

ENVIRONMENTAL SCIENCE BACHELOR OF ARTS: AQUATIC AND EARTH SCIENCE 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 Bachelor of Arts: Aquatic and Earth Science 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 & ENSS 042	PRINCIPLES OF GEOLOGY and PRINCIPLES OF GEOLOGY LAB	4
ENSS 065	GEOGRAPHIC INFORMATION SYSTEMS	3
ENSS 1XX	GLOBAL BIOGEOCHEMICAL CYCLES	3-4
ENSS 157	ENVIRONMENTAL JUSTICE	3
Introduction to Physical Science		
Select one of the following sequences:		8

CHEM 001 & CHEM 002
& CHEM 003 & CHEM 004

GENERAL CHEMISTRY I
and GENERAL CHEMISTRY II
and GENERAL CHEMISTRY I LAB
and GENERAL CHEMISTRY II LAB

PHY 001 & PHY 002

INTRODUCTION TO PHYSICS I
and INTRODUCTION TO PHYSICS II

PHY 011 & PHY 012

GENERAL PHYSICS I
and GENERAL PHYSICS II

Outcome Areas ¹

Interdisciplinary Science:

Select two courses from the following 6-8

ENSS 054 ENVIRONMENTAL COMMUNICATION

ENSS 111 INTERNATIONAL ENVIRONMENT SEMINAR

ENSS 125 CONSERVATION BIOLOGY

ENSS 127 ENDANGERED SPECIES CONSERVATION

ENSS 135 GLOBAL CLIMATE CHANGE: THE SCIENCE AND
POLICY OF GLOBAL WARMING

ENSS 138 WATER RESOURCES AND POLICY

ENSS 150 ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE
(with advisor approval)

Quantitative Analysis:

Select two courses from the following: 6-8

BIO 140 BIOLOGY RESEARCH AND STATISTICAL
METHODS

CHEM 081 ANALYTICAL METHODS

ENSS 150 ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE
(with advisor approval)

ENSS 162 HYDROLOGY

MATH 050 CALCULUS I (or higher)

PHY 025 (or higher)

Physical Science:

Select two courses from the following: 6-8

CHEM 081 ANALYTICAL METHODS

CHEM 097 ORGANIC CHEMISTRY I
& CHEM 098 and ORGANIC CHEMISTRY I LAB (or higher)

ENSS 135 GLOBAL CLIMATE CHANGE: THE SCIENCE AND
POLICY OF GLOBAL WARMING

ENSS 150 ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE
(with advisor approval)

ENSS 162 HYDROLOGY

PHY 025 (or higher)

Systems Science:

Select two courses from the following: 6-8

BIO 117 ECOLOGY

BIO 120 ECOSYSTEM ECOLOGY

ENSS 111 INTERNATIONAL ENVIRONMENT SEMINAR

ENSS 119 REGIONAL ECOLOGY

ENSS 125 CONSERVATION BIOLOGY

ENSS 150 ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE
(with advisor approval)

ENSS 168 DYNAMIC ENVIRONMENTAL MODELING

Professional Skills:

Select two courses from the following: 6-8

BIO 140	BIOLOGY RESEARCH AND STATISTICAL METHODS	
CHEM 081	ANALYTICAL METHODS	
CHEM 097 & CHEM 098	ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY I LAB	
ENSS 101	RESTORATION ECOLOGY PRACTICUM	
ENSS 115	ENVIRONMENTAL FIELD COURSE	
ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (ith advisor approval)	
ENSS 162	HYDROLOGY	
ENSS 165	APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS	
ENSS 168	DYNAMIC ENVIRONMENTAL MODELING	
ENSS 196	ENVIRONMENTAL INTERNSHIP	
Capstone		
ENSS 191	ENVIRONMENTAL SCIENCE AND SUSTAINABILITY PRACTICUM	3
Total Hours		61-72

¹ Any course may count toward only one outcome.

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/>), including Areas of Inquiry (AOI)

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