



UPPER IOWA UNIVERSITY

Established in 1857

# Environmental Science

The Environmental Science major at Upper Iowa University is a two-track program that draws on the diversity within the broad field of environmental science. Students enrolled in the program can choose from two tracks depending on their areas of interest: biosciences or geosciences. The biosciences track focuses on biological systems and ecological approaches. The geosciences track focuses on earth materials and surface geological processes. The broad focus of the Environmental Science major curriculum provides the background and training necessary to deal with diverse environmental problems that graduates will face in the work force.

## Environmental Science — Biosciences Track

ES 100: Introduction to Geology  
ES 101: Introduction to Geology Lab  
ES 161: Introduction to Environmental Science  
ES 220: Soil and Water Conservation  
ES 310: Remote Sensing and Environmental Analysis  
ES 320: Introduction to Geographic Information Systems  
ES 326: Soil Genesis, Classification, and Morphology\*  
BIO 110: General Zoology  
BIO 120: General Botany  
BIO 210: Microbiology\*  
BIO 315: Ichthyology\*  
BIO 335: Ecology  
BIO 361: Environmental Policy and Ethics  
BIO 393: Herpetology\*  
BIO 410: Plant Taxonomy\*  
BIO 490: Entomology\*  
BIO 496: Senior Project  
CHEM 115: Environmental Chemistry\*\*  
CHEM 152: General Chemistry II\*\*

\*Choose three of the listed courses.

\*\*Choose one of the listed courses.

## Environmental Science — Geoscience Track

BIO 110: General Zoology  
BIO 120: General Botany  
BIO 335: Ecology  
BIO 361: Environmental Policy and Ethics  
BIO 496: Senior Project  
CHEM 151: General Chemistry I  
CHEM 152: General Chemistry II  
ES 100: Introduction to geology  
ES 101: Introduction to Geology Lab  
ES 161: Introduction to Environmental Science  
ES 220: Soil and Water Conservation  
ES 310: Remote Sensing and Environmental Analysis  
ES 316: Geomorphology  
ES 320: Introduction to Geographic Information and Systems  
ES 326: Soil Genesis, Classification, and Morphology  
ES 471: Hydrogeology  
GEOG 100: Physical Geography  
MATH 111: Pre-Calculus  
MATH 220: Elementary Statistics

## Research

All Environmental Science majors are required to develop a senior project. Working with their advisor, students conduct a literature review of their chosen subject and use the review materials to formulate their proposed research. This culminates in a written report and oral presentation to the science faculty. Some examples of research projects completed by students include:

- **Jenny Lawler**  
*Benthic Invertebrates as Indicators of Water Quality in Grannis Creek*
- **Jeremy Venghaus**  
*The Effects of Over-fertilization on Soils and Some Possible Means of Solving the Problem*

## Career Opportunities

Environmental Science majors have the opportunity to pursue many career avenues. Some possible avenues include:

### State and Local Governmental Agencies:

- Bureau of Land Management
- National Park Service
- Natural Resources Conservation Service
- State and Local Wildlife and Conservation Boards
- U.S. Fish and Wildlife Service

### Private Consulting Firms:

- Civil Engineering Firms
- Environmental Consulting Firms

Upper Iowa University graduates are currently employed by conservation agencies in Iowa as well as Illinois, Colorado, and Idaho.

## Classrooms & Equipment

4 Garmin eTREX Venture GPS Receivers  
16 foot Jon Boat  
36 binocular microscopes  
48 monocular microscopes  
1500 sq. foot greenhouse  
ArcView 8.3  
Digital Camera  
FT-IR spectrophotometer  
Hydrolab water quality multiprobe and field computer  
PCI Geomatica Remote Sensing software  
Pleggenkuhle Prairie — 3 acres of virgin prairie managed by UIU  
Research grade compound microscope and research stereoscope  
Scanning electron microscope  
Transmission electron microscope  
Turbidity meter  
UV-VIS spectrophotometer  
Water quality lab equipped to monitor nitrogen, phosphorus, and suspended solids

## Faculty

**Dr. Jeffery Butikofer,**  
*Assistant Professor of Environmental Science*

B.S. Upper Iowa University  
Ph.D. University of Wyoming

**Dr. Lew Churbuck,**  
*Associate Professor of Biology*

B.A. Upper Iowa University  
M.A. University of Northern Iowa  
Honorary Doctorate, Upper Iowa University

**Dr. Scott Figdore,**  
*Professor of Science*

B.S. Penn State University  
M.S., Ph.D. University of Wisconsin

**Dr. Rick Klann,**  
*Delano Professor of Science*

B.A. Westminster College  
M.A., Ph.D. University of Missouri

**Dr. Katherine McCarville,**  
*Assistant Professor of Geosciences*

B.S. University of California  
M.Sc. Colorado School of Mines  
Ph.D. South Dakota School of Mines and Technology

**Dr. Erik Olson,**  
*Professor of Chemistry*

B.A. Juanita College  
Ph.D. Dartmouth College



## Office of Admissions

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