

ENVIRONMENTAL SCIENCE BACHELOR OF ARTS: BIOLOGICAL CONSERVATION TRACK

Program Overview

This interdisciplinary science degree prepares students in a liberal arts tradition to understand connections between human beings and their effects on the Earth's environment. Drake environmental science students are grounded in the natural sciences disciplines while also acquiring the ability to synthesize information across disciplines. Students develop technical and quantitative skills including laboratory and field methods, statistical analysis and the implementation of geographic information systems (GIS). Courses in the social sciences such as economics, politics, policy and ethics provide an important link to the human element associated with environmental issues. Graduates of the program will be well prepared to undertake graduate study in diverse fields of environmental sciences, as well as to work in governmental and nongovernmental capacities on environmental issues.

Field work is a key component of this degree, featured in biology, geology and environmental classes. Iowa's central location in the nation allows students to experience a diversity of ecosystems and human communities during frequently offered weekend and summer field trips. The program also connects students with ongoing environmental projects (for example an 8,000-acre prairie restoration project including bison and elk at the Neal Smith National Wildlife Refuge, 20 miles east of campus), with offerings at Iowa Lakeside Laboratory in Milford, Iowa (a biological field station), and with semester-long marine science experiences at the University of Southern Mississippi's Gulf Coast Research Laboratory in Ocean Springs, Mississippi.

Drake's environmental science major is distinguished by its strong focus on interdisciplinary study, emphasis on field experiences, opportunities for research and independent study, and service learning approach in the Senior Capstone experience.

B.A. Degree Requirements

At least 25 credits in this major will include courses not counted towards another major or minor.

Environmental Science: Biological Conservation Track

Code	Title	Hours
Core Curriculum		
ENSS 035	ONE EARTH: GLOBAL ENVIRONMENTAL SCIENCE	3
ENSS 036	ONE EARTH LABORATORY	1
ENSS 037	ENVIRONMENTAL CASE ANALYSIS	3
ENSS 041	PRINCIPLES OF GEOLOGY	3
ENSS 042	PRINCIPLES OF GEOLOGY LAB	1
ENSS 065	GEOGRAPHIC INFORMATION SYSTEMS	3
ENSS 157	ENVIRONMENTAL JUSTICE	3
Life Science Base		
BIO 012 & 012L	GENERAL/PRE-PROFESSIONAL BIOLOGY I and GENERAL/PRE-PROFESSIONAL BIOLOGY I LAB	4

BIO 013 & 013L	GENERAL/PRE-PROFESSIONAL BIOLOGY II and GENERAL/PRE-PROFESSIONAL BIOLOGY II LAB	4
BIO 117 & BIO 118L	ECOLOGY and ECOLOGY LAB	5
STAT 060	STATISTICS FOR THE LIFE SCIENCES	3
CHEM 001 & CHEM 003	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LAB	4

Outcome Areas ¹

Field and Lab Skills:

Select two courses from the following: 6-8

ENSS 026	ETHOLOGICAL METHODS
ENSS 101	RESTORATION ECOLOGY PRACTICUM
ENSS 111	INTERNATIONAL ENVIRONMENT SEMINAR
ENSS 115	ENVIRONMENTAL FIELD COURSE
ENSS 119	REGIONAL ECOLOGY
ENSS 125	CONSERVATION BIOLOGY ²
ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (with advisor approval)
ENSS 165	APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS
BIO 120 & 120L	ECOSYSTEM ECOLOGY and ECOSYSTEM ECOLOGY LAB
BIO 145 & 145L	SELECTED TOPICS IN BIOLOGY and SELECTED TOPICS IN BIOLOGY LAB (with advisor approval)
BIO 152 & 152L	FIELD BOTANY and FIELD BOTANY LAB

Research Literacy:

