

# ENVIRONMENTAL SUSTAINABILITY AND RESILIENCE BACHELOR OF ARTS

## Program Overview

Drake's Environmental Sustainability and Resilience major is a highly interdisciplinary program enabling graduates to address sustainability and resilience challenges in a variety of fields. Sustainable systems are those that can continue their core functions indefinitely without degradation; resilient systems are those that can continue their core functions in the face of rapid, and often unexpected, change.

Creating sustainable and resilient systems requires that practitioners incorporate ecological, economic, and social principles in their work, and that they be familiar with both rigorously quantitative and qualitative methods of analysis. Therefore, our majors will develop a strong background in environmental sciences sociology, economics, communication, consensus-building, and other relevant areas. They also will develop skills in systems analysis, carbon footprinting, and Geographic Information Systems that will prepare them to engage in identifying issues and developing solutions to diverse challenges upon graduation.

Because each student's path and interests are unique, the sustainability and resilience curriculum is organized around four key outcomes for majors:

- Choice Analysis** - Students will be able to identify, analyze, and communicate the impacts of collective and individual choices on environmental, economic, and social systems.
- Systems Thinking** - Students will employ whole-systems thinking to understand the nature of sustainability and resilience challenges and to design successful responses.
- Stakeholder Engagement** - Students will develop appropriate skills for communicating among various constituencies that have a stake in sustainability and resilience choices, and be able to integrate concerns from multiple perspectives into proposed solutions that are appropriate to local political, social, and economic conditions.
- Professional Skills** - Students will develop the skills necessary for employment or graduate study in fields related to Environmental Sustainability and Resilience.

## B.A. Degree Requirements

All Environmental Sustainability and Resilience majors take a set of core courses in areas central to the study of environmental sustainability and resilience, including environmental science, biology, geology, sociology, and economics. In addition, students take two courses fulfilling each of the four major outcomes.

Courses in any of the areas of study can count for only one area of study.

For example, ENSS 135 GLOBAL CLIMATE CHANGE: THE SCIENCE AND POLICY OF GLOBAL WARMING, which could satisfy either Choice Analysis or Stakeholder Engagement, can count for only one of those requirements.

At least 25 credits toward the Environmental Sustainability and Resilience major must not be counted toward another major, minor, or concentration.

Code	Title	Hours
<b>ENSS Core</b>		
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
<b>Other Required Courses</b>		
BIO 013	GENERAL/PRE-PROFESSIONAL BIOLOGY II	3
BIO 013L	GENERAL/PRE-PROFESSIONAL BIOLOGY II LAB	1
ECON 002	PRINCIPLES OF MICROECONOMICS	3
Select one of the following:		3-4
ENSS 151	SUSTAINABILITY AND RESILIENCE	
LAW 329	SUSTAINABILITY AND THE LAW	
<b>Choice Analysis</b>		
Select two of the following:		6-8
ECON 108	ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS	
ECON 109	PUBLIC ECONOMICS	
ECON 135	DEVELOPING ECONOMIES	
ENSS 050	SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND SUSTAINABILITY (Must be approved by advisor)	
ENSS 072	ENVIRONMENTAL PSYCHOLOGY	
ENSS 103	FOUNDATIONS NAT HIST & ENVIRON	
ENSS 111	INTERNATIONAL ENVIRONMENT SEMINAR	
ENSS 125	CONSERVATION BIOLOGY	
ENSS 135	GLOBAL CLIMATE CHANGE: THE SCIENCE AND POLICY OF GLOBAL WARMING	
ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (Must be approved by advisor)	
ENSS 153	ECOLOGICAL ECONOMICS	
ENSS 154	ENVIRONMENTAL DECISION-MAKING	
HIST 186	HISTORY OF THE ENVIRONMENT	
HIST 188	URBAN ENVIRONMENTAL HISTORY	
POLS 156	GLOBAL HEALTH	
SOC 145	FOOD & SOCIETY	
<b>Systems Thinking</b>		
Select two of the following:		6
BIO 111	EVOLVED FOODWAYS	
BIO 117	ECOLOGY	
ECON 135	DEVELOPING ECONOMIES	
ENSS 050	SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND SUSTAINABILITY (Must be approved by advisor)	
ENSS 072	ENVIRONMENTAL PSYCHOLOGY	
ENSS 103	FOUNDATIONS NAT HIST & ENVIRON	
ENSS 107	CIVIC ENVIRONMENTALISM AND GROWTH	

ENSS 111	INTERNATIONAL ENVIRONMENT SEMINAR
ENSS 119	REGIONAL ECOLOGY
ENSS 127	ENDANGERED SPECIES CONSERVATION
ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (Must be approved by advisor)
ENSS 156	ENVIRONMENTAL POLITICS/POLICY
ENSS 168	DYNAMIC ENVIRONMENTAL MODELING
SOC 145	FOOD & SOCIETY

**Stakeholder Engagement**

Select two of the following: 6

ENSS 050	SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND SUSTAINABILITY (Must be approved by advisor)
ENSS 054	ENVIRONMENTAL COMMUNICATION
ENSS 071	ENVIRONMENTALISM IN THE U.S.
ENSS 107	CIVIC ENVIRONMENTALISM AND GROWTH
ENSS 125	CONSERVATION BIOLOGY
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 (Must be approved by advisor)
ENSS 156	ENVIRONMENTAL POLITICS/POLICY
HIST 186	HISTORY OF THE ENVIRONMENT
HIST 188	URBAN ENVIRONMENTAL HISTORY
POLS 156	GLOBAL HEALTH

**Professional Skills**

Select two of the following: 6

BIO 140	BIOLOGY RESEARCH AND STATISTICAL METHODS
ENSS 050	SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND SUSTAINABILITY (Environmental Consulting ) <sup>1</sup>
ENSS 101	RESTORATION ECOLOGY PRACTICUM
ENSS 107	CIVIC ENVIRONMENTALISM AND GROWTH
ENSS 115	ENVIRONMENTAL FIELD COURSE
ENSS 125	CONSERVATION BIOLOGY
ENSS 150	ADVANCED TOPICS IN ENVIRONMENTAL SCIENCE (Must be approved by advisor)
ENSS 153	ECOLOGICAL ECONOMICS
ENSS 165	APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS
ENSS 168	DYNAMIC ENVIRONMENTAL MODELING
STAT 050	STATISTICS FOR THE SOCIAL SCIENCES

**Practicum**

ENSS 191	ENVIRONMENTAL SCIENCE AND SUSTAINABILITY PRACTICUM	3
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**Total Hours** 54-57<sup>1</sup> Must be approved by advisor

catalog.drake.edu/undergraduate/academic-information/drake-curriculum/), including Areas of Inquiry (AOI)

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