactions to various forms of marijuana, as well as the differential effects of prohibition and legalization on both the individual and various social institutions.

Source: Academic Catalog 2020-21

MRKT383

Digital Marketing

(3,0) 3

A study of the impact the Internet and other digital technologies have on the marketing of goods, services and ideas. The course will examine current e-marketing environment, strategy and management issues including consumer behavior, segmentation and targeting, differentiation and positioning, product, price, distribution, communication and customer relationship management. Ethical and legal issues will also be addressed. Prerequisite: MRKT281.

Source: Academic Catalog 2020-21

CCHM120

Cannabis Chemistry I

(1,0) 1

A course designed to introduce scientific literature regarding cannabis and explore the basic principles of cannabis chemistry.

Source: Academic Catalog 2020-21

CCHM240

Cannabis Plant Sample Preparation

(1,3) 2

A course in cannabis plant preparation for analytical chemical analysis, covering plant dehydration, digestion, and extraction of pertinent organic and inorganic chemical analytes for analysis on modern chemical instrumentation. Prerequisite: CCHM 120 and either CHEM 108/CHEM 109 or CHEM 115.

Source: Academic Catalog 2020-21

CCHM245

Cannabis Chemistry II

(1,0) 1

A course providing an advanced understanding of cannabis chemistry through discussion of current scientific literature and modern methods of chemical analysis. Prerequisite: CHEM 120.

Source: Academic Catalog 2020-21

CCHM350

Cannabis Chemistry III

(1,0) 1

An advanced course in cannabis chemistry in which students will utilize their understanding of chemical principles to comprehend, discuss, and present advances in cannabis chemistry identified in current scientific literature. Prerequisites: CCHM245 and CHEM225.

Source: Academic Catalog 2020-21

CHEM355

Medicinal Chemistry

(3,0) 3

Principles of medicinal chemistry and the role of drugs in disease treatment will be explored in this course. This course examines biological target identification, methods of drug discovery and development, and drug pharmacokinetics.

Prerequisite: CHEM 326, CHEM 351

Source: Academic Catalog 2020-21

CCHM440

Cannabis Separations Chemistry

(3,3) 4

An analytical chemistry course in cannabis separations chemistry, this course will cover various types of chromatography, including GCMS, LC, and LCMS and their application to cannabis analysis. The course will also cover the operation and maintenance of the modern chemical chromatography instrumentation. Prerequisite: CHEM 332 and CHEM 245.

Source: Academic Catalog 2020-21

CSCI201

Data Structures and Algorithms

(4,0) 4

An introductory course in data structures and algorithms, with an emphasis on abstraction, implementation and analysis. Advanced class concepts, including operator overloading, Linked lists, stacks, queues, trees and binary trees. Separate compilation and third-party libraries. Application of various data structures to problems selected from the spectrum of computer science topics. Prerequisites: CSCI121 with a grade of C or better and MATH111 (or equivalent math placement) with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI341

Discrete Structures for Computer Science

(4,0) 4 Alternate Years

Formal logic and proof techniques; recursion, recurrence relations and combinational methods; analysis of algorithms; algebraic structures; trees and graphs; Boolean algebra and computer logic; models of computation and formal languages. Emphasis will be on applications to computer science. Prerequisites: CSCI121 with a grade of C or better, and either MATH112 or 151 with a grade of C or better.

Source: Academic Catalog 2020-21

EGEE425

Digital Signal Processing

(2,2) 3 or (2,2,1)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: EGEE250, and EGEE 280 with a grade of C or better, EGNR140, and either EGNR265 or CSCI121.

Source: Academic Catalog 2020-21

CSCI434

Operating Systems Concepts

(3,0) 3 Alternate Years

Definition and historical development of operating systems. Characteristics of batch, interactive and multiprogramming systems. File systems, processor and memory management. Communication, concurrency, deadlock, protection, parallel and distributed systems. Case studies of modern operating systems. Prerequisite: CSCI201 with a minimum grade of C.

Source: Academic Catalog 2020-21

EGEE125

Digital Fundamentals

(3,2) 4

This course provides a study of numbering systems, Boolean algebra, optimization and reduction techniques, combinational logic, sequential digital logic, digital arithmetic, counters, multiplexers, demultiplexers, and microcomputer memory devices. Emphasis is placed on digital circuit design and contemporary programmable logic concepts. Prerequisite: EGNR101 or EGNR103. Pre or Corequisite: MATH111 and MATH131.

Source: Academic Catalog 2020-21

EGEE210

Circuit Analysis

(3,3) or (3,3,1) 4

This course is an introduction to the analysis of linear circuits. Topics include: basic circuit elements and their terminal relations, Kirchoff's laws, nodal analysis, mesh analysis, superposition theorem, Thevenin and Norton equivalent circuits, DC transient analysis of RC and RL circuits, phasors, sinusoidal steady-state response of RLC circuits and single-phase and three-phase AC power analysis. Prerequisites: MATH152, EGNR140 and one of the following: EGNR101 or 103.

Source: Academic Catalog 2020-21

EGEE250

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: EGEE125 with a C or better grade.

Source: Academic Catalog 2020-21

EGEE280

Introduction to Signal Processing

(4,0,0) or (4,0,1) 4

The course introduces mathematical techniques used in the design and analysis of analog and digital signal processing systems. Topics include complex numbers, phasor representation of sinusoids, spectral representations, convolution, frequency response, sampling and reconstruction, Fourier series and Fourier transform, and the use of MATLAB as a signal processing tool. Prerequisites: MATH152 and EGNR140.

Source: Academic Catalog 2020-21

EGEE320

Digital Design

(3,3) 4

A study of logical and electronic circuit design techniques including combinational and sequential circuits, programmable logic devices, MSI and LSI devices. Synchronous state machine design using computer-based tools is emphasized for control applications. Prerequisite: EGEE125 with a grade of C or better, and either EGNR265 or CSCI121.

Source: Academic Catalog 2020-21

EGEE355

Microcontroller Systems

(3,3) 4

A study of microcontroller systems design based on the 8/16/32-bit microcontrollers. Assembly and C languages are used for program development in the design of embedded systems. Interfacing techniques, real-time control, and microcontroller emulator use are emphasized. Prerequisites: EGEE250 and one of the following: EGNR265 or CSCI121.

Source: Academic Catalog 2020-21

EGEE370

Electronic Devices

(3,3) (3,3,1) 4

This course provides an in-depth study of the basic electronic devices. Topics include diodes, MOS field effect transistors, bipolar junction transistors as well as amplifier concepts such as gain, bandwidth, biasing and frequency response. Diode rectifiers, common amplifier configurations, digital CMOS logic circuits, latches, flip-flops and RAM cells are studied as applications of electronic devices. Prerequisites: EGEE125 with a C or better grade, EGEE210 with a C or better grade, and MATH152.

Source: Academic Catalog 2020-21

EGNR101

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: MATH102.

Source: Academic Catalog 2020-21

EGNR340

Numerical Methods for Engineers

(0,2) 1

This course addresses numerical methods for the solution of problems in linear algebra, numerical integration, root searching, linear and non-linear regression, ordinary and partial differential equations, and eigenvalue analysis. It emphasizes proficiency in independently programming algorithms for the simulation of physical systems with engineering applications, an understanding of how these algorithms work and are structured, and an appreciation for the value of computational efficiency in numerical methods. Prerequisites: EGNR140. Pre-or Corequisites: MATH310 and (CSCI121 or EGNR265).

Source: Academic Catalog 2020-21

EGNR346

Probability and Statistics Laboratory for Engineers

(0,2) 1

This laboratory accompanies MATH308, a calculus-based introduction to the basic theory of probability and statistics. Topics include methods of data collection, experimental design, interpretation of data and use of a statistical software tool. Prerequisite: EGNR140. Pre- or corequisite: MATH308.

Source: Academic Catalog 2020-21

CSCI281

Introduction to UNIX and Networking

(2,2) 3

An introduction to the UNIX operating system, shell scripting, and UNIX networking from the users perspective. Topics include basic and intermediate UNIX commands and file structure, regular expressions, BASH/CSH shell scripting, basic UNIX network setup, introduction to UNIX system daemons and networking services. Prerequisite: CSCI221 with a grade of C or Better.

Source: Academic Catalog 2020-21

EGEE310

Network Analysis

(4,0) 4

A continuation of EGEE210 with an emphasis on the systems approach to circuit analysis and design. Topics include the Laplace transform, transfer functions, frequency response, Fourier series, filter design, and op-amps. Prerequisites: EGEE210, EGEE280. Pre- or corequisite: MATH310.

Source: Academic Catalog 2020-21

EGEM220

Statics

(3,0) or (3,0,1) 3

A study of theory and application of engineering mechanics principles with emphasis on vector analysis, free body diagrams, properties of areas, and problem solving. This emphasis includes applying principles of equilibrium to particles and rigid bodies. Prerequisite: EGNR140. Pre, or Corequisites: MATH152 and PHYS231.

Source: Academic Catalog 2020-21

EGME275

Engineering Materials

(3,0) 3

A study of the physical structure of engineering materials, including metals, ceramics, polymers, and composites, as well as their properties and applications. Failure modes of materials, such as corrosion, fatigue, plastic deformation, and brittle failure, are also covered. For metal alloys, there is an emphasis on the interpretation of phase diagrams and time-temperature-transformation diagrams. Prerequisite: CHEM115 or (CHEM108 and CHEM109). Pre- or corequisite: EGME225 or EGMT225.

Source: Academic Catalog 2020-21

EGET310

Electronic Manufacturing Processes

(3,3) 4

This course will cover traditional and modern techniques for the design, fabrication, and testing of electronic circuit boards. Traditional techniques include wire cutting and stripping and manual and wave soldering. Modern techniques include the routing of multilayer surface mount boards, solder paste stenciling and dispensing, pick-an-place assembly and programming, reflow oven soldering, and rework techniques. Additional topics may include mechanical mounting, assembly line coordination, cell manufacturing, and potting and sealing materials. Prerequisites: either (EGET110 and EGET175) or EGEE210.

Source: Academic Catalog 2020-21

EGRS365

Programmable Logic Controllers

(2,3) 3

An introduction to programmable logic controllers (PLC) with an emphasis on programming of the controller and operator interface. Standard PLC devices (bits, timers, counters etc.) and controller functions dealing with math, compare, moves, program flow, analog input, and high-speed counters will be covered in the course. Written and oral business communications are an integral part of the course. Co or prerequisites: EGNR265 or EGEE125 or CSCI121 and sophomore status.

Source: Academic Catalog 2020-21

EGRS460

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: MATH310, EGEM220 and EGEE210. Pre- or co-requisite: EGNR340.

Source: Academic Catalog 2020-21

EGRS385

Robotics Engineering

(3,3) 4

An introduction to the field of robotics engineering. Topics include classification of robotic manipulators, accuracy and repeatability, wrists and end-effectors, actuators and sensors, homogeneous transformations, Denavit-Hartenberg convention, forward kinematics, inverse kinematics, trajectory planning and an introduction to velocity kinematics. Laboratory exercises will focus on the operation and programming of industrial robots and robotics simulation using industry standard software. Prerequisites: EGNR265 or CSCI105, and MATH251.

Source: Academic Catalog 2020-21

EGRS430

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: MATH152 or EGNR245, EGNR140, EGRS381 or EGRS385, and EGNR265 or CSCI121.

Source: Academic Catalog 2020-21

EGRS435

Automated Manufacturing Systems

(2,3) 3

A study and analysis of the components of an automated manufacturing system. Topics include analysis of flow lines, automated assembly systems, MRP, materials requirement planning, production economics and CIM. Course work will include applications of manufacturing systems software including factory simulation. Laboratory work will focus on systems integration, advanced programming of industrial robots, and flow line automation. Prerequisites: EGRS385.

Source: Academic Catalog 2020-21

EGNR261

Energy Systems and Sustainability

(3,0) 3

The course provides an introduction to energy conversion systems and discusses issues related to the sustainability of each system. Topics include basic energy definitions, traditional energy resources and reasons for pursuing alternative energy resources, renewable and nonrenewable energy resources, energy storage, and electrical grid integration. Topics also include policy as well as social, economic, and environmental sustainability issues as they relate to energy conversion. Prerequisite: MATH102 or equivalent.

