



# Environmental Science

## About this Composite Major

The Environmental Science program prepares students to enter the job force in an environmental-related field, or to further their education in graduate school. This major integrates courses from all of the major fields of science - geology, biology, chemistry, and physics—so it is well-suited for those who are interested in environmental issues, as well as students who enjoy all subjects in science, but prefer not to focus on one specific area.

Many of the courses in the Environmental Science major at VCSU involve frequent field trips to provide hands-on experience. Faculty also encourage students to participate in research projects or internships during the school year and the summer. The Student Opportunities for Academic Research (SOAR) program provides competitive research stipends, and several faculty members in the Science Department also have access to grants to fund student work. Faculty actively help students to search for and apply for internships and jobs with local environmental companies and state and federal agencies. Additionally, guest lecturers from agencies frequently visit classes to discuss employment opportunities.

## Meet a Student

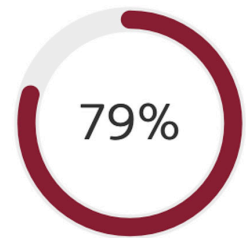


*“I went on a trip to the Boundary Waters with my professor for an archaeological dig. While there, I was able to put my soils and geology knowledge to use. My classroom experience has been phenomenal. Environmental Science is such a well-rounded discipline that our teachers really utilize that aspect. We are able to talk about the biology, chemistry, ecology, economics, philosophy, politics and so much more!” —Michaela Halvorson, Milnor, N.D.*

## Career Opportunities

**73,391**  
**jobs**

posted in this field in the last  
year



of jobs in this field require a  
bachelor's degree

Graduates of the program will gain the education and experiences necessary to work in a wide variety of well-paying fields, including environmental consulting, natural resource management, the energy industry, public health, and many others. Have a voice in the arena on current issues such as governmental policies, climate change, or economics with your Environmental Science degree.

Career opportunities include:

- Forest or Conservation Technician
- Environmental Regulatory Technician
- Health, Safety and Environment Specialist
- Conservation Scientist
- Park Ranger
- Environmental Planner/Scientist
- Environmental Engineering Technician
- Sustainability Specialist
- Environmental Compliance Specialist
- Compliance Officer/Analyst



## Get Involved in your Major



- Fisheries and Wildlife Conservation Club
- Pre-Professional Club

## Practical Experience

The Rhoades Science Center includes a greenhouse for work in biology and botany, a planetarium, and laboratories for earth science, biology, fisheries and wildlife, chemistry, and physics. Students have access to fully equipped Aquatic Macroinvertebrate and Biomedical Research laboratories, Prairie Waters Education and Research Center, the dam and reservoir at Lake Ashtabula, the Valley City National Fish Hatchery, weather stations, a river gauge station along the Sheyenne River, and two pontoon boats and a 20-foot sampling boat for biology and fisheries field trips.

## Technology and Research

Technology used by students in this major include:

- Global Information System (GIS) training
- Handheld X-ray fluorescence spectrometer
- Multiparameter water quality sonde
- Illuminometer

In addition, VCSU faculty have connections with area agencies, allowing students to work as interns or other research associates for various agencies. Some of these agencies include:

- North Dakota Department of Health
- USGS Northern Prairie Wildlife Research Center
- North Dakota Fish and Game Department
- USFWS Wetland Management District
- Soil Conservation District
- North Dakota State Extension Service
- North Dakota Parks and Recreation

## Contact Information

### Department Chair

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### Faculty Contact

Dr. Michelle Abshire, michelle.abshire@vcsu.edu, (701) 845-7455

### Department Location

Rhoades Science Center 203, (701) 845-7452

## Plan of Study

### First Year

Fall	Credits	Spring	Credits
CHEM 121 (Gen Ed)	5	BIOL 151	4
GEOL 100	4	CHEM 122	5
MATH 107 (Gen Ed)	4	Elective	3
UNIV 150	1	ENGL 125 (Gen Ed)	3
English Composition (Gen Ed)	3		
<b>17</b>		<b>15</b>	

### Second Year

Fall	Credits	Spring	Credits
BIOL 150 (Gen Ed)	4	Directed Elective	4
GEOL 315	4	GEOL 300	4
PHYS 161	4	HPER 100 (Gen Ed)	2
Social Science (Gen Ed)	3	MATH 146	3
		Speech Communication (Gen Ed)	3
<b>15</b>		<b>16</b>	

### Third Year

Fall	Credits	Spring	Credits
BIOL 375	4	Art and Music (Gen Ed)	3
Directed Elective	4	BIOL 360	3
Literacies (Gen Ed)	3	BIOL 440	4
Computer Science and Literacy (Gen Ed)	3	Elective	3
		Social Science (Gen Ed)	3
<b>14</b>		<b>16</b>	

### Fourth Year

Fall	Credits	Spring	Credits
Additional Humanities or Social Science (Gen Ed)	2	BIOL 455	4
BIOL 491	2	Directed Elective	4
Directed Elective	4	Elective	4
Elective	4	GEOL 416	4
<b>12</b>		<b>16</b>	

**Total Credits 121**



Please note: This plan is intended for general information only. Students are strongly encouraged to meet with their academic advisor each semester before registration.

## **Learning Outcomes**

On completion of the Environmental Science Program the student should be able to:

1. Understand the natural environment and its relationship with human activities
2. Exhibit critical thinking skills by applying the scientific method to solve problems
3. Exhibit the ability to read and communicate in a scientific style
4. Understand how to implement scientific research strategies, such as collecting, managing, and interpreting data.