DEPARTMENT OF EARTH, ENVIRONMENTAL AND GEOGRAPHICAL SCIENCES

WINTER 2024 Advising For Fall 2024 Registration

WELCOME PROSPECTIVE, CURRENT, AND GRADUATING EEGS STUDENTS

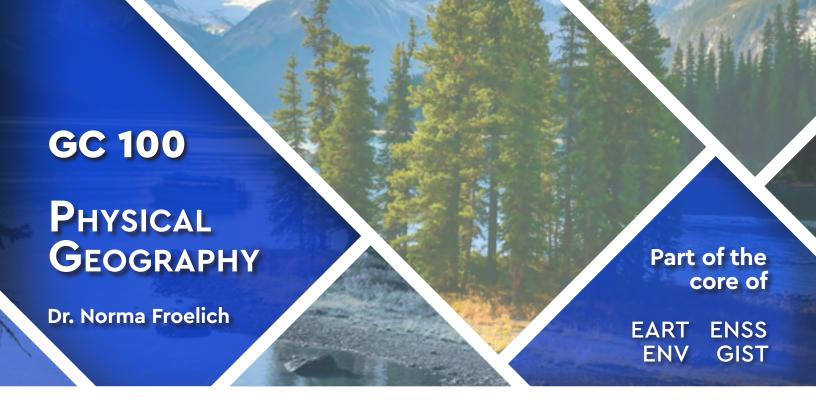
DEPARTMENT MISSION

We prepare students for their future careers by cultivating critical thinking and sciencebased inquiry skills. Students develop foundations in earth, environmental, and geographical sciences to analyze local and global issues challenging the humanenvironment relationship. EEGS faculty members engage in active research, professional development, and service to enhance quality teaching and provide an interdisciplinary curriculum.









This course examines interactions between the atmosphere, the Earth's surface, water, and living things, as well as the role of humans in those interactions. Students will be able to explain the processes that drive Earth's seasons, weather, climates, biomes, and landforms, and how they are impacted by human activities. Students will learn how to develop research questions, collect data, and produce and interpret graphs, maps, and figures relating to major geographic patterns and their processes.

Satisfies: Scientific Inquiry (SCII) General Education requirement.

Prerequisites: none



01: MTWR 9:00 AM-9:50 AM











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Satisfies: Scientific Inquiry (SCII) General Education requirement.

Prerequisites: none



02: MTWR 12:00 PM-12:50 PM









GC 101

Intro to Environmental Science

Dr. Adam T. Naito

COURSE DESCRIPTION

This course introduces students to Environmental Science and its role in ensuring a sustainable future. Students will discuss and synthesize complex environmental issues while drawing from their own experiences and other disciplines. Students also examine the science behind those issues involving both social and ecological systems. Course assignments strive to show students how to make decisions based upon their own assessment of scientific evidence.

Satisfies: Integrative Thinking (INTT) General Education requirement.

Prerequisites: none



01: MTWR 10:00 AM-10:50 AM



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GC 101 Intro to Environmental Science

STAFF

COURSE DESCRIPTION

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Satisfies: Integrative Thinking (INTT) General Education requirement.

Prerequisites: none



02: MW 6:00 PM-7:40 PM



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Human Geography introduces students to the systematic study of locations, patterns, and processes that shape human understanding, use, and alteration of Earth's surface and their environments. Students will explore human activities around the world and in their own environments. They will explain how people affect places, how places affect people, and how geography impacts aspects of their daily lives. Students will also learn about the methods and tools geographers use in their research and practice.

Satisfies: Social Responsibility in a Diverse World (SOCR) and World Cultures (WC) General Education requirements.