Source: Academic Catalog 2020-21

EGNR361

Energy Systems and Sustainability Lab

(0,3) 1

The course explores the technical and implementation aspects of sustainable energy systems. Students will design, construct, and/or analyze various energy conversion systems. They will also design and implement subsystems that can store energy and construct connections between energy sources, energy storage subsystems, and the electrical grid. Prerequisites: (CHEM108 or CHEM115), (EGET110 or EGEE210), MATH131 or higher, excluding MATH207, (PHYS221 or PHYS231); Pre/Corequisite: EGNR261.

Source: Academic Catalog 2020-21

EGEE330

Electro-Mechanical Systems

(3,3) 4 or (3,3,1) 4

A study of three-phase circuits, electro-mechanical energy conversion, transformers, AC and DC machines, motor drives, and controlled converters. The laboratory activities include planning and conducting tests of electrical machines, and simulation with physical modeling software. Prerequisite: EGEE210 with a grade of C or better, EGNR140, and MATH152.

Source: Academic Catalog 2020-21

EGEE411

Power Distribution and Transmission

(3,0) 3

This course provides an introduction to the analysis and design of systems that carry electrical power from the point of generation to the point of use. Topics include mathematics and techniques of power flow analysis, ground-fault analysis, transient stability analysis, analysis of large power system networks, and the use of power system simulation software.

Prerequisites: MATH152, EGEE210, and EGEE280.

Source: Academic Catalog 2020-21

EGEE475

Power Electronics

(3,3) 4

This course provides an introduction to electrical power processing. The general topics include various electronic power switching circuits including: AC-DC rectifiers, DC-DC converters and DC-AC inverters. Additional topics include applications of power switching circuits as well as characteristics of power semiconductor devices. Prerequisites: EGEE280, EGEE370, and MATH251.

Source: Academic Catalog 2020-21

EGNR362

Vehicle Energy Systems

(2,3) 3

An introduction to vehicle power train energy systems and both battery and fuel cell electric/hybrid systems. Other topics include vehicle drive profile calculations, torque and speed coupling, and safety considerations. Vehicle topics also include cars, trucks, and off-road hybrid systems. Laboratory activities include CAN and other communication and information systems, and vehicle performance analysis and simulations using Excel, Simulink, and CANoe. Lab activities include using the chassis vehicle dynamometer with external instrumentation, CAN and OBD-based data acquisition. Prerequisites: (PHYS221 or PHYS231), (EGEE210 or EGET110) and pre/corequisite: (EGNR265 or CSCI121).

Source: Academic Catalog 2020-21

EGNR491

Engineering Design Project I

(2,3) 3

This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, ethics, timelines, resource allocation, project management and performance evaluations. Skills in oral and written communications, problem conceptualization, creative problem solving and technical presentations are developed. Prerequisites: Permission of instructor on the basis of senior status and expected graduation on or before December of the following calendar year, and one of the following: EGEE320 or EGEE370 or EGME350 or (EGRS365 and EGMT310). Students who plan to take EGNR491 and EGNR495 must complete both in the same academic year.

Source: Academic Catalog 2020-21

EGNR495

Engineering Design Project II

(1,6) 3

A continuation of EGNR491. This course provides students with the skills necessary for successful completion of their design project. Topics include group dynamics, engineering economics, 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: EGNR491. The dropping or failing of EGNR495 will result in the student having to repeat both EGNR491 and 495.

Source: Academic Catalog 2020-21

EGNR250

Cooperative Education

-2 2

A practicum in which students work in a supervised engineering capacity (on site) with industry. The student is expected to work at least 6 hours per week in an industrial setting. The student's experience must be related to his/her academic studies and thus this experience contributes significantly to his/her professional development. May be repeated for a maximum of 4 credits. Prerequisite: Permission of Instructor.

Source: Academic Catalog 2020-21

EGNR450

Cooperative Education Project I

-4 4

A practicum in which students work in a supervised engineering capacity (on site) with industry. This is the first of a two-part sequence that can replace the senior year Engineering Design Project II (EGNR495). The focus of this course is the development of the co-op project proposal and the initiation work on the co-op project. The expectation is that at least 60% of a forty hour work week is devoted to completing the project. Prerequisite: EGNR250 Cooperative Education.

Source: Academic Catalog 2020-21

EGNR451

Cooperative Education Project II

-3 3

A practicum in which students work in a supervised engineering capacity (on site) with industry. This is the second of a two-part sequence that can replace the senior year Engineering Design Project II (EGNR495). The focus of this course is the completion of the co-op project. The documentation at the completion of the project includes an update presentation and a final report/final presentation. The expectation is that at least 60% of a forty hour work week is devoted to completing the project. Prerequisite: EGNR450 Cooperative Education.

Source: Academic Catalog 2020-21

EGNR260

Engineering Research Methods

(1,3) 2

This is an introductory course covering research methods in engineering and engineering-related fields. The student will be involved in faculty-supervised and guided research activities such as assisting with developing experiments, gathering data and analyzing results. Much time will be spent learning about the research project, past experiments and future directions. Can be repeated for credit. Prerequisite: permission of instructor.

Source: Academic Catalog 2020-21

EGNR460

Engineering Research Project I

(2,6) 4

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students will acquire the skills listed under EGNR491 and develop a research plan for some portion of a project. The plan will be implemented in EGNR461. Specifically, the students will work to develop a proposal of the expected research goals and create a project timeline and budget. The student's faculty advisor and the director of the Lab for Undergraduate Research in Engineering (LURE) must approve the plan. Prerequisites: senior status, EGNR260 and permission of instructor. Students who plan to take EGNR461 must complete both EGNR460 and EGNR461 in the same academic year.

Source: Academic Catalog 2020-21

EGNR461

Engineering Research Project II

(1,3) 2

This is a senior-level course in which students are actively involved in a faculty-supervised and guided research project. Students implement their research plan developed in EGNR460 and lead research efforts. Results and findings must be reported in oral and/or written forms to appropriate constituencies outside the LSSU audience. Prerequisites: EGNR460 and permission of instructor. The dropping or failing of EGNR461 will result in the student having to repeat both EGNR460 and 461.

Source: Academic Catalog 2020-21

CSCI163

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 interference as they relate to computer repair and operation. The disassembly and upgrading of a personal computer will be covered in the laboratory as well as the use of diagnostic hardware and software.

Source: Academic Catalog 2020-21

CSCI211

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: CSCI105 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI221

Computer Networks

(2,2) 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: CSCI103 and 105 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI248

Network Operating Systems I

(2,2) 3

An introduction to using and administering network operating systems. Students will also be introduced to virtualization of machines, as well as interaction between virtualized machines. Topics include: account setup, basic security, file and device sharing, and maintenance. Course topics will be presented in the context of different network operating systems. Prerequisite: CSCI221 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI263

Managing Computer Security

(3,0) 3

This course investigates the various security protection and recovery techniques available for networks and personal computers including security policies, procedures, and requirements necessary for protecting the integrity of information stored on networks, workstations, and other computer systems. Other topics include discussions on disaster recovery planning, emergency response teams, threat assessment, detection and remediation of a threat, standards for establishing a security framework, and operations security and production controls. Prerequisite: CSCI101 or CSCI103 with grade of C or better.

Source: Academic Catalog 2020-21

CSCI292

Computer Networking Project

(4,0) 4

This is a hands-on course where the student is assigned a project in a corporate network setting. The projects will vary each semester to allow students to implement their knowledge to create and maintain a real-world network system. Activities could include the wiring of the network, installing and maintaining users, installing and repairing workstations, maintaining a Novell or Microsoft network, monitoring an NDS tree, and other similar activities. The student is expected to spend at least 8-10 hours per week on the project including hours on site, doing research, and writing weekly report logs. Prerequisite: CSCI106 and 107, both with a grade of C or better, or CSCI163 and CSCI221, both with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI323

Routers and Switches

(2,2) 3

Principles of Wide Area Networks, IP and TCP, routers, routing protocols and configurations, virtual LANs, network management, subnetting, design of LANs and WANs, and security issues. Students completing this course will be prepared to take the CCENT and CCNA certification exams. Prerequisite: CSCI221 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI348

Network Operating Systems II

(2,2) 3

A continuation of using and administering network operating systems. Students will also be introduced to virtualization of servers, as well as interaction between virtualized machines. Topics include: file system and network service management, remote access, security, printing, and disaster recovery. Course topics will be presented in the context of different network operating systems. Prerequisite: CSCI248 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI351

Mobile Application Development

(3,0) 3

Introduction to the development of applications for smart phones and tablets; using a simulator and provisioning to mobile devices; user interfaces, touch events, data management, and graphics; interaction with camera, accelerometer, and location hardware. Prerequisite: CSCI121 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI371

Multi-Platform Application Development

(3,0) 3

The design and implementation of applications across multiple platforms, with a goal of a similar or identical code base between versions. The course covers a variety of programming environments, as well as a variety of platforms. Focus will be on comparison between programming languages, as well as the strengths and weaknesses of various programming environments and models for a uni-platform vs a multi-platform approach. Prerequisite: CSCI121 and either CSCI281 or CSCI201 all with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI412

UNIX Network Administration

(2,2) 3

Network administration how to and issues for Linux. Installation of a Linux networked system, maintenance and upgrade of a Linux installation, security issues, common scripting languages, system admin tasks, NFS, and mail systems; other UNIXes. Prerequisites: CSCI221 and 281, both with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI418

Senior Project I

(1,4) 3

This course is the first part of the two-part sequence CSCI418/CSCI419. The student will begin a two-semester capstone experience that will include one of the following: a software project; a network implementation; a co-operative education position with an external company; or a research project. The experience must include the fulfillment of customer-generated requirements. The projects/experiences will vary each year to allow students to experience work in a real-world environment. Students in CSCI418 must take CSCI419 the following semester. Prerequisite: CSCI291 or CSCI292 with a C or better and permission of instructor.

Source: Academic Catalog 2020-21

CSCI419

Senior Project II

(1,4) 3

The second of a two-part sequence, CSCI419 provides students with the skills necessary for completion of their two-semester capstone experience that will include one of the following: a software project; a network implementation; a cooperative education opportunity with an external company; or a research project. The experience must include the fulfillment of customer-generated requirements. The projects/experiences will vary each year to allow students to experience work in a real-world environment. Students in CSCI418 must take CSCI419 the following semester. Prerequisite CSCI418 with a C or better and permission of the instructor.

Source: Academic Catalog 2020-21

CSCI422

Network and Computer Security

(2,2) 3

An advanced look at common computer and network exploitation techniques in use today. Course emphasis is on how exploits work (both from the exploiters perspective as well as the software faults that allow these exploits to exist), what can be done with the exploits, as well as mitigation and solution techniques for containing the damage to administered systems. Prerequisites: CSCI412 and either CSCI351 or CSCI371.

Source: Academic Catalog 2020-21

CSCI291

Computer Science Project

(4,0) 4

This is a hands-on course where the student is assigned a project at a corporate site. The student is expected to spend at least 8 - 10 hours a week on the project. Topics for the project may include creating a substantial Web site, designing and implementing an application system for a user, modifying and updating an existing software system, or other related projects. The projects will vary each semester. Prerequisites: CSCI201 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI321

Computer Graphics

(3,0) 3 Alternate Years

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: CSCI201, and either MATH112 or 151, all with a minimum grade of C.

Source: Academic Catalog 2020-21

CSCI325

Developing Web Applications with JavaScript and PHP

(2,2) 3

Transform static web sites into dynamic web sites using a combination of client and server-side web programs. Process and validate forms, build interactive web sites, manage web databases and publish web sites to a web server.

Prerequisites: CSCI121, CSCI211 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI326

Developing Web Applications with ASP.NET

(2,2) 3

Create and publish web server and web database applications using the Microsoft ASP.net framework; Emphasis on improving performance, security, and isolating business logic from the user interface. Prerequisites: CSCI121, CSCI211 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI342

Advanced Programming Techniques

(4,0) 4 Alternate Years

Advanced data structures including general trees and graphs. Advanced programming techniques, including: divide and conquer, dynamic programming, greedy algorithms, graph algorithms, balanced trees. Emphasis will also be placed on the software development process, debugging and testing methodologies. Prerequisites: CSCI201 with a grade of C or better.

