Environmental Sciences BS and Minor

Environmental Sciences

College of Science, Engineering & Technology
Department of Biological Sciences
242 Trafton Science Center S • 507-389-2786
Website: http://cset.mnsu.edu/biology/programs/ugrad/envrsciences.html

Chair: Penny Knoblich
Program Coordinator: Beth Proctor, Ph.D.
507-389-5697

Environmental Sciences is an applied science designed to study interactions among biological, chemical and physical components of the environment. Major areas of focus include water quality, climate change, biodiversity, and environmental assessment with an emphasis on experiential learning through research and/or internships. This program is oriented towards helping students develop skills for leadership positions in industry, consulting firms, government and environmental groups, as well as providing a foundation for individual community involvement as an informed citizen.

Academic Map/Degree Plan at www.mnsu.edu/programs/#All

Policies/Information
Admission to Major is granted by the department. Admission requirements are: 32 earned credit hours including BIOL 105 and BIOL 106 with a grade of “C” in both BIOL 105 and BIOL 106 plus a cumulative minimum GPA of 2.00.

P/N Grading Policy. All courses leading to a major or a minor in environmental sciences must be taken for letter grades.

Refer to the college regarding required advising for students on academic probation.

Residency Requirement. At least 20 credits of 300-400 level courses required for the Environmental Science major must be taken at Minnesota State Mankato. Fourteen of these 20 credits must include ENVR 440 [3 credits], ENVR 450 [3 credits], ENVR 460 [4 credits], and 1 credit for ENVR 498 (internship) OR ENVR 480 (Research).

GPA Policy. A minimum grade of “C” is required in all courses applied to the Environmental Sciences BS degree.

In addition to the specific requirements of the major, all university requirements must be met for graduation. This includes 120 credits of coursework, 40 credits of upper division courses (including those in the major), purple and gold course requirements, and two writing intensive courses.

Several scholarships in the Department of Biological Sciences are available for entering first year students and currently enrolled Minnesota State Mankato students who meet the requirements. Application deadline is in early February of each year.

ENVIRONMENTAL SCIENCES BS
Degree completion = 120 credits

Required General Education
BIOL 105 General Biology I [4]
Select one of the following math classes (choose 4 credits)
MATH 112 College Algebra [4]
MATH 115 Precalculus Mathematics [4]
MATH 121 Calculus I [4]

Select one of the following chemistry classes (choose 3-5 credits)
CHEM 106 Chemistry of Life Process Part I (General) [3]
CHEM 201 General Chemistry I [5]

Major Common Core
BIOL 106 General Biology II [4]
BIOL 410 Global Change Biology [3]
ENVR 440 Environmental Regulations [3]
ENVR 450 Environmental Pollution & Control [3]
ENVR 460 Analysis of Pollutants [4]
ENVR 470 Environmental Assessment [3]

Major Restricted Electives
Select one of the following classes (choose 1-6 credits)
ENVR 480 Senior Research [1-6]
ENVR 498 Internship [1-6]

SELECT ONE OF THE FOLLOWING CATEGORIES (TOTAL CREDITS)

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COURSE DESCRIPTIONS

ENV 101 (4) Perspectives in Environmental Science
This course is designed to introduce students to the complex field of environmental science. Reading assignments, lectures, discussions and other class assignments will introduce students to the structure and functions of ecosystems, the concept of sustainability, issues in environmental protection with an emphasis on global commons, the interrelationships between environment, culture, government and economics and what individuals or groups can do to influence environmental policy/rules.
Fall, Spring
GE-8, GE-10

ENV 440 (3) Environmental Regulations
This is a lecture course introducing students to major federal environmental laws and regulations. Discussions include the case(s) that prompted the enactment of various environmental legislation as well as intent and implementation of the legislation. Both Federal and State of MN environmental statutes will be discussed.
Fall

ENV 450 (3) Environmental Pollution & Control
This is a lecture course that introduces students to sources and controls for pollutants in air, water, and soils including hazardous waste. Chemical and biological mechanisms that are important in nature and used to control/treat various types of pollutants are emphasized. Strongly recommended that this course be taken immediately after completing 1 year of Chemistry.
Prerequisite: 1 year CHEM
Fall

ENV 460 (4) Analysis of Pollutants
The purpose of this lecture/lab class is to introduce students to standard practices and procedures used in sampling and analysis of environmental matrices and to develop an environmental research project. Standard quality control/quality assurance procedures per EPA are emphasized.
Spring

ENV 470 (3) Environmental Assessment
Introduces students to National Environmental Policy Act and requirements for Environmental Impact Statements and Environmental Assessment Worksheets. Phase I Environmental Assessment of land and buildings, an international perspective on environmental assessments, and economic and social impact assessment are discussed.
Prerequisite: ENV 440
Spring

ENV 480 (1-6) Senior Research
Participate in an independent research project with advisory support and with a focus on the student's career objectives.
Fall, Spring

ENV 498 (1-6) Internship
Only three credits can be counted toward major. Experience in applied Environmental Sciences according to a prearranged training program.
Fall, Spring

ENV 499 (1-6) Individual Study
Individual Research Project.
Fall, Spring