

## ENVIRONMENTAL SCIENCES

Program Director: John Schalles

Program Office: Hixson-Lied Science Building, Room 504

Professors: T. Burk, C. Harper, J. Platz, J. Schalles, J. Zehnder;  
Associate Professors: J. Ault, A. Cullum, G. Michels, G. Ramsden, J. Schrage, M. Vinton;  
Assistant Professors: M. Anderson, J. Martinelli.

**Department Description:** The Environmental Sciences Major introduces students to a wide range of integrated coursework within the natural and physical sciences. The major is aimed at providing career opportunities related to environmental issues and in providing a broad background for graduate work within the natural and physical sciences. The major offers three distinct tracks: (1) Global Environmental Systems which explores ecological and climatological aspects of the integrated earth system, (2) Organismal/Population Ecology which emphasizes biological aspects of the environment and, (3) Environmental Policy and Society which addresses historical political and sociological aspects of environmental issues.

**Web Contact/Information:** Additional information about this department may be found at <http://evs.creighton.edu/>. However, for definitive details, students are strongly encouraged to check the University's website for Bulletin changes at <http://www.creighton.edu/Registrar>.

### PROGRAMS IN ENVIRONMENTAL SCIENCE

**Specific Requirements for Admission to the Environmental Science Major:** Successful completion of ATS 113 or BIO 211 or CHM 203 and CHM 204.

#### ***B.S. Evs., Major in Environmental Science: 45 Credits***

##### *Course Requirements*

*The following courses are required for all tracks. In addition, the students must choose one track.*

##### **(All of the following:)**

EVS 113	Introduction to Atmospheric Sciences	3 credits
EVS 114	Introduction to Atmospheric Sciences Laboratory	1 credit
EVS 355	Environment and Society	3 credits
EVS 390	Environmental Science	3 credits
EVS 491	Senior Seminar	2 credits
EVS 533	Physical Climatology and Climate Change	3 credits
BIO 211	General Biology: Molecular and Cellular	4 credits
BIO 212	General Biology: Organismal and Population	4 credits
CHM 203	General Chemistry I	3 credits
CHM 204	General Chemistry Laboratory I	1 credit
CHM 205	General Chemistry II	3 credits
CHM 206	General Chemistry Laboratory II	1 credit

#### *Global and Environmental Systems Track*

##### **(Fourteen credits from the following:)**

EVS 341	General Botany	4 credits
EVS 385	The Ecology, Geography and Health of Lakes	4 credits
EVS 435	Coastal and Estuarine Ecology	4 credits
EVS 440	Field Biology of the Desert Southwest	4 credits
EVS 443	Environmental Geology	4 credits
EVS 481	Terrestrial Ecology	4 credits
EVS 485	Marine and Freshwater Ecology	3 credits
EVS 486	Freshwater Ecology Laboratory	1 credit
EVS 487	Marine Ecology Laboratory	2 credits
EVS 544	Hydrology	3 credits
EVS 552	Boundary Layer Meteorology	3 credits
EVS 553	Tropical Meteorology	3 credits
EVS 556	Introduction to Physical Oceanography	3 credits

*Organismal/Population Ecology Track*

**(Fourteen credits from the following:)**

EVS 335	Zoology	4 credits
EVS 341	General Botany	4 credits
EVS 351	Microbiology	4 credits
EVS 385	The Ecology, Geography and Health of Lakes	4 credits
EVS 435	Coastal and Estuarine Ecology	4 credits
EVS 440	Field Biology of the Desert Southwest	4 credits
EVS 443	Environmental Geology	4 credits
EVS 481	Terrestrial Ecology	4 credits
EVS 483	Vertebrate Natural History Lecture	3 credits
EVS 484	Vertebrate Natural History Laboratory	1 credit
EVS 485	Marine and Freshwater Ecology	3 credits
EVS 486	Freshwater Ecology Laboratory	1 credit
EVS 487	Marine Ecology Laboratory	2 credits
EVS 539	Ecology of Zoonotic Diseases	3 credits
EVS 549	Environmental Physiology	3 credits
EVS 561	Entomology	4 credits
EVS 571	Animal Behavior	3 credits
EVS 572	Animal Behavior Laboratory	2 credits
EVS 581	Evolution	4 credits

MTH 245, PHY 211 and PHY 212 are highly recommended and may be required for students planning on attending specific graduate programs.