Source: Academic Catalog 2020-21

CSCI411

Advanced Database and Project Management

(3,0) 3 Alternate Years

Designing and implementing an enterprise-level database. Creating interfaces to database systems from common programming language platforms. Capturing requirements, process modeling, project scheduling, documenting, testing, delivering and maintain a system. Prerequisites: CSCI201 and CSCI211, each with a minimum grade of C.

Source: Academic Catalog 2020-21

CSCI415

Computer Organization and Architecture

(3,0) 3

A hardware-orientated 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. Parallel computing for both SMP and MIMD models. Prerequisite: CSCI201 and either CSCI351 or CSCI371 with a grade of C or better.

Source: Academic Catalog 2020-21

MATH131

College Trigonometry

(3,0) 3

Basic theory of trigonometric functions and inverse trigonometric functions. Applications include trigonometric equations, plane trigonometry, vectors and complex numbers. Introduction to conic sections. Study of exponential functions and their connection to trigonometry functions, logarithmic functions and applications. Prerequisites: (1) Two years of high school algebra and equivalent/satisfactory score on ACT, COMPASS test or Placement Exam, or MATH102 with a grade of C or better. (2) One half-year of high school trigonometry with a grade of C or better is strongly recommended.

Source: Academic Catalog 2020-21

ENGL223

Creative Writing II

(3,0) 3

Through writing and discussion, students will study and practice intermediate elements of fiction and poetry. Prerequisite: ENGL221.

Source: Academic Catalog 2020-21

ENGL301

Creative Prose Writing

(3,0) 3

This course is a seminar and workshop for the study and practice of prose fiction, creative non-fiction, and other prose forms. Students will complete a final portfolio. Prerequisite: ENGL223.

Source: Academic Catalog 2020-21

ENGL302

Poetry Writing

(3,0) 3

This course is a seminar and workshop for the study and practice of poetry and its various forms. Students will complete a final portfolio. Prerequisite: ENGL223.

Source: Academic Catalog 2020-21

ENGL303

Performance Writing

(3,0) 3

This course is a seminar and workshop for the study and practice of writing for performance, which may include plays, film scripts, and other performance genres. Students will complete a final portfolio. Prerequisite: ENGL223.

Source: Academic Catalog 2020-21

ENGL409

Advanced Writing Workshop

(3,0) 3

This course is a workshop for advanced level writing in a variety of genres, with an emphasis on students doing sustained work in a chosen genre. Students will complete a final portfolio and projects relating to the writing life and publishing world. Prerequisites: Two courses from: ENGL301, ENGL302, or ENGL303.

Source: Academic Catalog 2020-21

ENGL480

Creative Writing Portfolio I

(3,0) 3

This is the first in a series of two capstone courses. Working with an English faculty member on an independent study basis, the student will create a proposal for a unified collection of creative work of literary merit in a chosen genre. Upon approval of the proposal, the student will make significant progress toward completion of the creative work. Prerequisites: Creative writing major, senior standing, and ENGL409.

Source: Academic Catalog 2020-21

ENGL482

Creative Writing Portfolio II

(3,0) 3

This is the second in a series of two capstone courses. Working with an English faculty member on an independent study basis, the student will complete a unified collection of creative work of literary merit in a chosen genre. Prerequisites: ENGL480.

Source: Academic Catalog 2020-21

ENGL233

English Literature I

(3,0) 3

Students will read and discuss selected works from the Old English period to the beginning of the eighteenth century. Emphasis will be placed on major writers and works, evaluated in their historical context. Prerequisite: ENGL180.

Source: Academic Catalog 2020-21

ENGL234

English Literature II

(3,0) 3

Students will read and discuss selected works from the eighteenth century to the twentieth century. Emphasis will be placed on major writers and works, evaluated in their historical context. Prerequisite: ENGL180.

Source: Academic Catalog 2020-21

ENGL398

Community Workshop Internship

3 3

This is an internship designed to provide students with an opportunity to earn credit while obtaining meaningful work experience leading a creative writing community workshop. 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 6 credits total. Prerequisite: ENGL223, a 2.50 gpa in the major, and permission of the instructor.

Source: Academic Catalog 2020-21

ENGL399

Publishing Internship

(1-2) 1-2

This course is designed to provide students with an opportunity to earn credit while obtaining meaningful work experience in English or publishing 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 up to four times at 1-2 credit hours for a maximum of 3 credit hours with each LSSU publication, up to 6 credits total. Prerequisite: 2.5 GPA in major and permission of the instructor.

Source: Academic Catalog 2020-21

JOUR211

Newswriting

(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. Prerequisite: COMM280.

Source: Academic Catalog 2020-21

THEA333

Play Analysis

(3,0) 3

This course will reveal techniques used by theatre artists to dissect plays so as to offer intelligent, creative, and dynamic productions by studying an exciting, diverse collection of plays. Prerequisite: THEA251 or Permission of Instructor.

Source: Academic Catalog 2020-21

THEA309

Survey of Great Playwrights

(3,0) 3

This course is designed to study the best of the best playwrights in theatre history and the various theatrical genres and creative challenges involved in the production of their work. Prerequisite: THEA251 or Permission of Instructor.

Source: Academic Catalog 2020-21

CJUS243

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: CJUS101.

Source: Academic Catalog 2020-21

CJUS345

Statistics and Design for Public Safety

(3,2) 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 MATH088 or equivalent/satisfactory score on ACT or Placement exam.

Source: Academic Catalog 2020-21

CJUS401

Senior Seminar

(3,0) 3

Seminar and independent study course with individual student guidance by faculty on selected research topics in criminal justice. Prerequisite CJUS345 and Senior standing.

Source: Academic Catalog 2020-21

CJUS402

Criminal Justice Internship

3-9

Criminal justice internship with an agency. Credit is based on the equivalent of 45 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. Course may be repeated for a maximum of 9 credits.

Source: Academic Catalog 2020-21

CJUS140

Criminological Theory and Correctional Client Growth

(3,0) 3

Emphasis on needs, identities and development of recipients of correctional services; to assist students in gaining insight into development of sensitivity to behavior and motivations of corrections clients. Specific problems of prisoners and intervention strategies are reviewed.

Source: Academic Catalog 2020-21

SOCY214

Criminology

(3,0) 3

A study of the nature and causes of crime and the results of various attempts to reduce crime.

Source: Academic Catalog 2020-21

CJUS110

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.

Source: Academic Catalog 2020-21

CJUS212

Loss Control

(3,0) 3

Study of security, including historical, legal and philosophical framework for various phases of security operations in our society today.

Source: Academic Catalog 2020-21

CJUS411

Police Operations

(5,0) 5

A capstone course for Michigan Commission on Law Enforcement Standards (MCOLES) Criminal Justice certification students. Court functions, domestic violence law and procedures, ethical issues, civil disputes, interpersonal relations, juvenile offenders and other related topics. Prerequisite: Permission of MCOLES Director.

Source: Academic Catalog 2020-21

CJUS325

Homeland Security and Emergency Services

(3,0) 3

This course will prepare all graduates from a variety of majors to understand how homeland security impacts the US political system as a whole, but especially from the standpoint of emergency response and preparedness. Investigates the impact of the federal homeland security apparatus on emergency response organizations at the state and local level. Includes a historical review of homeland security measures beginning in WWI and through WWII and the Korean War. Especially reviews the security situation during the Cold War. The course deals with the federal agencies usually not associated with homeland security, such as DEA, ATF, the military departments, FAA, CDC, the National Guard Bureau, and the DOD. Prerequisite: Junior standing. Students from other majors are encouraged to enroll with permission from instructor. Also listed as FIRE325.

Source: Academic Catalog 2020-21

CJUS355

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: CJUS101 and SOCY214.

Source: Academic Catalog 2020-21

CJUS444

Criminalistics

(3,3) 4

Criminalistics 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 MCOLES mandated hours. Prerequisite: CJUS243 or permission of MCOLES Director.

Source: Academic Catalog 2020-21

EMED189

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.

Source: Academic Catalog 2020-21

FIRE101

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.

Source: Academic Catalog 2020-21

FIRE102

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.

Source: Academic Catalog 2020-21

CJUS203

Cyberterrorism

(3,0) 3

This course will examine the problem of both domestic and global Cyberterrorism/Cybercrimes. The recognition of various types of crimes committed using computers, the Internet, and other Electronic Devices. Learners will learn investigative techniques and legal issues as related to the investigation of Cybercrimes.

Source: Academic Catalog 2020-21

CJUS206

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.

Source: Academic Catalog 2020-21

CJUS302

Hate Crimes

(3,0) 3

The course explores the history of racism, xenophobia, hate crimes, and extremism from a criminal justice perspective. A restorative justice model shall be utilized in examining hate crimes from a law enforcement, theoretical, political and legal context. Prerequisites: CJUS101, CJUS102, CJUS140 and Junior standing or permission of the instructor.

Source: Academic Catalog 2020-21

FIRE204

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam and FIRE101 or FIRE102.

Source: Academic Catalog 2020-21

FIRE206

Fire Protection Systems, Equipment and Industrial Fire Protection

(3,0) 3

Use and water supply needs of sprinkler and stand pipe systems and devices, fixed detection and control 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. Examination of fire and lifestyle hazards in business and industry. Emphasis on managing fire prevention and training private fire brigades. Prerequisites: FIRE101, FIRE111, FIRE204 and MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

FIRE211

Tactics and Strategy

(3,0) 3

Utilization of manpower, equipment and apparatus on the fireground. Emphasis: Pre-fire planning, fire ground decision making. Implementing tactics and disaster planning. Students will use fire simulation programs and interactive technology to apply and implement the principles covered in didactic instruction. Prerequisite: Either FIRE101 or 102 and 204 as a pre- or corequisite.

Source: Academic Catalog 2020-21

FIRE219

Firefighter Essentials

(3,0) 3

This course is the first part of a two class sequence; the second part of the sequence is FIRE220. This course will cover the principles of firefighting attack skills through the practical instruction and exercises as outlined by the Michigan Firefighters Training Council (MFFTC). This course introduces the student to the application of the principles of fire attack and strategy for Firefighter I certificate and portions of Firefighter II through the use of exercises and computer-generated simulations. Hazmat incident analysis and other major disaster case studies are used in this class. Prerequisites: FIRE101 and 111. Corequisites: FIRE197, 204, and 206. Completion of special medical examination.

Source: Academic Catalog 2020-21

FIRE220

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: FIRE219. Corequisites: FIRE206 and FIRE211. Completion of specialized medical examination.

Source: Academic Catalog 2020-21

CJUS103

Introduction to Terrorism and Homeland Security

(3,0) 3

This course will provide learners with historical view of terrorism, its origins, methodology, and ideology. It will also provide the learner with knowledge of specific events of the 20th century related to terrorism that have formed modern terrorism. Finally it will discuss the worldwide effort on deterring and discovering terrorist activities.

Source: Academic Catalog 2020-21

CJUS204

Domestic and International Terrorism

(3,0) 3

This course will examine the history and modern trends of Domestic, International and Transnational Terrorism. This will include the profile of terrorist recruits, the structure and dynamics of terrorist organizations, and government sponsored terrorism. The motivation of various organizations and their methods of terrorist violence, as well as, their justification of violent acts will be discussed. Antiterrorism and Counterterrorism measures will be analyzed.

Source: Academic Catalog 2020-21

CJUS303

Critical Infrastructure Protection

(3,0) 3

This course will examine the historical development of the United States modern infrastructures. The course will provide an in depth knowledge of the critical infrastructures and the current protection methods. The learner will then learn advanced protection techniques and vulnerability analysis skills utilized to protect the assets.

Source: Academic Catalog 2020-21

FIRE111

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.

Source: Academic Catalog 2020-21

CJUS301

Advanced Firearms

(0,2) 1

Emphasis will be on maintaining safe firearm handling, the reinforcing of the fundamentals of good marksmanship, and proper methods of cleaning and maintaining firearms. This course will expound on concepts, techniques, and knowledge learned in the CJUS201 Firearms course to include close quarter combat firing and weapon retention, advanced firearm cleaning and multiple target evaluation and courses of firing. Prerequisite: CJUS201 with a "C" or better grade or approval of MCOLES Director.

Source: Academic Catalog 2020-21

CJUS450

Skills Academy

2

A practicum course addressing the skills and competencies needed for certification through the Michigan Commission on Law Enforcement Standards (MCOLES). Prerequisite: Permission of MCOLES Director. Course may not be repeated for credit.