Prerequisites: none



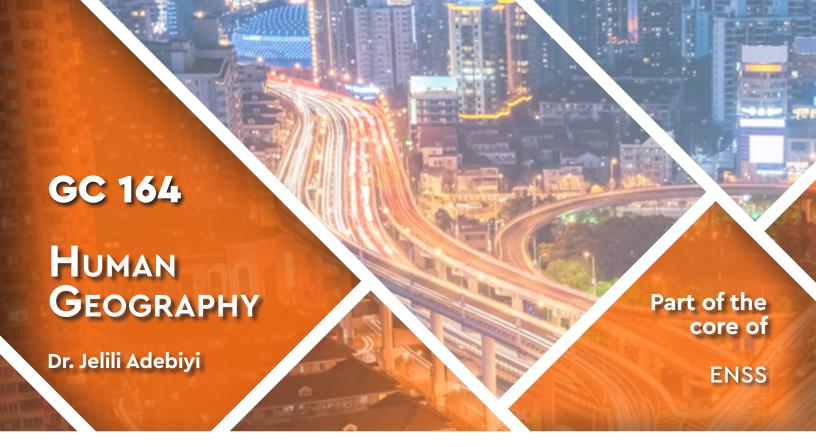
01: TR 8:00 AM-9:40 AM



CORTHERN MICHIGAN UNIVERSITY







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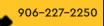
Prerequisites: none



02: TR 11:00 AM-12:40 PM



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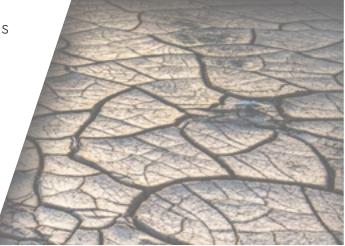


This course is designed to provide a comprehensive and applied understanding of soil physical, biological, and chemical properties useful for environmental science, natural resource management, and agronomy related outcomes. This course will use a variety of professional measurement, assessment and analysis methods to examine soil biogeochemical processes that support conservation and management of soil resources.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: GC 100 or GC 101; or instructor's permission

70: HYBRID: W 5:00 PM-6:40 PM
01: LAB: R 9:00 AM-10:40 AM
02: LAB: R 12:00 PM-1:40 PM
03: LAB: F 9:00 AM-10:40 AM
04: LAB: F 12:00 PM-1:40 PM
05: LAB: F 2:00 PM-3:40 PM











GC 205 Intro to Geographic Research

Dr. Ryan Stock

COURSE DESCRIPTION

This course is designed to provide a basic introduction to the field of geography and related environmental fields. Students will learn the history of geography and its major theoretical paradigms and will engage in methodological approaches to study geographical phenomena. Students will build essential skill-sets including data collection methods, data analysis, research design, data visualization and scientific communication.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: EN 211, and either GC 100 or GC 164



01: TR 9:00 AM - 10:40 AM



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GC 205 Intro to Geographic Research

Dr. Jelili Adebiyi

COURSE DESCRIPTION

This course is designed to provide a basic introduction to the field of geography and related environmental fields. Students will learn the history of geography and its major theoretical paradigms and will engage in methodological approaches to study geographical phenomena. Students will build essential skill-sets including data collection methods, data analysis, research design, data visualization and scientific communication.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: EN 211, and either GC 100 or GC 164



02: MW 11:00 AM - 12:40 PM









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This course is designed to provide students an exploration of the social, political and spatial dimensions of economic phenomena. Students will examine the environmental aspects of economic and political systems, inequality, international development, power relations, commodity chains and economic change. Students will also study global problems and develop local solutions through project-based assignments.

Prerequisites: none



01: MW 10:00 AM-11:40 AM











This course introduces students to map reading, analysis and interpretation, with special emphasis on USGS topographic maps. Students will develop foundational knowledge regarding map data types, map development, map reading and analysis. Additionally, they will learn to create topographic profiles, work with scale, become familiar with three different coordinate systems, determine bearings, calculate distance and areal extents manually and with GPS, and examine land partitioning using the Public Land Survey System.

Notes: Field work may be required. Contact instructor for more information..

Prerequisites: MA 100 or higher

01: LEC: F 11:00 AM-11:50 AM 02: LAB: T 9:00 AM-10:40 AM 03: LAB: T 12:00 PM-1:40 PM 04: LAB: F 9:00 AM-10:40 AM











This course introduces students to classic and spatial statistical concepts and techniques relevant to and used by environmental scientists, geographers, and geoscientists. Students will examine statistical concepts and methods and their theoretical underpinnings, and then apply their quantitative skills using computer-based tools and software. Students will assemble and analyze data sets and summarize their interpretations.