*Environmental Policy and Society Track*

**(Fourteen credits; at least 3 credits from Group B:)**

**Group A:**

EVS 307	Demography: World Population Issues	3 credits
EVS 333	Environmental Politics and Policy	3 credits
EVS 353	Environmental Economics	3 credits
EVS 354	Environmental Ethics	3 credits
EVS 355	Environment and Society	3 credits
EVS 452	Science, Media, And Risk	3 credits
EVS 454	Environmental Philosophy	3 credits
EVS 455	Food, Society And Environment	3 credits
EVS 470	Introduction to Geographic Information Systems	4 credits

**Group B:**

EVS 385	The Ecology, Geography and Health of Lakes	4 credits
EVS 443	Environmental Geology	4 credits
EVS 481	Terrestrial Ecology	4 credits
EVS 506	Environmental Chemistry	3 credits
EVS 523	Environmental Toxicology	3 credits

*ENVIRONMENTAL SCIENCE MINOR*

**Program Description:** The Environmental Science minor explores a wide range of scientific inquiry associated with the physical and social sciences. Students may choose to construct a broad-based minor with course work from a number of participating departments or from a set of courses that emphasize a specific field (e.g. Global Change Issues). The minor is designed for students interested in pursuing careers within environmental education, environmental law or environmental monitoring and regulation. The minor is suited to journalism and mass communication students who desire a broad background in environmental issues covered by the mass media.

**Contact:** Director, Environmental Science Program

**(One of the following:)**

ATS 113	Introduction to Atmospheric Sciences	3 credits
<i>And</i>		
ATS 114	Introduction to Atmospheric Sciences Lab	1 credits
BIO 211	General Biology: Molecular and Cellular	4 credits
BIO 212	General Biology: Organismal and Population	4 credits
CHM 112	Fundamentals of Biological Chemistry	3 credits
<i>And</i>		
CHM 113	Fundamentals of Biological Chemistry Lab	1 credits
CHM 203	General Chemistry I	3 credits
<i>And</i>		
CHM 204	General Chemistry I Lab	1 credits

**(Fourteen credits from the following:\*)***Atmospheric Sciences*

EVS 443	Environmental Geology	4 credits
EVS 533	Physical Climatology and Climate Change	3 credits
EVS 544	Hydrology	3 credits
EVS 553	Tropical Meteorology	3 credits
EVS 555	Meteorological Remote Sensing	3 credits
EVS 556	Introduction to Physical Oceanography	3 credits

*Biology*

EVS 335	Zoology	4 credits
EVS 341	General Botany	4 credits
EVS 385	The Ecology, Geography and Health of Lakes	3 credits
EVS 390	Environmental Science	3 credits
EVS 435	Coastal and Estuarine Ecology	4 credits
EVS 440	Field Biology of the Desert Southwest	4 credits
EVS 481	Terrestrial Ecology	4 credits
EVS 483	Vertebrate Natural History Lecture	3 credits
EVS 484	Vertebrate Natural History Laboratory	1 credit
EVS 485	Marine and Freshwater Ecology	3 credits
EVS 486	Freshwater Ecology Laboratory	1 credit
EVS 487	Marine Ecology Laboratory	2 credits
EVS 523	Environmental Toxicology	3 credits
EVS 549	Environmental Physiology	3 credits

*Other Courses*

EVS 307	Demography: World Population Issues	3 credits
EVS 333	Environmental Politics and Policy	3 credits
EVS 354	Environmental Ethics	3 credits
EVS 355	Environment and Society	3 credits
EVS 506	Environmental Chemistry and Natural Resources	3 credits
EVS 491	Senior Seminar	1 credit

\*No more than two courses may be chosen from any group.

**ENVIRONMENTAL POLICY MINOR**

**Program Description:** The Environmental Policy minor focuses on the ethical, cultural, political, economic, and scientific factors that facilitate or impede environmental problem-solving. The minor provides students with a grasp of national and international environmental laws and policies designed to address current environmental concerns. Students will study the political and cultural contexts that shape the relationship between human interests and environmental concerns, including the roles played by science, government, business, and civil society.

**Contact:** Director, Environmental Science Program

<b>(All of the following:)</b>		
EVS 333	Environmental Politics and Policy	3 credits
EVS 354	Environmental Ethics	3 credits
EVS 355	Environment and Society	3 credits
<b>(One of the following:)</b>		
ATS 113	Introduction to Atmospheric Sciences	3 credits
CHM 105	Introductory Chemistry	3 credits
EVS 210	Surviving on the Earth: Geological Hazards and Society	3 credits
EVS 390	Environmental Science	3 credits
EVS 443	Environmental Geology	4 credits
PHY 187	Introduction to Physics	3 credits
<b>(One of the following:)</b>		
ATS 113	Introduction to Atmospheric Sciences	3 credits
<i>And</i>		
ATS 114	Introduction to Atmospheric Sciences Lab	1 credits
BIO 211	General Biology: Molecular and Cellular	4 credits
BIO 212	General Biology: Organismal and Population	4 credits
CHM 203	General Chemistry I	3 credits
<i>And</i>		
CHM 204	General Chemistry I Lab	1 credits
<b>(One of the following:)</b>		
EVS 307	Demography: World Population Issues	3 credits
EVS 353	Environmental Economics	3 credits
EVS 374	Management of Environmental Risk	3 credits
EVS 452	Science, Media and Risk	3 credits
EVS 455	Food, Society and Environment	3 credits
PHL 453	Ethics and Public Policy	3 credits

**Certificate Programs in University College**

This department offers one certificate program in Environmental Science to students in University College. See the description for this certificate on page 292 in the University College section of the Bulletin.

**For all EVS courses, please refer to page 382.**