Source: Academic Catalog 2020-21

CHLD101

Introduction to Early Childhood Education

(4,0) 4

This course provides an introduction to the field of early childhood. Topics include typical and atypical developmental milestones in the social, emotional, physical, intellectual and moral development of children from birth to age 8. In addition, the history of early childhood education, types of programs and issues in the field of childcare will be addressed. Field experience is required.

Source: Academic Catalog 2020-21

CHLD103

Learning Environments for the Young Child

(4,0) 4

This course explores the contributions of child development theorists, and the multiple integrated influences of family and community, to the design and implementation of early childhood learning environments. The use of space, materials, and routines in providing inclusive, safe environments is considered, as well as philosophical approaches to supporting young learners. Field experience is required. Prerequisite: CHLD101.

Source: Academic Catalog 2020-21

CHLD241

STEM Foundations for the Young Child

(4,0) 4

This course explores basic concepts and skills in science, mathematics, engineering, and technology appropriate to early childhood education. Field experience is required. Prerequisites: MATH110 or higher; BIOL105.

Source: Academic Catalog 2020-21

CHLD242

Creativity & Humanities

(4,0) 4

This course examines literature, visual and performing arts, and social studies topics appropriate to early childhood education. Field experience is required. Prerequisites: ENGL111, SOCY103.

Source: Academic Catalog 2020-21

CHLD260

Practicum I

4

The student will complete at least 140 hours in an early childhood setting culminating in experience as a lead teacher. Seminar meetings are included. Grading will be CR/NC. Prerequisites: CHLD150 and permission of instructor.

Source: Academic Catalog 2020-21

CHLD330

Philosophical Foundations of Early Childhood Education

(2,0) 2

This course expands on basic knowledge of early childhood education practices to examine and evaluate contemporary early childhood program models and philosophical foundations. Prerequisite: CHLD260

Source: Academic Catalog 2020-21

CHLD350

Early Childhood Facilities Management

(2,0) 2

This course develops an advanced level of knowledge and skills necessary for effective management of child development centers, preschools, and other facilities. Effective leadership styles are considered. Prerequisite: CHLD270.

Source: Academic Catalog 2020-21

CHLD410

Practicum II

4

Students complete at least 140 hours in an early childhood setting, with primary emphasis on curriculum and administrative responsibilities. Seminar meetings are included. Grading will be CR/NC. Prerequisites: CHLD350 and Permission of Instructor.

Source: Academic Catalog 2020-21

CHLD495

Senior Project 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. Requires field research and oral presentation. Prerequisite: Senior Status and Instructor's approval.

Source: Academic Catalog 2020-21

EMED181

First Aid

(0.5,1.5) 1

Basic course in first aid. Theoretical and practical experience in university laboratory.

Source: Academic Catalog 2020-21

HLTH104

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.

Source: Academic Catalog 2020-21

EGEE345

Fundamentals of Engineering Electromagnetics

(3,0) 3 or (3,0,1)3

This course provides an in-depth knowledge of the fundamentals of electromagnetic theory. Topics include vector analysis, electrostatic fields and magnetostatic fields, while familiarizing students with the applications of such fields, Maxwell's equations, and an introduction to wave propagation and radiation. Prerequisites: EGEE210 with a grade of C or better, MATH251 and PHYS232. Pre- or corequisite: MATH310.

Source: Academic Catalog 2020-21

EGNR265

C Programming

(3,0) or (3,0,1) 3

An introductory course in C programming with an emphasis on structured programming techniques and on utilizing C to solve engineering-related problems. Topics include looping techniques, input and output to files, conditional flow of control, writing and utilizing functions, pointers, 1D and 2D arrays, and data storage. Prerequisites: MATH111 and MATH131 and sophomore standing.

Source: Academic Catalog 2020-21

EGEM320

Dynamics

(3,0) or (3,0,1) 3

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. Prerequisites: MATH152 and EGEM220.

Source: Academic Catalog 2020-21

EGME225

Mechanics of Materials I

(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: EGEM220 with a grade of C or better. Pre- or corequisite: MATH152.

Source: Academic Catalog 2020-21

EGRS461

Design of Control Systems

(3,3) 4

This course builds upon the fundamental control system theory covered in EGRS460 and introduces various control system design techniques. General topics include Bode and root locus design techniques, controllability and observability, optimal control, state space design. Several classical design techniques such as phase-lead, phase-lag, deadbeat, pole placement and PID design are covered. Prerequisite: EGRS460.

Source: Academic Catalog 2020-21

EGME337

Thermodynamics

(4,0) or (4,0,1) 4

A study of the theory and applications of thermodynamics. Topics covered include: thermodynamic properties, heat, work, first and second Laws of thermodynamics, entropy, power and refrigeration cycles, gas mixtures, and an introduction to transport theory. Prerequisite: MATH152.

Source: Academic Catalog 2020-21

EGET110

Applied Electricity

(3,2) 4

This course covers basic principles of DC and AC electricity. Topics include resistance, inductance, capacitance, series and parallel circuits, magnetic circuits, transformers and electrical motors. Laboratory exercises will reinforce the lecture material. Prerequisite: MATH111 and MATH131 each with a C or better.

Source: Academic Catalog 2020-21

EGET175

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: EGET110.

Source: Academic Catalog 2020-21

EGME141

Solid Modeling

(2,2) 3

An application of standard solid modeling software to draw, dimension, and design mechanical parts and assemblies. Topics covered include: standard drafting techniques, orthographic projections, wireframe and solid methods, dimensioning, assemblies, and constraining. An introduction to animation of assemblies is also included. Pre- or Corequisite: MATH102.

Source: Academic Catalog 2020-21

EGNR310

Quality Engineering

(3,0) 3

Provides a coverage of classical and modern methods of quality control and quality engineering. Topics include quality control principles and terminology, classical qualitative and quantitative quality control methods, including statistical process control procedures, robust design methods as applied to product design and design of experiments, and an overview of quality management systems used in industry. Pre- or Corequisites: MATH207 or MATH308.

Source: Academic Catalog 2020-21

EGRS380

Robotics Technology

(2,0) 2

This course will cover topics relative to robotics and robotics systems. Two- and three-dimensional kinematics, end effectors, active and passive collision systems, sensors, feedback devices, robotic safety, and principles of operation of applicable hardware will be studied. Prerequisites: MATH111 and MATH131 with grade of C or better, and PHYS221.

Source: Academic Catalog 2020-21

EGRS381

Robotics Technology Lab

(0,3) 1

Laboratory exercises will provide hands-on examples in the use of industrial robots. Focus will be on learning a structured robotics programming language. Applications and projects will simulate industrial situations as well as emphasize system integration. Prerequisites: EGNR265. Corequisite: EGRS380.

Source: Academic Catalog 2020-21

EGME240

Assembly Modeling and GD&T

(2,3) 3

The course is a continuation of EGME141. Parametric modeling and design of assemblies by the use of solid models. Emphasis will be placed on animation of assemblies to display the functionality of assemblies. Prerequisites: EGME110, EGME141, MATH131 and sophomore standing.

Source: Academic Catalog 2020-21

EGME276

Strength of Materials Lab

(0,3) 1

Laboratory experiments covering topics in mechanics of materials and engineering materials. Theory from mechanics of materials and engineering materials will be covered through hands-on experiments. (Pre- or corequisites: EGME225 and EGME275) or (Prerequisite EGMT225 and Pre or corequisite EGME275).

Source: Academic Catalog 2020-21

EGME338

Fluid Mechanics

(3,0) or (3,0,1) 3

A study of the theory and applications of fluid statics and fluid dynamics. Topics covered include: hydrostatics, buoyancy and stability, Bernoulli and energy equations, dimensional analysis, flow in pipes, pumps, potential flow, open-channel flow, introductory gas dynamics, integral and differential analysis of flow, exact and approximate solutions of the Navier-Stokes equations, and computational fluid dynamics (CFD). Prerequisites: EGEM220, MATH251, MATH310.

Source: Academic Catalog 2020-21

EGME310

Vehicle Development & Testing

(1,2) 2

A course providing a systematic overview of topics within the areas of automotive vehicle dynamics, component design, and testing. An introduction to gross vehicle dynamics is followed by a detailed study of specific vehicle subsystems, including both their design and their role in the overall vehicle behavior. Dynamic behaviors covered include acceleration, braking, cornering, ride, and load transfer. Subsystems considered include the brakes, steering system, suspension, tires, and drive train. Vehicle testing and benchmarking is also covered. Laboratory content includes an introduction to a commercial vehicle dynamics software package. Prerequisites: PHYS221 or PHYS231. Pre- or corequisites: EGEM220 or EGMT225.

Source: Academic Catalog 2020-21

EGMT225

Statics and Strength of Materials

(4,0) 4

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: MATH111 and MATH131 each with a C or better and PHYS221.

Source: Academic Catalog 2020-21

EGMT332

Thermodynamics and Heat Transfer for Technologists

(4,0) 4

This course provides an algebra-based coverage of topics in thermodynamics and heat transfer relevant to technologists in manufacturing and fire science. Thermodynamics topics include properties of substances, energy balances, combustion and thermochemistry, and heating and ventilation systems. Basic principles of conduction, convection, and radiation, and their application to practical problems are covered in the heat transfer portion of the course. Prerequisite: MATH111 or 140.

Source: Academic Catalog 2020-21

EGRS215

Introduction to Robotics

(1,2) 2

An introduction and orientation to the field of robotics. Challenges in robotics manufacturing, design and structure of robotic systems, classification of robots, robot geometry, power sources, robotic control systems are covered in this course. The lab part of the course will provide an overview of robotics applications in industry through videos and hands-on experiences. Applied laboratory topics will cover basic programming concepts, structures, and applications using industrial robots. Prerequisites: MATH102 or equivalent.

Source: Academic Catalog 2020-21

EGRS480

Manufacturing Automation

(3,0) 3

Study of the mathematical modeling of production concepts, analysis of automated flow lines, automated assembly systems, production economics, automated guided vehicles and materials requirement planning. Prerequisites: EGRS380, EGRS381 or EGRS382, and MATH112 or MATH151 with a grade of C or better.

Source: Academic Catalog 2020-21

EGRS481

Manufacturing Automation Lab

(0,3) 1

The first part of the laboratory work will focus on programming Fanuc robots using the Karel programming language. Industry-like applications and system integration projects will be assigned. The second part of the lab work will include the application of WITNESS discrete-event simulation software package to study and analyze manufacturing systems. Prerequisites: EGNR265 or CSCI121 either with a grade of C or better. Pre or co-requisite: EGRS480.

Source: Academic Catalog 2020-21

EDSE302

Communication and Community

(3,0) 3

Developing effective communication between all participants in the educational community involved in the education of students with special needs. Topics include preparing and implementing IEPs and communication with parents, students and teachers. Prerequisite: EDSE301.

Source: Academic Catalog 2020-21

EDSE320

Introduction to Learning Disabilities

(4,0) 4

An examination of the educational research, characteristics, diagnostic principles and practices related to teaching students with learning disabilities. Psychological theories (e.g. developmental, behavioral, and cognitive) of teaching students with learning disabilities and associated learning strategies are reviewed. Prerequisites: EDSE301, EDSE302.

Source: Academic Catalog 2020-21

EDSE401

Issues and Trends Impacting Learning Disabilities & Special Education

(3,0) 3

Contemporary issues in the education of students with learning disabilities and other special needs will be explored. Policies and regulations, requirements and procedures for service, curriculum adaptation and modification, delivery models relating to placement, privacy, advocacy, and family education will be discussed. Prerequisite: EDSE302.

Source: Academic Catalog 2020-21

EDSE403

Assessment and Diagnosis

(3,0) 3

An examination of the education research and best practices related to identification, assessment, instruction, accommodation, and implementation of special education programs. Legal responsibilities of the school in the areas of assessment, diagnosis, and diversity will also be addressed. Prerequisites: EDSE301, EDSE320.

Source: Academic Catalog 2020-21

EDSE404

Instruction and Technology: Preschool to Adult

(4,0) 4

An examination of the research and best practices using assistive technologies to increase, maintain or improve the capabilities of students with disabilities. Prerequisites: EDSE320, EDSE403.