Select two courses from the following: 6-8

ENSS 111	INTERNATIONAL ENVIRONMENT SEMINAR
ENSS 115	ENVIRONMENTAL FIELD COURSE
ENSS 119	REGIONAL ECOLOGY
ENSS 127	ENDANGERED SPECIES CONSERVATION ²
ENSS 128	ZOO DESIGN AND OPERATIONS
ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (with advisor approval)
ENSS 154	ENVIRONMENTAL DECISION-MAKING
ENSS 168	DYNAMIC ENVIRONMENTAL MODELING
BIO 025/ PSY 024	ANIMAL BEHAVIOR
BIO 120 & 120L	ECOSYSTEM ECOLOGY and ECOSYSTEM ECOLOGY LAB
BIO 145 & 145L	SELECTED TOPICS IN BIOLOGY and SELECTED TOPICS IN BIOLOGY LAB (with advisor approval)
BIO 167 & 167L	POPULATION AND COMMUNITY ECOLOGY and POPULATION ECOLOGY LAB

Taxon Expertise:

Select two courses from the following: 6-8

ENSS 109	ZOO/GREAT APE PRACTICUM
ENSS 111	INTERNATIONAL ENVIRONMENT SEMINAR
ENSS 115	ENVIRONMENTAL FIELD COURSE
ENSS 119	REGIONAL ECOLOGY

ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (with advisor approval)
ENSS 159	ZOO/GREAT APE INTERNSHIP
BIO 019 & 019L	INTRODUCTION TO BOTANY and BOTANY LAB
BIO 098	INTRODUCTION TO PRIMATOLOGY
BIO 112L	AVIAN WINTER ECOLOGY
BIO 119 & 119L	HERPETOLOGY and HERPETOLOGY LAB
BIO 122 & 122L	MAMMALOGY and MAMMOLOGY LAB
BIO 130 & 130L	ORNITHOLOGY and ORNITHOLOGY LAB
BIO 145 & 145L	SELECTED TOPICS IN BIOLOGY and SELECTED TOPICS IN BIOLOGY LAB (with advisor approval)
BIO 152 & 152L	FIELD BOTANY and FIELD BOTANY LAB

Managing Biodiversity:

Select two courses from the following: 6-8

ENSS 101	RESTORATION ECOLOGY PRACTICUM
ENSS 111	INTERNATIONAL ENVIRONMENT SEMINAR
ENSS 115	ENVIRONMENTAL FIELD COURSE
ENSS 119	REGIONAL ECOLOGY
ENSS 125	CONSERVATION BIOLOGY ²
ENSS 127	ENDANGERED SPECIES CONSERVATION ²
ENSS 128	ZOO DESIGN AND OPERATIONS
ENSS 135	GLOBAL CLIMATE CHANGE: THE SCIENCE AND POLICY OF GLOBAL WARMING ²
ENSS 138	WATER RESOURCES AND POLICY ²
ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (with advisor approval)
ENSS 168	DYNAMIC ENVIRONMENTAL MODELING
BIO 145 & 145L	SELECTED TOPICS IN BIOLOGY and SELECTED TOPICS IN BIOLOGY LAB

Science-Policy IntegrationSelect six ENSS credits from courses advisor-approved courses that
combine significant conservation-related content within the context
of important discussions in the policy realm. 6**Capstone**

ENSS 191	ENVIRONMENTAL SCIENCE AND SUSTAINABILITY PRACTICUM	3
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¹ Any course may count toward only one outcome.² Students may complete this requirement using courses that fulfill
programmatic learning outcomes.

In addition to programmatic requirements, students are responsible
for satisfying all requirements of the Drake Curriculum ([https://
catalog.drake.edu/archive/2024-2025/undergraduate/academic-
information/drake-curriculum/](https://catalog.drake.edu/archive/2024-2025/undergraduate/academic-information/drake-curriculum/)), including Areas of Inquiry (AOI)

Student must also satisfy university graduation requirements ([https://
catalog.drake.edu/archive/2024-2025/undergraduate/academic-
information/graduation-requirements/](https://catalog.drake.edu/archive/2024-2025/undergraduate/academic-information/graduation-requirements/)) for all undergraduate students..