Prerequisites: DATA 109, or MA 111, or mathematics placement at MA 115 or higher.



01: MW 11:00 AM-12:40 PM



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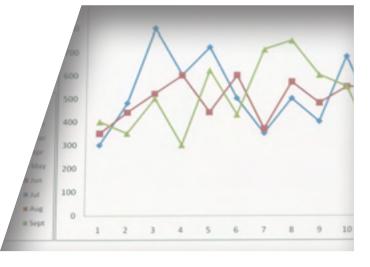
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Prerequisites: DATA 109, or MA 111, or mathematics placement at MA 115 or higher.



70: W 3:00 PM-4:40 PM









This course introduces students to geology, the study of Earth's structure and composition, its history and the processes that shape it. Students will learn to identify minerals and rocks, investigate rock formation processes, plate tectonics, volcanism, earthquakes and the development of various topographic landforms. Additionally, students will learn to read topographic and bedrock geologic maps, and evaluate stream and groundwater flow, seismic data and sand dune movement.

Notes: Field work may be required. Contact instructor for more information.

Satisfies: Scientific Inquiry (SCII) General Education requirement.

Prerequisites: none

01: Lec: M 8:00 AM-9:40 AM Lec: W 8:00 AM-8:50 AM 02: Lab: W 9:00 AM-10:40 AM





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Intro to Sustainability

Dr. Jelili Adebiyi

COURSE DESCRIPTION

This course helps students answer urgent questions about sustainability, such as: "How can we meet the needs of our current population without sacrificing the needs of future generations?" Students will investigate environmental problems while also designing and implementing sustainable solutions. This course includes field-based experiences and a community-based project, allowing students to contemplate global sustainability while implementing local solutions.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: EN 211, GC 164, and at least one of GC 100, GC 101 or GC 255.



01: MW 3:00 PM-4:40 PM











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Urban Geography

GC 310

Dr. Weronika Kusek

COURSE DESCRIPTION

Urban Geography introduces students to concepts pertinent to the city, its origins, contemporary form, and urban challenges. Students will examine the city and urban phenomena in both the American context and international setting, and will be able to explain social, economic, demographic, and political forces that alter urban environments. Students will explore sustainability initiatives introduced by cities to address environmental challenges. Students will also apply methods and tools geographers use in research and practice.

Prerequisites: GC 164 or GC 220, and GC 205



01: MW 8:00 AM-9:40 AM



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GC 317

Geography of Food Systems

Dr. Jelili Adebiyi

COURSE DESCRIPTION

This course is designed to provide a broad understanding of the global agrifood system. We focus on the social and environmental aspects of food production systems and commodity chains, inequality and access and economic and policy dimensions. Students will also engage in field-based experiences and group projects that enable them to interact with and impact the global food system at the local scale.

Prerequisites: EN 211 or GC 205, or instructor permission.



01: TR 3:00 PM-4:40 PM



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This course introduces students to public policy and regulatory processes in the United States with a focus on federal and state involvement in environmental decision-making. Students will examine the history of environmental policy and relevant environmental laws. Students will also explore issues related to international environmental law with an emphasis on climate policy.

Prerequisites: GC 100 or GC 101 or junior standing



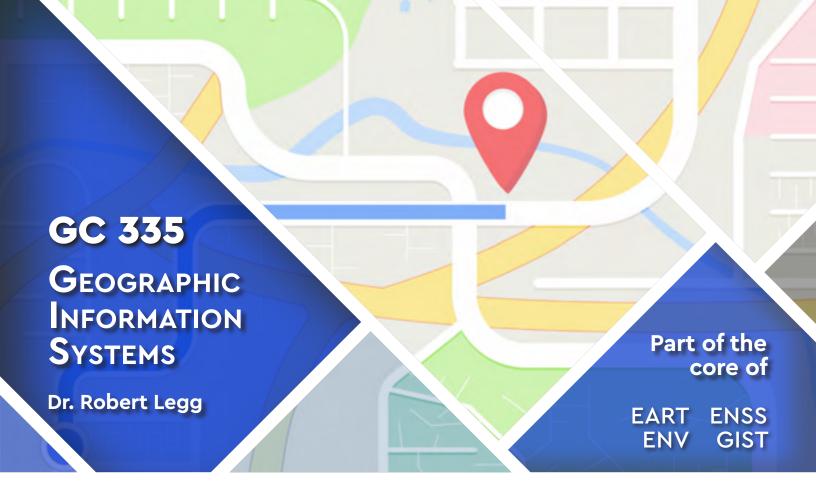
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This course introduces students and professionals to foundational ideas underpinning the growing field of Geographic Information Systems (GIS). Students will examine fundamental concepts related to the creation, management, analysis, and visualization of geographic information. Students will then apply these concepts using industry-standard software to assemble and analyze data, and develop visualizations to communicate, solve problems, and make decisions. These skills will prepare students for work in a variety of job sectors.