Source: Academic Catalog 2020-21

EDSE480

Student Teaching Seminar: Special Education

(1,0) 1

A seminar for teacher candidates during a student teaching internship in a special education classroom. Corequisite: EDSE492. Prerequisites: EDSE320, EDSE403, and EDSE404, and admission to student teaching. The course may NOT be repeated for credit.

Source: Academic Catalog 2020-21

EDSE492

Internship/Supervised Student Teaching: Learning Disabilities

(8,0) 8

Supervised student teaching internship in a special education classroom, focus on working with students with learning disabilities. Grading will be CR/NC. Corequisite: EDSE480. Prerequisites: EDSE320, EDSE403, EDSE404 and admission to student teaching. The course may NOT be repeated for credit.

Source: Academic Catalog 2020-21

Source: Academic Catalog 2020-21

FINC443

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: BUSN350 and MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

FINC446

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: FINC341.

Source: Academic Catalog 2020-21

FINC448

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: FINC341.

Source: Academic Catalog 2020-21

ECON407

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: BUSN211 or MATH207, ECON201, 202, MATH112 or 151.

Source: Academic Catalog 2020-21

CJUS341

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.

Source: Academic Catalog 2020-21

FIRE197

Physical Fitness for Public Safety

(0,3) 1

This course provides physical fitness and skills necessary for the law enforcement and fire science certification students. Fire science students take the course semester before FIRE220.

Source: Academic Catalog 2020-21

FIRE201

Fire Protection Construction Concepts

(3,0) 3

Impact of building construction concepts and methods on firefighting tactics and strategy, decision making and safety. Presentation of the ramifications of hostile fire on construction and building materials. Prerequisite: FIRE101.

Source: Academic Catalog 2020-21

FIRE301

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, formulations and its relation to fire prevention and public education efforts and responsibilities of the fire service. Prerequisites: FIRE111, FIRE206 and Junior Standing.

Source: Academic Catalog 2020-21

FIRE309

Fire-Related Human Behavior

(3,0) 3

This course will provide students the knowledge to understand how humans behave in fire and emergency situations, and how that behavior is integrated into life safety systems development and design. Students will study past and present research on human behavior, life safety models, building design, and life safety education. Students will develop an understanding how to analyze possible outcomes as it relates to human survivability in fire and emergency situations. Pre- or Co-requisites: FIRE101, FIRE206, and FIRE301, or permission of instructor.

Source: Academic Catalog 2020-21

FIRE315

Company Level Supervision and Management

(3,0) 3

This course is intended to provide a comprehensive overview of supervision and administration skills necessary to function as a company officer, which would include but not be limited to planning, budgeting, time management, training, emergency incident command, and facility maintenance and care. Pre- or corequisites: FIRE101, FIRE111, FIRE204, FIRE206 and FIRE211.

Source: Academic Catalog 2020-21

FIRE401

Senior Seminar

(3,0) 3

Seminar and independent study course with individual student guidance by faculty on selected research topics in fire science. Prerequisites: ENGL111; Pre or Corequisite MATH207 or CJUS345, and Senior standing.

Source: Academic Catalog 2020-21

FIRE402

Fire Service and the Law

(3,0) 3

Capstone course. Introduces the judicial system in which the fire service operates. Covers civil action, liability, labor, prevention, safety (OSHA), and environmental law. Prerequisite: Senior level standing.

Source: Academic Catalog 2020-21

FIRE403

Fire Science Internship

3-9

Fire science internship with an agency. Credit is based on the equivalent of 45 hours of field work per credit hour. Students must make application by the ninth week of the previous semester. Prerequisites: Senior standing and permission of instructor. Course may be repeated for a maximum of 9 credits.

Source: Academic Catalog 2020-21

SOCY302

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: MATH088 or equivalent/satisfactory score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

FIRE325

Homeland Security and Emergency Services

(3,0) 3

This course will prepare all graduates from a variety of majors to understand how homeland security impacts the US political system as a whole, but especially from the standpoint of emergency response and preparedness. Investigates the impact of the federal, homeland security apparatus on emergency response organizations at the state and local level. Includes a historical review of homeland security measures beginning in WWI and through WWII and the Korean War. Especially reviews the security situation during the Cold War. The course deals with the federal agencies usually not associated with homeland security, such as DEA, ATF, the military departments, FAA, CDC, the National Guard Bureau, and the DOD. Prerequisite: Junior standing. Students from other majors are encouraged to enroll with permission of instructor. Also listed as CJUS325.

Source: Academic Catalog 2020-21

CHEM445

Forensic Science

(3,3) 4

This is a capstone class for the forensic chemistry degree. It will focus on standard and non-standard methods in forensic science. Lecture and laboratory concentrate on quantitative and qualitative drug analyses, fingerprint visualization techniques, ballistics, DNA analyses, and chemical analyses of evidence. Gas chromatography, atomic absorption spectrometry, and infrared spectroscopy techniques will be used to differentiate evidence. In this course much time will be spent on mechanisms of the analyses facilitating critical thinking skills. Prerequisites: CHEM332 and CJUS444. Note: Also listed as CJUS445.

Source: Academic Catalog 2020-21

CJUS445

Forensic Science

(3,3) 4

This is a capstone class for the forensic chemistry degree. It will focus on standard and non-standard methods in forensic science. Lecture and laboratory concentrate on quantitative and qualitative drug analyses, fingerprint visualization techniques, ballistics, DNA analyses, and chemical analyses of evidence. Gas chromatography, atomic absorption spectrometry, and infrared spectroscopy techniques will be used to differentiate evidence. In this course much time will be spent on mechanisms of the analyses facilitating critical thinking skills. Prerequisites: CHEM332 and CJUS444. Also listed as CHEM445.

Source: Academic Catalog 2020-21

INTD490

Senior Directed Study

(3-4,0) 3-4

This course is designed to allow liberal studies majors the opportunity to develop and implement a project/paper using the skills and knowledge from their previous course work. Projects/papers should relate to the student's individual areas of study, and represent a synthesis of their previous learning under the supervision of an appropriate faculty member.

Prerequisites: senior status and approval of the appropriate chair(s).

Source: Academic Catalog 2020-21

KINS101

Foundations in Kinesiology

(3,0) 3

Students will explore strategies aimed at creating success as they pursue their university and professional goals. Using a holistic and integrated approach, students will actively examine the multi-faceted field of Kinesiology. The breadth and impact of human movement will be revealed through field and reflection based experiences. Career opportunities, history, philosophy, current trends, curriculum development and how to navigate the university will be the emphasis.

Source: Academic Catalog 2020-21

KINS140

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.

Source: Academic Catalog 2020-21

Source: Academic Catalog 2020-21

KINS265

Personal Fitness Training

(3,0) 3

This course will enable the student to develop knowledge and expertise in the components of sport-related fitness. Specifically, strength training, cardiovascular endurance, flexibility, reaction time, speed and agility will be explored in both traditional and non-traditional sports. Emphasis will be placed on the implementation and measurement of the above sport-related fitness components and the design of a strength training and conditioning program for the purpose of enhancing athletic performance.

Source: Academic Catalog 2020-21

KINS275

Nutrition Sprt Exer Performnce

(3,0) 3

Explicitly details the role of the major nutrients in their application to wellness and fitness settings, as well as athletic performance. Specifically addresses the interaction of diet and exercise in modifying the condition of the individuals with metabolic dysfunction (diabetes, obesity) or compromised cardiovascular health (hypertension, coronary heart disease). Also examines the special nutritional needs of athletes and the effectiveness of ergogenic aids in enhancing sport performance. Prerequisites: BIOL121.

Source: Academic Catalog 2020-21

KINS295

Facility & Program Operations

(1,4) 3

Practical experiences that explore various types of work settings in kinesiology, working under a specialist in the student's chosen area of interest utilizing facilities on campus and in the community. Prerequisite: Pre or Co-requisite of KINS265.

Source: Academic Catalog 2020-21

KINS358

Research Methods Kinesiology

(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: MATH207 and KINS262.

Source: Academic Catalog 2020-21

KINS401

Internship I

(0,4) 2

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, and therapeutic rehabilitation skills into the health care of a physically active population in a variety of clinical settings. Prerequisite: KINS302 with a grade of C or better.

Source: Academic Catalog 2020-21

KINS402

Internship II

(0,4) 2

In this course, athletic training students continue to demonstrate an integration of risk management skills, assessment skills, therapeutic rehabilitation skills and administrative skills into the healthcare of a physically active population in a variety of clinical settings. Prerequisite: KINS401 with a grade of C or better.

Source: Academic Catalog 2020-21

KINS428

Psych Exercise/Rehabilitation

(3,0) 3

This course focuses upon the theoretical and applied concepts of psychology as it relates to exercise, rehabilitation and sport. 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 on the effects of exercise and rehabilitation on adherence, chronic pain, anxiety, depression, sport injury and sport performance. Prerequisites: KINS358.

Source: Academic Catalog 2020-21

KINS444

Exercise Prescription

(3,0) 3

Provides experience in writing and developing advanced training and conditioning programs for a variety of populations. Process oriented; considers needs analysis and cyclic training.

Source: Academic Catalog 2020-21

KINS481

Prof 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.

Source: Academic Catalog 2020-21

KINS105

Program Dev & Leadership

(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.

Source: Academic Catalog 2020-21

KINS262

Exercise Physiology

(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: BIOL121 and CHEM104 or CHEM115.

Source: Academic Catalog 2020-21

KINS268

Fitness Eval I: Func Assessmnt

(2,2) 3

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. Prerequisites: BIOL121 and KINS140.

Source: Academic Catalog 2020-21

KINS332

Health Promotions

(3,0) 3

Health promotion raises a number of economic, public policy, and ethical issues that cut across society. This course will provide students with a strong theoretical foundation for wellness, health promotion and disease prevention for the purpose of maintaining function across the lifespan. Best evidence practice for the design and implementation of worksite health programs and the benefits of these programs for employers and employees will be examined. In addition, this course will examine different theories and models of health promotion from an organizational/community and population perspective.

Source: Academic Catalog 2020-21

KINS344

Kinesiology

(3,0) 3

Science of movement applied to muscle, joint structure and function and application of physical laws of gravity, leverage, motion and balance to human performance. Video tape motion analysis is used to apply these theories into practical experience. Prerequisite: KINS141.

Source: Academic Catalog 2020-21

KINS346

Therapeutic Ex Rehabilitation

(2,2) 3

KINS346 will introduce the student to the theory and application of commonly used rehabilitative exercises in the field of athletic training. Students will be introduced to the 10 Goals of Rehabilitation, and will then study the relationship that therapeutic exercise plays in the attainment of each goal. Students will then develop a comprehensive rehabilitation plan that will enable a physically active person to return to activity as safely as possible. Students will be exposed to current surgical techniques and the rehabilitation that is involved. Prerequisite: KINS262.

Source: Academic Catalog 2020-21

KINS348

Fitness Eval II Lab 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: KINS268 and KINS262.

Source: Academic Catalog 2020-21

KINS434

Neurological Basics Motor Lrn

(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: BIOL122, KINS344 and KINS362.

Source: Academic Catalog 2020-21

KINS452

Allied Health Administration

(3,0) 3

This course is intended to enhance the administrative ability of allied health professionals. Students will learn to apply current management theories to administrative problems they may face. This will allow entry level allied health professionals the ability to craft creative solutions to administrative problems. Content in this course includes management strategies for the following: Program offerings, finances, human resources, facilities, information, insurance, and legal considerations. Prerequisites: KINS230 and junior standing.

Source: Academic Catalog 2020-21

KINS270

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.

Source: Academic Catalog 2020-21

KINS375

Commercial Recreation

(3,0) 3 Alternate Years

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: KINS105 or BUSN121, ACTG230, ECON202 and FINC245.

Source: Academic Catalog 2020-21

KINS482

Admin of Recreation Services

(3,0) 3

This is a capstone course designed for upper level School of Kinesiology students. Learning and applying administration aspects of the profession will include, but is not limited to, labor management, risk management, liability, facility management and planning, marketing, fundraising, budgeting, and current trends for various types of facilities - recreation centers, water parks and pools, fitness centers, parks, sports complexes and resorts. Prerequisite: KINS105 and Junior Standing.

Source: Academic Catalog 2020-21

SOWK480

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.

