

# ENVIRONMENTAL SCIENCES (ENV)

## ENV 101 - Introduction to Environmental Science

**Credit Hours: 4, Contact Hours: 5**

Division: Science Math

This course introduces students to a broad range of environmental issues, and the science behind those issues with the intent to promote a more sustainable future. Local, regional, national, and global issues will be discussed that pertain to natural resource management, pollution prevention, climate change, and the effects on ecological systems and biodiversity. Group 1 course. Quantitative Reasoning.

Required Prerequisite(s): MTH 100 or equivalent may be taken concurrently

Recommended Prerequisite(s): ENG 111

## ENV 101L - Intro to Enviro Science Lab

**Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See catalog description for ENV 101 Quantitative Reasoning.

Corequisites: ENV 101

## ENV 103 - Earth Science

**Credit Hours: 4, Contact Hours: 5**

Division: Science Math

Designed for the student who does not intend to major in a physical science. Subject matter deals with features of the planet Earth, astronomy, and weather. The laboratory portion includes a practical study of rocks and minerals as well as a study of topographic, geologic and weather maps. Field trips investigate landforms in the Grand Traverse area. Group 1 lab course. Quantitative Reasoning.

Required Prerequisite(s): MTH 100 or equivalent

Recommended Prerequisite(s): ENG 111

Corequisites: ENV 103L

## ENV 103L - Earth Science Lab

**Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See ENV 103 for course description.

Corequisites: ENV 103

## ENV 104 - Life of the Past

**Credit Hours: 4, Contact Hours: 5**

Division: Science Math

This course introduces students to the record of life on Earth. The roles of global change, origins, evolution, and extinction in life history are examined. Great Lakes and North American fossil records with Precambrian microorganisms and Paleozoic invertebrates and vertebrates are highlighted. Appearance, evolution, and disappearance of dinosaurs during the Mesozoic Era, human evolution, and the recent demise of the giant Ice Age mammals are analyzed in depth. Laboratory and class activities are included. Group 1 lab course. Quantitative Reasoning.

Required Prerequisite(s): MTH 100 or equivalent

Recommended Prerequisite(s): ENG 111

Corequisites: ENV 104L

## ENV 104L - Life of the Past Lab

**Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See ENV 104 for course description.

Corequisites: ENV 104

## ENV 111 - Physical Geology

**Credit Hours: 4, Contact Hours: 5**

Division: Science Math

This course explores processes which transform planet Earth. Landforms, minerals, rocks, and geologic structures are examined in classroom, laboratory, and field studies, which focus on these geologic processes, and on the techniques of geology. Lab studies apply the methodology and techniques of geology by introduction of map reading, field and map study, study of surficial processes, and study of minerals and rocks.

Group 1 lab course. Quantitative Reasoning.

Required Prerequisite(s): MTH 100 or equivalent

Recommended Prerequisite(s): ENG 111

Corequisites: ENV 111L

## ENV 111L - Physical Geology Lab

**Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See ENV 111 for course description.

Corequisites: ENV 111

## ENV 112 - Historical Geology

**Credit Hours: 4, Contact Hours: 5**

Division: Science Math

Rocks and fossils of North America, the Great Lakes and the Grand Traverse region which reveal the physical, chemical, and biological evolution of the planet Earth are explored in classroom, laboratory, and field studies (including a required 4-day field excursion to Elliot Lake, Ontario). Group 1 lab course. Quantitative Reasoning.

Required Prerequisite(s): MTH 100

Recommended Prerequisite(s): ENV 103 or ENV 111 or GEO 105; ENG 111; MTH 111, MTH 120 or MTH 131

Corequisites: ENV 112L

## ENV 112L - Historical Geology Lab

**Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See ENV 112 for course description.

Corequisites: ENV 112

## ENV 117 - Meteorology & Climatology

**Credit Hours: 4, Contact Hours: 5**

Division: Science Math

Designed to acquaint the student with the science and art of weather analysis, this course includes studies of the basic properties of gases, organization and composition of the atmosphere, basic energy flow, and general weather phenomena that result. Global climates are also investigated. The laboratory portion presents the function and effect of selected physical processes, and includes the use of weather instruments and weather maps. Group 1 lab course. Quantitative Reasoning.