Prerequisites: GC 225 or junior standing or instructor permission



01: MW 12:00 PM-1:40 PM

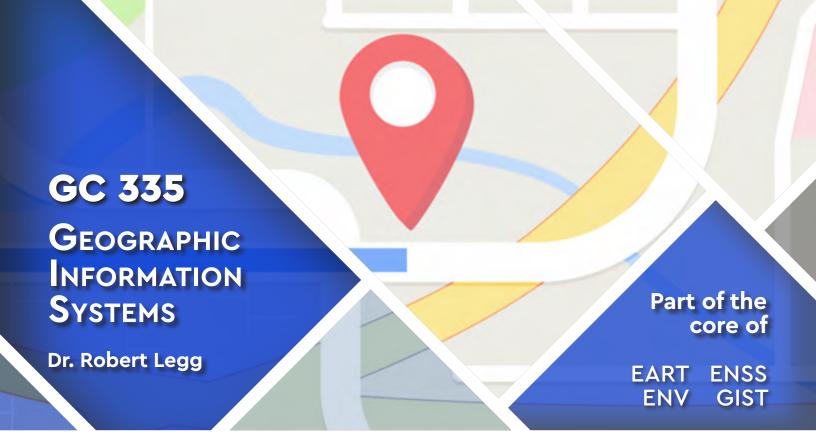






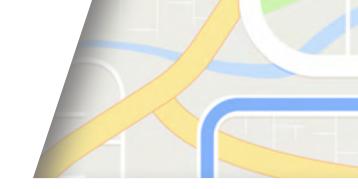






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Prerequisites: GC 225 or junior standing or instructor permission



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Elective option for Earth Systems Analysis concentration of EART

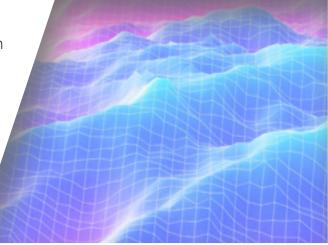
Part of the core of GIST

COURSE DESCRIPTION

This course explores the art and science of representing a geographical area on a map. With GIS software, students analyze and visualize spatial data using traditional and cutting-edge techniques. Students apply principles of cartographic design to further their technical expertise in spatial science by creating web maps, thematic maps, cartographic figures for reports, and topographic maps using GIS data from various sources. Students develop portfolios of maps that are aesthetically appealing, practical, and effective.

Prerequisites: GC 335, or instructor's permission

01: LEC: T 3:00 PM-3:50 PM LEC: R 3:00 PM-4:40 PM 02: LAB: T 4:00 PM-5:40 PM













This course provides students with the opportunity to learn and experience field data collection techniques to supplement their knowledge of geology, geologic processes, petrology and geomorphology. Students will travel to geological sites in Marquette County to learn to describe rock outcrops, collect strike and dip data, conduct level loop surveys, prepare field maps, sample soil on a drill rig, collect depth-to-groundwater data, and perform groundwater pump tests.

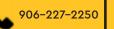
Notes: Formerly GC 260. Field work may be required. Contact instructor for more information.

Prerequisites: GC 225 and GC 255.