Source: Academic Catalog 2020-21

ENGL470

Language Arts Senior Thesis

(3,0) 3

Students engage in sustained exploration of an English Language arts topic, such as literacy education, writing pedagogy, or children's literature, complete an independent research project under the direction of the instructor, and develop it into a major paper. Prerequisite: Language Arts Major, Senior Standing.

Source: Academic Catalog 2020-21

COMM308

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: COMM101.

Source: Academic Catalog 2020-21

EGME110

Manufacturing Processes

(2,3) 3

An introduction to basic manufacturing processes. Both theory and applications of various processes are covered in lecture and laboratory. Topics include: machining processes, welding and related processes, metal forming processes, and plastic forming processes. Included in machining processes is a limited scope computer aided design and computer numerical control project. The topics of measuring instruments and laboratory safety will also be addressed in the lecture and laboratory. Completion of a high school trigonometry course is expected for enrollment. Co-requisite or Prerequisite: EGME141 and MATH111 (or equivalent/satisfactory score on ACT/SAT, or Placement Exam) or Permission of Instructor.

Source: Academic Catalog 2020-21

EGMT216

CAM with CNC Applications

(2,3) 3

Writing CNC programs in machine codes, and the setup and trial runs to produce parts from these programs. Simulation of CNC machining processes to predict tool paths and cycle times. Computer-aided manufacturing (CAM) topics and applications of CAM software will also be covered. Prerequisites: EGME110, EGME141, MATH131.

Source: Academic Catalog 2020-21

MGMT 471

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: BUSN211 and MGMT360 or equivalents.

Source: Academic Catalog 2020-21

EGME350

Machine Design

(3,3) 4

Design and selection of machine components and power transmission units. Selected topics in load, stress, and deflection analysis in more depth than EGME225, notably (but not exclusively) torsion of thin-walled sections, thick-walled pressure vessels, interference fits, buckling problems by eigenvalue analysis, and Castigliano's theorems. Deterministic and stochastic theories of static failure, dynamic loading, and fatigue. Performance analyses of machine components, such as shafts, bearings, gears, worms, fasteners, and belt/chain drives. Laboratory covers finite element analysis using commercial software, and involves a major group design project. Prerequisites: EGME141, 225, 275, and 276. Pre-or Corequisite: MATH310.

Source: Academic Catalog 2020-21

EGME431

Heat Transfer

(3,0) (3,0,1) 3

Theory and applications of heat transfer. Steady-state and transient conduction, forced convection, natural convection, radiation. Analysis of heat exchangers, boiling and condensation, introduction to numerical methods in heat transfer. Prerequisites: EGME337, EGME338 and (EGNR265 or EGNR140).

Source: Academic Catalog 2020-21

EGME432

Thermal and Fluids Lab

(1,3) 2

Practical applications of thermodynamics, fluid mechanics, and heat transfer. Hands-on training in the operation of thermodynamic components, power generation systems, and fluid mechanical devices. Experimentation in heat transfer. Includes major project in the area of power generation and dissipation. Prerequisites: EGME337 and EGME338. Pre- or corequisite: EGME431.

Source: Academic Catalog 2020-21

EGME415

Vehicle Dynamics

(2,0) 2

A study of vehicle dynamics, treating selected topics in automobile dynamics with more theoretical depth than EGME410, but also surveying heavy trucks, tracked and off-road vehicles (including terrain interaction), railway vehicles, and waterborne vessels. Dynamic modeling, as well as a thorough understanding of underlying physical phenomena, are emphasized. Prerequisites: EGEM320, EGNR340 and EGME310.

Source: Academic Catalog 2020-21

EGME425

Vibrations and Noise Control

(3,2) 4 or (3,2,1) 4

An introductory course on vibrations analysis, noise control, and acoustics. The vibrations portion includes the theory of discrete and continuous vibrating systems, and such applications as vibration mitigation, machinery vibrations, and rotor dynamics. The noise control/acoustics portion includes the theory of airborne sound, sound fields in bounded spaces, an overview of human hearing, and noise mitigation. Measurement techniques and signal analysis are covered in the laboratory segment. Prerequisites: EGME225, EGEM320, EGNR340, MATH251 and 310.

Source: Academic Catalog 2020-21

EGME442

Finite Element Analysis

(2,2) 3

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. Prerequisites: EGME350 and MATH310.

Source: Academic Catalog 2020-21

RECS101

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.

Source: Academic Catalog 2020-21

RECS262

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: RECS105.

Source: Academic Catalog 2020-21

RECS295

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

Source: Academic Catalog 2020-21

RECS360

Facilitation and Interpretation Techniques

(2,2) 3

This course is designed to serve recreation students who are interested in facilitating outdoor or adventure based programs, and/or become interpreters in an outdoor or parks environment. The course will expose the student to a wide variety of facilitation/interpretation methodologies. The student will be involved in both learning and practicing these techniques. Examples of these techniques would include such things as utilization of the metaphor, and Haiku. This class will also travel to different outdoor facilities, such as outdoor education centers and state historical sites. This will enable the students to facilitate experiences in an environment unavailable at LSSU (example, a high ropes course) and to interface with individuals who provide facilitation and interpretation as a part of their professional responsibilities.

Prerequisites: RECS105, RECS262.

Source: Academic Catalog 2020-21

RECS362

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: RECS101 and RECS262 or NSCI103 and EVRN131.

Source: Academic Catalog 2020-21

RECS365

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: RECS262.

Source: Academic Catalog 2020-21

RECS390

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.

Source: Academic Catalog 2020-21

RECS397

Recreation Studies Junior Research Seminar

(1,0) 1

Introduces the concepts, purpose, methods and function of scholarly research and scientific inquiry. Prerequisites: junior standing, and majoring in recreation management or parks and recreation.

Source: Academic Catalog 2020-21

RECS435

Research in Recreation and Leisure Sciences

(3,0) 3

This course will serve as a culminating educational component for the student majoring in therapeutic recreation and recreation management. The course will focus in part on current problems and issues in therapeutic recreation and will also have a major emphasis on developing an original research project. Prerequisites: RECS397 and MATH207, or PSYC210 or comparable statistics course.

Source: Academic Catalog 2020-21

RECS437

Recreation Studies Senior Research Seminar

(1,0) 1

The focus of this course is to provide instruction and experience relative to data analysis and presentation methodologies affiliated with conducting research. The students will apply the procedures and methodologies discussed in class directly to their research projects. Prerequisite: RECS435.

Source: Academic Catalog 2020-21

RECS492

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.

Source: Academic Catalog 2020-21

NRES107

Field Biology: Fish and Wildlife Ecology and Identification

(2,3) 3

Introduction to organisms and their environmental interactions and conservation concerns with emphasis on regional game species, endangered species, and invasive species. Lab consists primarily of field experiences and specimen identification. Prerequisite: Pre or Corerequisite ENGL110.

Source: Academic Catalog 2020-21

EMED188

Wilderness First Responder

(1,3) 2

The student will learn concepts and hands-on strategies to respond to medical emergencies in a remote setting of at least 1 hour from professional medical care. Students who successfully complete the course will receive a WFR certificate. There are no prerequisites or co-requisites. This course may not be repeated for credit. Course may be taught in non-traditional scheduling format.

Source: Academic Catalog 2020-21

EGNR490

Special Topics in Engineering: (Topic)

(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.

Source: Academic Catalog 2020-21

EGRS372

Mobile Robotics

(3,3) 4

An introduction to mobile robotics. Students will learn to integrate sensor data in order to control mobile robots to perform useful tasks in both known and unknown environments. Applications could include drones, autonomous vehicles, underwater robots, and warehouse robots. Students will also learn about current trends and areas of research within the field of mobile and service robotics. Prerequisites: MATH151 or MATH112, EGNR265 or CSCI121 with a grade of C or better, and EGRS215. This course cannot be repeated for credit.

Source: Academic Catalog 2020-21

BIOL290

Independent Study in (Discipline)

(1-4,0) 1-4

Special studies and/or research in biology for individuals or small seminar groups. Course content to be arranged by student(s) and a supervising professor with approval of department and college dean. Prerequisites: Students must have an overall GPA of at least 2.5, and no 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 Natural Science.

Source: Academic Catalog 2020-21

BUSN299

Internship in [Discipline]

(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 achieve the school approved learning objectives/outcomes established for the internship. Students are expected to spend a minimum of 45 hours (1 credit), 90 hours (2 credits), 135 hours (3 credits), or 180 hours (4 credits) in an appropriate work setting. This course may be repeated once for a maximum of four total credits. Prerequisites: 2.5 GPA, and approval of the Dean.

Source: Academic Catalog 2020-21

CJUS220

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.

Source: Academic Catalog 2020-21

CJUS240

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.

Source: Academic Catalog 2020-21

CJUS384

International and Comparative Criminal Justice Systems

(3,0) 3

A survey of selected world criminal justice systems including police, courts, and corrections. Cross-national and cross-cultural criminality from several perspectives will be examined as will the globalization of crime.

Source: Academic Catalog 2020-21

CJUS484

Futures Research: Long-Range Planning for Criminal Justice

(3,0) 3 Alternate Years

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: CJUS101 and CJUS102.

Source: Academic Catalog 2020-21

EMED190

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.

Source: Academic Catalog 2020-21

EMED191

Prehospital Emergency Care and Crisis Intervention II

(2,6) 4

Simulated practice with some in-hospital observation. Emphasis on laboratory practice of skills needed for functions of an EMT-A. Prerequisite: EMED190.

Source: Academic Catalog 2020-21

CSCI101

Introduction to Microcomputer Applications

(2,2) 3

The study of a selection of contemporary microcomputer applications, including operating systems concepts, word processing, spreadsheets, database management systems, and the Internet and World Wide Web. Brief survey of other applications, such as presentation graphics, multimedia usage and desktop publishing. Does not apply toward credit in computer science major or minor.

Source: Academic Catalog 2020-21

EVRN355

GIS Programming and Applications

(3,3) 4 Alternate Years

Spatial models and Python scripts are used to extend the functionality of GIS, and to automate and document spatial analysis and data management processes. Core topics include creating and running models in a GIS environment, converting and modifying model scripts, and developing Python scripts to process, map and analyze spatial data.

Prerequisites: EVRN225 and CSCI105 or by permission of instructor.

Source: Academic Catalog 2020-21

EVRN445

Remote Sensing and Spatial Statistics

(3,3) 4

Remote sensing skills such as ortho-rectification, color balancing, tiling imagery, and automate feature recognition will be used to analyze spatial data such as aerial photography, hyperspectral imagery, multi-spectral imagery, LiDAR, microwave, and RADAR. Spatial statistics focuses on analyzing patterns, mapping clusters, and identifying geographic distributions using point pattern analysis spatial autocorrelation, spatial regression and kriging. Prerequisite: EVRN325.

Source: Academic Catalog 2020-21

Source: Academic Catalog 2020-21

EMED211

Emergency Pharmacology I

(2,0) 2

Introduction to emergency pharmacology including sources of drugs, drug laws and regulation, routes of administration, pharmacokinetics and pharmaco-dynamics, dosage calculations and the metric system. Emphasis will be placed on drugs used in the management of cardiovascular emergencies. Prerequisite: math competency or MATH103, and corequisite EMED251.

Source: Academic Catalog 2020-21

EMED212

Emergency Pharmacology II

(2,0) 2

Continuation of HLTH211 with an overview of emergency drugs frequently used in the prehospital management of respiratory, endocrine, toxicological, obstetrical and other prehospital emergencies. Administration procedures and dosages for adult and pediatric patients will be covered. Prerequisite: EMED211 with a B- or above.

Source: Academic Catalog 2020-21

EMED251

Advanced Emergency Care I

(4,0) 4

Study of prehospital emergencies geared toward rapid intervention and patient stabilization. Introduction to the pre-hospital environment and preparatory information will be covered including medical-legal issues, airway management, parenteral therapy and comprehensive patient assessment. Management of traumatic injury and multiple casualty incidents will be addressed. Prerequisite: admission to Paramedic Technology Program.

Source: Academic Catalog 2020-21

EMED252

Advanced Emergency Care II

(4,0) 4

Continuation of EMED251 addressing treatment modalities for environmental, medical, obstetrical and behavioral emergencies in the adult and pediatric patient. Prerequisite: EMED251 with a B- or above.