Required Prerequisite(s): MTH 111, MTH 120, or MTH 131 may be taken concurrently

Recommended Prerequisite(s): ENG 111

Corequisites: ENV 117L

**ENV 117L - Meteorology & Climatology Lab****Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See ENV 117 for course description.

Corequisites: ENV 117

**ENV 131 - Oceanography****Credit Hours: 4, Contact Hours: 5**

Division: Science Math

This course explores the origins, structure, and evolution of ocean basins and their role in global climate dynamics. It shall include an investigation of the physical properties that govern waves, currents, tides, air-sea interactions as well as the physical and chemical properties of seawater. It also explores plant and animal life within the oceans including impacts of human activities on the marine environment. Group 1 lab course.

Quantitative Reasoning.

Required Prerequisite(s): MTH 100

Recommended Prerequisite(s): ENG 111; MTH 111, MTH 120 or MTH 131

Corequisites: ENV 131L

**ENV 131L - Oceanography Lab****Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See ENV 131 for course description.

Corequisites: ENV 131

**ENV 140 - Watershed Science****Credit Hours: 4, Contact Hours: 5**

Division: Science Math

This course is designed for the learner who wishes to gain an in-depth understanding of watersheds. It will focus on the physical and biological systems that are responsible for the quality and characteristics of a watershed. Human interactions, stewardship, management and impacts on our local water resources will also be explored. The laboratory portion of the course will place emphasis on field investigations and the analysis of data and water samples collected. Basic scientific principles will be incorporated throughout the course. Group 1 lab course. Quantitative Reasoning.

Required Prerequisite(s): MTH 100 or equivalent

Recommended Prerequisite(s): ENG 111; MTH 111, MTH 120 or MTH 131

Corequisites: ENV 140L

**ENV 140L - Watershed Science Lab****Credit Hours: 0, Contact Hours: 0**

Division: Science Math

See ENV 140 for course description.

Corequisites: ENV 140

**ENV 270A - Michigan Basin Geology****Credit Hours: 2, Contact Hours: 3**

Division: Science Math

This course is a six-day field study of the Michigan Basin. The class focuses on the Paleozoic geologic history, fossil record, and economic geology of the lower Peninsula and eastern Upper Peninsula. The relationships of bedrock layers to recent surficial geologic processes and their associated landforms will be explored. Group 1 course.

Communications - Direct.

Required Prerequisite(s): Completion of any science course with laboratory and instructor permission.

Recommended Prerequisite(s): ENG 111, MTH 100

**ENV 270B - Field Mapping Techniques****Credit Hours: 2, Contact Hours: 3**

Division: Science Math

This course is a one-week field course. It will focus on the fundamentals of map interpretation and generation. Students will gain a basic understanding of the principles of cartography and field mapping techniques employed by various disciplines in the acquisition of spatial data. Group 1 course. Quantitative Reasoning.

Required Prerequisite(s): MTH 111, MTH 120, or MTH 131, instructor permission required

Recommended Prerequisite(s): ENG 111, completion of any Science course with laboratory

**ENV 270C - Precambrian Geology of MI****Credit Hours: 2, Contact Hours: 3**

Division: Science Math

This course is a six-day field study of the Precambrian geology of the western Upper Peninsula of Michigan. The class will focus on rock and mineral identification, economic geology, and the geologic history of Michigan's Upper Peninsula. The relationships of ancient bedrock layers to recent surficial geologic processes and their associated landforms will also be explored. Group 1 course. Communications - Direct.

Required Prerequisite(s): Completion of any science course with laboratory and instructor permission.

Recommended Prerequisite(s): ENG 111, MTH 100

**ENV 293 - Environmental Science Study Abroad****Credit Hours: 1, Contact Hours: 1**

Division: Science Math

In this class, students are provided the opportunity to travel to a specified destination affiliated with the corresponding environmental science non-trip course. This course will serve to integrate the student learning experience and provide a sense of cultural perspective, diversity and regional awareness. The course is an opportunity for students to explore other areas around the world while applying discipline-specific course content. For a more specific course description, please review the course description of the associated non-trip course. Group 2 course.

Required Prerequisite(s): Any ENV or BIO course with a lab.