

BACHELOR OF SCIENCE / BACHELOR OF ARTS IN ENVIRONMENTAL SCIENCE

OVERVIEW

Environmental scientists study the physical characteristics of the earth, and use their findings to protect the world we live in and harbor its natural resources. From the water we drink and the air we breathe to the fuel that runs our cars and industries, environmental scientists work to eliminate harmful pollutants and identify ways of keeping the environment clean and healthy for everyone.

OBJECTIVES

The Bachelor of Arts degree program in Environmental Science is a course of study that prepares students for technical careers in natural resource conservation, natural resource management, conservation law enforcement and waste management. Majors gain a strong background in environmental science with core courses in the environmental and biological sciences. This background is strengthened by courses in chemistry and earth science.

The Bachelor of Science in Environmental Science program is designed for students who are interested in pursuing an advanced degree in Biology and Chemistry, with practical applications to the environment, or desire the more rigorous credentials of a B.S. degree. The degree emphasizes the interdisciplinary nature of Environmental Science, which combines aspects of both biology and chemistry but emphasizes either an ecological or chemical track. Such a degree can be used for jobs with state and local conservation departments and organizations, non-government organizations, environmental protection agencies, and organizations involved in the regulation, transportation and disposal of hazardous materials.

Field projects include exploring the biodiversity of the water column in local lakes and streams, and assessing the stream environmental health using biological indicators. Field trips to Morton Arboretum expose the students to prairie restoration activities taking place in the community. To date, environmental science students have held internships at Midewin Tallgrass Prairie and in the private sector performing environmental restoration and exotic species management projects.

INDUSTRY OUTLOOK

According to the U.S. Department of Labor, employment in the field of environmental science is expected to increase between 21 percent and 35 percent by the year 2012. Public policy is the driving force behind this job growth as industries ranging from mining to health care need to adhere to current and new state and federal environmental protection regulations.

Local, state and federal government employs more than 50 percent of environmental scientists. Job opportunities also are available in the following fields:

- Architecture
- Engineering
- Scientific and Technical Consulting
- Education

CONTACT

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ADDITIONAL WEB SITES FOR FURTHER INFORMATION

Air and Waste Management Association – www.awma.org

Environmental Science and Technology Online –
www.pubs.acs.org/journals/esthag

Illinois Environmental Protection Agency –
www.epa.state.il.us

Lewis University – www.lewisu.edu

National Institute of Environmental Health Sciences –
www.niehs.nih.gov

National Oceanic and Atmospheric Association –
www.noaa.gov

Office of Hazardous Materials Safety – www.hazmat.dot.gov

Sierra Club – www.sierraclub.org

U.S. Department of Agriculture Natural Resource
Conservation Service – www.nrcs.usda.gov

U.S. Department of Energy – www.energy.gov

U.S. Environmental Protection Agency – www.epa.gov

U.S. Fish and Wildlife Service – www.fws.gov

BACHELOR OF SCIENCE / ENVIRONMENTAL SCIENCE

Total Credit Hours: 128
Ecology Credit Hours: 68
Chemistry Credit Hours: 60-63

I. Core Courses required of both Ecology Track and Chemistry Track majors: (37)

- 02-110 General Biology I (4) and (02-111) Lab (1)
- 02-115 General Biology II (4) and (02-116) Lab (1)
- 02-222 Earth Science (4)
- 02-233 Principles of Environmental Science (4)
- 02-320 Biometry (3)
- 02-375 Issues in Environmental Science (3)
- 03-120 Fundamentals of Organic Chemistry (3)
- 03-110 General Chemistry I (4) and (03-111) Lab (1)
- 03-115 General Chemistry II (4) and (03-116) Lab (1)

II. Ecology Track additional required courses: (31)

- 02-220 Genetics (4) and (02-221) Lab (1)
- 02-224 Microbiology (4) and (02-226) Lab (1)
- 02-315 General Ecology (3) and (02-316) Lab (1)
- 02-383 Ecology Journal Club (1)
- 02-495 Research Methods in Ecology and Environmental Science (2)
- 02-498 Field Biology (2)
- 13-200 Calculus I (4)

Ecology Track majors must chose 8 credit hours from the following list of electives:

- 02-260 Introduction to Geographic Information Systems (4)
- 02-405 Invertebrate Zoology (4)
- 02-416 Conservation Biology (3) and (02-417) Lab (1)
- 02-418 Limnology (3) and (02-419) Lab (1)
- 02-420 Botany (3) and (02-421) Lab (1)

III. Chemistry Track additional required courses: (23-26)

- 03-320 Analytical Chemistry I (3) and (03-321) Lab (2)
- 03-325 Instrumental Analysis (3) and (03-326) Lab (2)
- 03-340 Environmental Chemistry I (3) and (03-341) Lab (1)
- 03-342 Environmental Chemistry II (3) and (03-343) Lab (1)
- 03-450 Research (1-4)
- 13-120 Mathematical Analysis (4)

IV. For Ecology track majors, the advanced writing requirement of the General Education Curriculum is satisfied by successful completion of the following courses which contain strong writing components: General Biology Labs I and II (02-111 and 02-116), Microbiology Lab (02-226), and Research Methods in Ecology and Environmental Science (02-495). For Chemistry track majors, the advanced writing requirement of the General Education Curriculum is satisfied by successful completion of the following courses which contain strong writing components: General Chemistry I, General Chemistry II, Analytical Chemistry, and Instrumental Analysis.

BACHELOR OF ARTS / ENVIRONMENTAL SCIENCE

Total Credit Hours: 128

Major Credit Hours: 57

I. Core Courses (49)

- 02-110 General Biology I (4) and (02-111) Lab (1)
- 02-115 General Biology II (4) and (02-116) Lab (1)
- 02-220 Genetics (4) and (02-221) Lab (1)
- 02-222 Earth Science (4)
- 02-224 Microbiology (4) and (02-226) Lab (1)
- 02-233 Principles of Environmental Science (4)
- 02-315 General Ecology (3) and (02-316) Lab (1)
- 02-375 Issues in Environmental Science (3)
- 02-495 Research Methods in Ecology and Environmental Science (2)
- 02-498 Field Biology (2)
- 03-110 General Chemistry I (4) and (03-111) Lab (1)
- 03-115 General Chemistry II (4) and (03-116) Lab (1)

II. Environmental Science Electives (8).

Students must select a sufficient number of elective courses from the following list to total a minimum of 8 hours.

- 02-260 Introduction to Geographic Information Systems (4)
- 02-405 Invertebrate Zoology (4)
- 02-416 Conservation Biology (3) and (02-417) Lab (1)
- 02-418 Limnology (3) and (02-419) (1)
- 02-420 Botany (3) and (02-421) Lab (1)

III. The advanced writing requirement of the General Education Curriculum is satisfied by successful completion of the following courses which contain strong writing components: General Biology Labs I and II (02-111 and 02-116), Microbiology Lab (02-226), and Research Methods in Ecology and Environmental Science (02-495).

MINOR / ENVIRONMENTAL SCIENCE

Minor Credit Hours: 21

I. Core Courses (21)

- 02-110 General Biology I (4)
- 02-115 General Biology II (4)
- 02-233 Principles of Environmental Science (4)
- 02-375 Issues in Environmental Science (3)
- 03-105 Introductory Organic and Biochemistry (3)
- 03-108 Chemistry and the Environment (3)