Source: Academic Catalog 2020-21

EMED261

Emergency Cardiology I

(2,0) 2

Introduction to basic cardiac monitoring and dysrhythmia recognition. Review of the anatomy and physiology of the cardiovascular system, principles of electrophysiology, EKG interpretation and dysrhythmia management will be covered. Sinoatrial, junctional and atrial dysrhythmias will be addressed. Corequisite: EMED251.

Source: Academic Catalog 2020-21

EMED262

Emergency Cardiology II

(2,0) 2

Continuation of EMED261 with emphasis directed at identification and management of life-threatening dysrhythmias including ventricular dysrhythmias and heart blocks. Coronary artery disease, myocardial infarction and other cardiovascular emergencies will be addressed, and the course will conclude with ACLS certification. Prerequisite: EMED261 with a B- or above.

Source: Academic Catalog 2020-21

EMED271

Care of Special Populations

(2,0) 2

This course will prepare the Emergency Paramedic to effectively assess and manage special patient populations in the emergency setting. Course content will include differentiation between the normal adult and special patient populations, including assessment of the neonatal and pediatric patient and management of common medical and traumatic conditions experienced by the pediatric patient. Special emphasis will be placed on patient care needs and decision-making strategies unique to special patient populations, including resuscitation skills. Prerequisites: EMED211, EMED251, EMED261, EMED284, EMED286, EMED297.

Source: Academic Catalog 2020-21

EMED284

Advanced Skills and Situations I

(1,6) 3

Advanced skills and procedures discussed in Advanced Emergency Care will be demonstrated and practiced in a laboratory setting. Skills covered will include advanced airway management, parenteral therapy, cardiac monitoring and advanced patient assessment. Simulated patient scenarios will be designed to allow the student to practice these advanced skills in a realistic patient setting. Emphasis will be placed upon strengthening new skills and providing critical thinking opportunities which allow for the integration of theory with practical applications. Prerequisite: admission to the Paramedic Technology Program and corequisite EMED251.

Source: Academic Catalog 2020-21

EMED285

Advanced Skills and Situations II

(1,6) 3

Continuation of HLTH284 with an emphasis placed on ACLS and PALS procedures and algorithms. Instructor and peer evaluation will enhance learning, and working in groups will promote the concepts of teamwork and individual leadership. Prerequisite: EMED284 with a B- or above. Corequisite: EMED252.

Source: Academic Catalog 2020-21

EMED286

Paramedic Operations

(1,3) 2

This course will prepare the Emergency Paramedic to effectively handle unique situations which may be encountered in the prehospital setting that require highly specialized training. Program material will include managing multiple casualty situations, Medical Incident Command, hazardous materials incidents, rescue awareness and operations and crime scene awareness. Special emphasis will be placed on rescuer safety. Practical skills will include vehicular entry and disentanglement, and basic rescue operations.

Source: Academic Catalog 2020-21

EMED297

Paramedic Clinical I

(0,12) 2

Clinical rotations in the hospital emergency department, surgical suite, outpatient surgery and with local EMS agencies designed to provide the student with hands-on practical experience of patient care. Corequisite: EMED251 and permission of the instructor.

Source: Academic Catalog 2020-21

EMED298

Paramedic Clinical II

(0,12) 2

Clinical rotations in the hospital emergency department, intensive care unit, obstetrical unit, pediatrics unit and local EMS agencies will provide the student with a continuation of clinical exposure. Additional clinical experience in other areas may be included as the opportunity permits. Prerequisite: EMED297 with a B- or above and concurrent with EMED252.

Source: Academic Catalog 2020-21

EMED301

National Registry Certification Preparation

(2,0) 2

This course is designed to prepare the Paramedic Student to challenge the National Registry Paramedic Certification Examination upon completion of the didactic, practical and clinical components of the Paramedic Technology Program. It will provide the student with an opportunity to thoroughly review key information in the 8 modules of the National Standard Paramedic Curriculum. Emphasis will also be placed on improving the student's test-taking skills.

Source: Academic Catalog 2020-21

EMED302

Paramedic Field Internship

(0,21) 4

Upon completion of the didactic, practical and clinical components of the Paramedic Technology Program, the student in this field internship will be provided with the opportunity to synthesize and apply acquired knowledge, values and skills necessary for the practice of an Emergency Paramedic to real life scenarios in the pre-hospital setting. This internship will also provide the student with an opportunity to critically analyze the thoroughness and effectiveness of care provided, while developing and implementing team leadership skills and critical thinking skills that foster the ability to provide safe and efficient patient care. Prerequisite: Completion of all general education credits and EMED core curriculum courses; Co-requisite EMED301.

Source: Academic Catalog 2020-21

HLTH101

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.

Source: Academic Catalog 2020-21

FINC245

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 FINC341 may not enroll in this course. Prerequisites: ACTG132, 230, or OFFC119, and MATH086 or equivalent/satisfactory score on ACT or Placement Exam.

Source: Academic Catalog 2020-21

SOWK110

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.).

Source: Academic Catalog 2020-21

PSYC201

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.

Source: Academic Catalog 2020-21

SOWK250

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. Credit/No credit grade.

Source: Academic Catalog 2020-21

SOWK310

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: PSYC201.

Source: Academic Catalog 2020-21

SOWK344

Social Welfare Systems

(3,0) 3

Analysis of social welfare systems in the U.S. including history, philosophy, cross-cultural comparisons, and current issues.
Prerequisites: Junior standing or completion of SOWK110 or completion of HMSV204

Source: Academic Catalog 2020-21

SOCY301

Social Research Methods

(3,0) 3

Identification of research problems, concepts and theoretically derived hypothesis; Review of principle methods of experimental design, survey and field research and unobtrusive analysis. Prerequisite: Junior Status or Permission of Instructor.

Source: Academic Catalog 2020-21

PSYC291

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: PSYC201.

Source: Academic Catalog 2020-21

SOCY338

Deviance

(3,0) 3

Analysis of causes and consequences of deviant behavior and the development of deviant subcultures; examination of various societal responses to control deviance and their effectiveness. Prerequisite: Junior standing or three hours of sociology and/or human services.

Source: Academic Catalog 2020-21

SOWK341

Addiction

(3,0) 3

Study of the nature of drug dependency with emphasis on social and cultural variations in patterns and consequences of use. Prerequisites: either junior standing or sophomore standing together with HMSV204.

Source: Academic Catalog 2020-21

PSYC391

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: PSYC101 and junior standing.

Source: Academic Catalog 2020-21

CCHM250

Cannabis Production

(1,0) 1

An introduction to commercial growing of cannabis. Topics include commercial cannabis growth including genetics and hybridization and the operational components of a cannabis grow. Prerequisite: CCHM240.

Source: Academic Catalog 2020-21

CULN111

Beginning Culinary Skills

(4,12) 8

First course in the culinary arts focusing on the basics behind basic cooking principles including, but not limited to, grilling, boiling, broiling, searing, poaching, steaming, basting, braising, sauteing, and roasting.

Source: Academic Catalog 2020-21

CULN113

Kitchen Safety and Sanitation

(0,6) 2

Training in kitchen safety and sanitation and workplace safety for the employee and patron. Preparation for certification under a nationally recognized program. Corequisite: CULN111.

Source: Academic Catalog 2020-21

CULN115

Food and Beverage Management

(0,6) 2

This course will cover the basic principles of food and beverage operations management. It will cover the 'big picture' of how to ensure profitability and proper management of food and beverage businesses. It will cover food and beverage cost analysis, menu development and engineering, basic staff management and labor cost control, property accusation, income statement analysis, business financial development and analysis, purchasing and receiving, etc. Corerequisite: CULN111.

Source: Academic Catalog 2020-21

CULN121

Advanced Culinary Skills

(4,12) 8

This course will be similar to beginning cookery, though cooking techniques and equipment will be more advanced. Students dive into advanced cooking techniques such as smoking, curing, yeast breads, pickling, fermenting, quick breads, cakes, custards, etc. Students will be required to carry an appropriate knife kit and be in proper uniform. Prerequisite: CULN111.

Source: Academic Catalog 2020-21

CULN123

Service Operations

(0,6) 2

This course will educate students on the service and bar aspect of food and beverage operations. Students will be trained in proper service techniques, as well as the basic techniques behind managing the alcohol and non-alcohol aspects of the operation. Students will practice proper service language, understand the flow of FOH operations, understand basic mixology, become educated in wine varietals and pairing, and undertake basic barista training. Prerequisite: CULN111; Corerequisite: CULN121.

Source: Academic Catalog 2020-21

CULN125

Nutrition for Chefs

(0,6) 2

Fundamentals of human nutrition in relation to the culinary arts with a basis in human body function, wellness, metabolism and nutrients. Prerequisite: CULN111; Corequisite: CULN121.

Source: Academic Catalog 2020-21

CULN130

Culinary Internship

(0,6) 6

A supervised internship working in an approved food and beverage operation designed to further develop the chef's skill set in real-time culinary environments. A portion of the internship must be completed at an LCCS facility. Prerequisite: CULN121.

Source: Academic Catalog 2020-21

HIST310

Russia: From Under-developed State to Superpower

(4,0) 4 Fall, odd-numbered years

A study of Russian history from Peter the Great to the present.

Source: Academic Catalog 2020-21

HIST361

Latin America

(4,0) 4 Fall, even-numbered years

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 the role in the change of problems of U.S.-Latin American relations will be an important focus of this study. Prerequisite: GEOG322 geography of South America.

Source: Academic Catalog 2020-21

HIST371

Far East Civilization: 1850 to Present

(4,0) 4 Odd numbered years

A study of the history of China, Japan, India and adjoining areas of Asia from 1850 to present.

Source: Academic Catalog 2020-21

HUMN261

World Literature I

(3,0) 3 On Demand

The Ancient World to the Renaissance. Readings in translation of significant, primarily Western texts. Selection can include the Bible and works by such authors as Homer, Virgil, Thucydides, Tacitus, Boccaccio, Montaigne, Rabelais, and others. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

HUMN262

World Literature II

(3,0) 3 On Demand

The Renaissance to modern times. Readings in translation of significant, primarily Western, texts. Selections can include works by Galileo, Voltaire, Racine, Goethe, Ibsen, Dostoevsky, Brecht, Kafka, Sartre and others. Prerequisite: ENGL110.

Source: Academic Catalog 2020-21

JAPN105

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.

Source: Academic Catalog 2020-21

JAPN106

Intensive Introductory Japanese Language II

(10,2) 10

This course is designed as a continuation of JAPN105. 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.

Source: Academic Catalog 2020-21

JAPN201

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.

Source: Academic Catalog 2020-21

JAPN202

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.

Source: Academic Catalog 2020-21

JAPN301

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.

Source: Academic Catalog 2020-21

JAPN302

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.

Source: Academic Catalog 2020-21

NRES389

Internship in (Discipline)

(3-4,0) 3-4

A variable credit practicum course in which the students will perform research and/or gain work experience under the direction of a faculty mentor and a qualified supervisor. Students are expected to spend a minimum of 45 hours in an approved work setting for each credit earned. The course may be repeated once for a maximum of eight credits. Student interns will be required to write weekly updates or journal entries to be submitted to their LSSU faculty mentor for evaluation of what the student has learned. Prerequisites: 2.50 gpa in major and permission of faculty mentor or department chair.

Source: Academic Catalog 2020-21

BIOL490

Independent Study in (Discipline)

(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 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 Natural Science.

Source: Academic Catalog 2020-21

Source: Academic Catalog 2020-21

KINS450

Phil Human Perform/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: KINS262 or RECS101 and junior status.

Source: Academic Catalog 2020-21

COMM211

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: COMM101.

Source: Academic Catalog 2020-21

COMM210

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: COMM101.

Source: Academic Catalog 2020-21

COMM307

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: COMM101.

Source: Academic Catalog 2020-21

COMM325

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: COMM101.

Source: Academic Catalog 2020-21

GEOG492

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.

Source: Academic Catalog 2020-21

GEOG322

Geography of South America, Central America and the Caribbean Region

(4,0) 4 Alternate Years

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.

Source: Academic Catalog 2020-21

GEOG323

Geography of East and Southeast Asia

(4,0) 4 Alternate Years

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.

Source: Academic Catalog 2020-21

HLTH352

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: PSYC155 and junior level status. Also listed as NURS352.