01: LEC: M 11:00 AM-12:40 PM LEC: W 11:00 AM-11:50 AM 02: LAB: W 12:00 PM-1:40 PM











GC 385

WEATHER & CLIMATE

Dr. Norma Froelich

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Elective option for Pollution Control and Water Resources concentrations of ENV

COURSE DESCRIPTION

This course provides students with an advanced examination of the science of the Earth's atmosphere. Students will develop their knowledge relating to the processes in the atmosphere that are responsible for weather and longer term climate patterns. In addition, students will examine and interpret different types of scientific and meteorological data, the natural and human-made causes of climate variations and change, as well as the interactions between the atmosphere and human activities.

Prerequisites: GC 100, MA 111 or higher, or instructor's permission

O1: LEC: T 11:00 AM-12:40 PM
LEC: R 11:00 AM-11:50 AM
O2: LAB: R 12:00 PM-1:40 PM









GC 424

Environmental Justice

Dr. Sarah Mittlefehldt

COURSE DESCRIPTION

The course examines how race, class, and gender have influenced environmental decision-making, and explores how groups of people that have been disproportionately affected by environmental problems have organized to address those issues. We examine how laws and policies contributed to environmental injustice, and how have they been used to achieve environmental and social equality. Students develop deeper understandings of the history of the environmental justice movement, contemporary environmental justice issues, and directions forward for the field.



01: MW 10:00 AM-11:40 AM



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Elective option for

ENSS

GC 431 GC 531

LANDSCAPE Dynamics and Analysis

Dr. Adam T. Naito

COURSE DESCRIPTION

This course introduces students to fundamental topics in landscape ecology, the field concerned with the analysis of the relationship between ecological processes and spatial patterns on the Earth's surface at landscape scales. Students will become proficient with key concepts, methods of analysis, and their importance in land management and conservation. Students will use analysis operations and their theoretical underpinnings to explore pattern-process relationships relating to vegetation, climate, habitat fragmentation, fire, and invasive species.

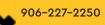
Notes: Field work is required during scheduled labs.

Prerequisites: GC 100 or BI 112, and GC 335; or instructor permission

01: LEC: M 3:00 PM-3:50 PM W 3:00 PM-4:40 PM 02: LAB: M 4:00 PM-5:40 PM











Elective

ENSS

GIST

option for

EART

ENV



Gender and Environment

Dr. Ryan Stock

COURSE DESCRIPTION

This course explores gender and the environment from an intersectional perspective. Through case studies ranging from the local to the global scale, we will discuss power, politics, identities, inequalities, social movements and ecological crises. This interdisciplinary course is for environmentalists, feminists, and any student curious about the interconnections between global environmental change and gender relations.



01: TR 1:00 PM-2:40 PM



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Elective

ENSS

option for

GC 465

Hydrology

STAFF

Required for Air and Water Resources concentration of EART

Elective option for Applied Geology, Natural Hazards, and Earth Systems Analysis concentrations of EART

Required for Water Resources concentration of ENV

Elective option for Pollution Control and Remediation and Natural Resources concentrations of ENV

COURSE DESCRIPTION

Hydrology provides students with an advanced understanding of physical and chemical water properties and how they relate to the Earth and environmental sciences. This course examines storage and transport of water in the ground, on the surface, and in the atmosphere, as well as the human dimensions of water resources, including management, water quality and natural hazards. Students will be able to perform professional hydrological sample collection, data analysis and resource assessment techniques. Students will attend formal lectures infused with

informal discussions and applied exercises, and will gain professionally relevant knowledge skills and abilities through field-, analytical-, and computation-based labs.

Notes: Field work is required. Contact instructor for more information.

Prerequisites: GC 100 or GC 101 or BI 210, MA 111 or higher, and junior standing, or instructor's permission.

70: Hybrid: R 2:00 PM-2:50 PM **01:** Lab: R 3:00 PM-4:40 PM





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The Earth and Environmental Science Capstone Research course enables students to leverage upon the knowledge, skills, and abilities they have accumulated as majors in Earth Science or Environmental Science. Through formal lectures, discussions, exercises, and hands-on activities, students will learn how to execute a research design, identify data collection strategies, interpret and evaluate scientific data, and comprehend peer-reviewed research, culminating in the execution and presentation of their own professional research project.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: GC 205, GC 235, GC 335, and 24 GC credit hours; junior standing, or instructor's permission