Source: Academic Catalog 2020-21

SOCY326

The Sociology of Aging and the Aged

(3,0) 3

Examines aging and the aged in American society from the sociological perspective.

Source: Academic Catalog 2020-21

SOCY327

The Sociology of Dying and Death

(3,0) 3

Sociological examination of dying and death.

Source: Academic Catalog 2020-21

CJUS306

Security Systems

(3,0) 3

Overview of specialized areas of security in specific facilities with special attention given to management of security information. Prerequisite: CJUS212.

Source: Academic Catalog 2020-21

HLTH330

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: HLTH208.

Source: Academic Catalog 2020-21

HLTH452

Contemporary Issues in Nutrition

(3,0) 3

Utilizing an epidemiological frame, students will learn how to research current issues and topics in nutrition for closer examination and discussion. Nutritional trends and topics such as nutraceuticals, nutrigenomics, functional foods, supplements, herbs, and advertised dietary approaches aimed at promoting wellness and health will be explored in-depth and analyzed. Prerequisites: BIOL122, CHEM105, HLTH104, 108, 208 and EXER275.

Source: Academic Catalog 2020-21

HLTH490

Independent Study in Health

(1-4,0) 1-4

Individual investigation of topics tailored to student interest and need. Prerequisites: Junior or senior standing and instructor permission.

Source: Academic Catalog 2020-21

PHIL210

Existentialism

(3,0) 3

Survey of existentialist literature from a variety of authors, periods and genres: Dostoevsky, Kierkegaard, Nietzsche, Heidegger, Jaspers, Sartre, Camus, de Beauvoir, Rilke, and others. Texts include philosophical prose, biblical exegesis, fiction, drama and poetry, containing many of the definitive expressions of such current literary, philosophical and artistic themes as the varieties and sources of alienation, the creation and definition of the self, the nature and rationality of religious faith, moral responses to insoluble dilemmas, and potential individual responses to an absurd and inhuman world. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

PHIL215

Ethical Theory and Practice

(3,0) 3

Certain actions seem to be demanded by morality and certain actions seem to be prohibited by morality. In addition, there are many actions in which we have difficulty extending praise or blame. The study of Ethical Theory constitutes the study of philosophers' evaluations of behavior, character, and even the term of such evaluation (e.g., 'goodness,' 'value,' 'right,' and 'obligation'). this course will examine the ethical theories of philosophers such as Plato, Aristotle, Kant, Bentham, and Mill as well as contemporary applications of ethical theories. Topics such as terrorism, ethics in the professions, the environment, and religiously motivated behavior are timely and appropriate topics for evaluating the connections between moral reasoning and our modes of living. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

PHIL250

Philosophy of Religion

(3,0) 3

This course examines the rational foundations for believing in and worshiping a Deity. In particular we will focus our inquiry on the God of Judaism, Christianity, and Islam who is thought to possess the qualities of omniscience, omnipotence, and beneficence. (We will, however, exposit the deities Hinduism and Buddhism to put our study in context.) Can we prove that God exists? What might we owe God? How can we explain the existence of evil even though God is thought to be wholly good? What place does religion have in a pluralistic society? The history of Western Philosophy is in large part unified by the common pursuit of such questions. Not only are the questions themselves fascinating and perplexing, but also, they have been answered in inventive ways by many extraordinary thinkers. The Philosophy of Religion is, therefore, a continuing search that has as much to do with human ingenuity as it does about God. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

ENGL440

Advanced Studies in British Literature

(3,0) 3

Examination, implementing rigorous research and critical methods, of a notable period, genre, aesthetics, or movement in British literature. Prerequisite: ENGL380.

Source: Academic Catalog 2020-21

ENGL442

Advanced Studies in American Literature

(3,0) 3

Examination, implementing rigorous research and critical methods, of a notable period, genre, aesthetics, or movement in American literature. Prerequisite: ENGL380.

Source: Academic Catalog 2020-21

BIOL450

Laboratory Apprenticeship (Discipline)

(0,3) 1

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. This is a credit/no credit course.

Source: Academic Catalog 2020-21

RECA106

Backpacking

(0,2) 1

Introduction to equipment, safety precautions, environmental concerns and skills needed to successfully backpack. Class will experience a weekend backpacking trip.

Source: Academic Catalog 2020-21

RECA107

Canoe Techniques

(0,2) 1

This course will introduce the student to the basic strokes and canoe safety associated with flat water canoeing.

Source: Academic Catalog 2020-21

RECA109

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.

Source: Academic Catalog 2020-21

RECA119

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.

Source: Academic Catalog 2020-21

RECA120

Downhill Skiing and Snowboarding

(0,2) 1

The students will be provided with an opportunity to learn the basic fundamentals of downhill skiing and snowboarding and to gain sufficient knowledge of the sport so they may continue to enjoy and improve for the rest of their lives.

Source: Academic Catalog 2020-21

PHIL220

Biomedical Ethics

(3,0) 3

Survey of contemporary issues in medical and research ethics. Topics could include abortion, euthanasia, genetic testing, reproductive technologies, doctor-patient relationships, conflicting imperatives on confidentiality and disclosure, social consequences of drug development and widespread use, concepts of health and disease, gender and medical practice, the distribution of medical resources, and the medicalization of various forms of social deviance. Prerequisite: ENGL111.

Source: Academic Catalog 2020-21

PHIL490

Directed Study in Philosophy

(1-4) 1-4

A study of philosophically engaging topic, chosen by instructor and student. Essays and tutorial session required.
Prerequisites: At least six credits of philosophy courses, evidence that the student is capable of carrying out independent study, and approval of instructor. This course may be repeated for up to six credits, or three times, whichever occurs first.

Source: Academic Catalog 2020-21

COMM399

Internship in Communication

(1-4) 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 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.

Source: Academic Catalog 2020-21

JOUR220

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.

Source: Academic Catalog 2020-21

HLTH150

Introduction to Public Health

(3,0) 3

A survey of the field of public health from a biopsychosocial perspective. Prerequisites: None.

Source: Academic Catalog 2020-21

SOCY266

Medical Sociology

(4, 0) 4

The study of social distributions and social determinants of health, as well as the societal conditions that affect health.
Recommended course: SOCY101 or SOCY102.

Source: Academic Catalog 2020-21

SOWK204

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. Prerequisite or Corequisite: BIOL105 or equivalent.

Source: Academic Catalog 2020-21

SOWK292

Substance Abuse: Prevention and Treatment

(3,0) 3

This course examines current prevention, detection and treatment approaches for substance abuse and addiction.

Source: Academic Catalog 2020-21

HLTH210

Introduction to Health Care Concepts and Issues

(3,0) 3

This course is an introduction to the health care system with analysis of the issues and trends affecting the provision of health care services. Health care topics reviewed will include both local and global issues. Required course for environmental health and healthcare and administration; may also be used as an elective course. Material supports accreditation criteria for environmental health. Prerequisite: Sophomore standing.

Source: Academic Catalog 2020-21

CSCI107

Web Graphic Design and Development

(2,2) 3

Apply graphic design, typography, color theory, and image composition to enhance a web site. Create web graphics using Adobe Photoshop and Microsoft Expression Design. Insert graphics into web pages and publish web sites using Adobe Dreamweaver and Microsoft Expression Web.

Source: Academic Catalog 2020-21

RECA210

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, RECA211. Prerequisite: Red Cross intermediate swimming certificate or equivalent skills.

Source: Academic Catalog 2020-21

RECA211

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.

Source: Academic Catalog 2020-21

RECS212

Instructional Methods in Adapted Aquatics

(1,2) 2 Alternate Years

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.

Source: Academic Catalog 2020-21

RECS220

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: RECS101 and 105.

Source: Academic Catalog 2020-21

RECS280

Readiness in Games, Activities and Sports

(3,0) 3 Alternate Years

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.

Source: Academic Catalog 2020-21

RECS450

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: EXER262 or RECS101 and junior status. Also listed as EXER450.

Source: Academic Catalog 2020-21

RECS496

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.

Source: Academic Catalog 2020-21

EGNR496

Senior Directed Project

(1,6) 3

This course is designed to allow industrial technology majors the opportunity to implement a project while working collaboratively with engineering and engineering technology students. Students will be expected to use the skills and knowledge from previous course work. Project outcomes should relate to the student's individual areas of study and represent a synthesis of the previous learning under the supervision of a faculty member. Prerequisites: Approval of the department chair, senior status, and expected graduation on or before December of the following calendar year.

Source: Academic Catalog 2020-21

CSCI490

Individualized 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 nine credits. Prerequisites: Junior standing or higher.

Source: Academic Catalog 2020-21

SOWK301

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: LAWS202 or junior standing. Also listed as LAWS301.

Source: Academic Catalog 2020-21

SOWK305

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: HIST230 and NATV230. Also listed as LAWS305/NATV305.

Source: Academic Catalog 2020-21

SOCY238

Social Psychology

(3,2) 4

This course examines the social nature of humans, exploring both the influence of social structures upon behavior and the process by which people create social structures; explains symbolic interactionist theory; and introduces qualitative research methods which are applied in a field study conducted by the student. Prerequisite: SOCY101 with a grade of C or better, ENGL110, with a grade of C or better.

Source: Academic Catalog 2020-21

SOCY310

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. Prerequisite: SOCY238.

Source: Academic Catalog 2020-21

SOCY311

Contemporary Sociological Theory

(3,0) 3

Critical analysis of major sociological theories of the 20th and 21st centuries. Prerequisite: SOCY238.

Source: Academic Catalog 2020-21

SOCY314

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.

Source: Academic Catalog 2020-21

SOCY497

Community Action Project

(1,6) 3

This is an applied course in which, under the guidance of a sociology faculty member, the student carries out a practical project designed to address a community need identified in and elaborated upon in SOCY495. Prerequisites: SOCY401 and SOCY495.

Source: Academic Catalog 2020-21

MRKT379

Sports and Events Marketing

(3,0) 3

A study of the theories, concepts, impacts, and contemporary issues unique to sports and events marketing, including the marketing athletes, teams, leagues, celebrities, entertainment, and special events. Prerequisite: MRKT281 or special permission of instructor.

Source: Academic Catalog 2020-21

THEA212

Improvisational Acting

(2,2) 3

No script. No lines. No set. Step outside the box and make the best of it! Improvisational acting gives students a creative opportunity to free the imagination, build self-confidence and let go. The course introduces the structure and training vital to successful improvisational theatre. Build ensemble, poise, and learn to trust yourself. Prerequisite: THEA112 or Permission of Instructor.

Source: Academic Catalog 2020-21

THEA312

Acting Shakespeare

(3,0) 3

Shakespeare wrote his plays to be spoken - to be acted. This course will immerse the student in an exciting study of Shakespeare's language and its heightened structure so as to bring it to life. Prerequisite: THEA212 or Permission of Instructor.

Source: Academic Catalog 2020-21

THEA412

Acting Studio

(3,0) 3

Acting Studio deepens the study of the craft - providing technique to the more disciplined actor. The course explores the tools used to deliver actors to a technique that frees the self, imagination and sense of play, in other words, to what acting really feels like. Stella Adler, Stanislavski, Morris Carnovsky, and Meisner will lead our study. Our exploration will make use of monologues and scene work from various classical and contemporary playwrights. Prerequisite: THEA312 or Permission of Instructor.

Source: Academic Catalog 2020-21

THEA162

Practicum-Acting in Practice

(1,0) 1

Practicum provides practical experience in the work of the theatre artist by acting in a production of LSSU theatre or its equivalent in the community. Students will spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

Source: Academic Catalog 2020-21

THEA163

Practicum-Production Team

(1,0) 1

Practicum provides practical experience in assisting with the various non-performance production aspects associated with LSSU productions. Students are expected to spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

Source: Academic Catalog 2020-21

THEA164

Practicum-Healthcare Simulation

(1,0) 1

Practicum provides practical experience in the work of the theatre artist in assisting LSSU's diverse healthcare programming. Students will receive acting training and 'act' in various real world scenarios for healthcare simulations associated with programs like, but not limited to, nursing and EMS training. Students will be expected to spend a minimum of 45 hours in an approved work setting for each hour of credit and required to keep a record of such hours with the instructor of record in charge of the practicum. This course is open to all students. (May be repeated once for a maximum of 2 credits.) Prerequisite: Permission of Instructor.

Source: Academic Catalog 2020-21