01: F 9:00 AM-12:20 PM



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GC 489

Human-Environment Capstone

Dr. Sarah Mittlefehldt

COURSE DESCRIPTION

The Human-Environment Capstone course enables students to apply the knowledge, skills and abilities they have developed as majors in geography- and environmental-related disciplines. Through lectures, discussions, exercises and hands-on activities, students will examine peer-reviewed research relating to human-environment relationships. Students will develop a research question, design a project, collect data, interpret and evaluate information and summarize the findings of their final capstone project orally and in writing. This course also includes professional development opportunities.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: GC 205, GC 235, and 24 GC credit hours; junior standing, or instructor's permission



01: TR 10:00 AM-11:40 AM



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Internships are increasingly important in preparing students for careers. They help students apply skills and knowledge learned in the classroom to real world situations, explore a given profession and gain practical experience in the working world. Once a student has identified an organization for which they will intern, they will work with their organizational supervisor and the EEGS Department to complete satisfactory documentation detailing their internship experience and performance in order to earn credit.

Prerequisites: Overall grade point average of 2.75 and 88 credit hours or instructor's permission.





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Directed Studies credit permits students to work with a faculty member on a specialized topic or project that enhances a student's professional development involving research, practical experience and/or community engagement. Once a student has identified a faculty member who will serve as the instructor of record, they will engage in that work and complete a set of deliverables commensurate with the nature of the topic and number of credits of the course.

Prerequisites: Major in earth science, environmental science, environmental studies and sustainability or geographic information science and technology; or one of the department's minors; junior standing, or instructor's permission.











ABOUT US

EcoReps is a fully funded interdisciplinary education program designed to give students the resources and knowledge to solve sustainability issues on-campus and in the larger community. Reps become informed and empowered peer-to-peer educators.





NORTHERN MICHIGAN UNIVERSITY





Gamma Theta Upsilon

The International Geographical Honor Society

suziegle@nmu.edu

QUALIFICATIONS FOR GTU

Each semester, students who meet the following criteria are invited to join:

- Successful completion of at least 3 semesters of college coursework AND 3 GC courses.
- A minimum GPA of 3.3 ("B" average) in GC courses; in top 35% of class.





NORTHERN MICHIGAN UNIVERSITY







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ABOUT US

The NMU Conservation Crew is a student-led organization dedicated to preserving local land, uniting students and the Marquette community, and enhancing the public's environmental knowledge.







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GOAL

The Northern Michigan University Hoop House serves as a collaborative learning center for eaters of all ages who are curious about where food comes from and how it it grown. Through research and education on sustainable agriculture, the project aims to expand our local food system improve food security and increase access to fresh, healthy produce. The project aims to help current farmers, potential farmers and the greater community learn more about sustainableagriculture practices and using hoop houses to extend the growing season in a northern climate.



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GOAL

The goal of NMU's Outdoor Learning Area (OLA) is to promote educational and recreational experiences by creating and managing sustainably designed multi-use outdoor spaces on campus and through instructive outreach. The OLA consists of the following areas: 1) Native Plant Park; 2) GeoPark; and 3) Eco-Park.



Students, faculty, and staff can:

- Engage in scientific hands-on examination of the phsyical and natural environment.
- Participate in native plant restoration and promote native pollinator species.
- Enjoy a relaxing lunch or study break.
- Explore natural and constructed spaces through coursework and research.





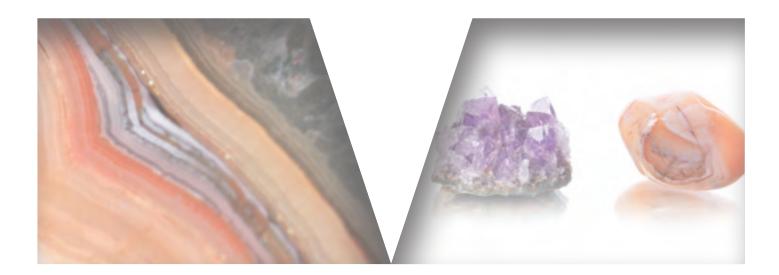






ABOUT US

Rock and Mineral Club is a student organization focusing on the geology of our Marquette home. We have many outings throughout the year to put us one-on-one with the history and awesome geologic features right here in our backyard!





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