MAJOR IN ENVIRONMENTAL STUDIES AND ENVIRONMENTAL SCIENCE - ENVIRONMENTAL STUDIES CONCENTRATION

The Environmental Studies Concentration is for students who are interested in environmental planning, regulation and policy, environmental health and educating others about environmental issues. Students interested in environmental sustainability are also typically Environmental Studies students. Environmental Studies tracks include Environmental Policy and Management, Environmental Geography, Environmental Health, Informal Environmental Education and Environmental Directed Studies.

Requirements

Along with completing the common required courses, students in the Environmental Studies Concentration complete additional units as they complete one of five tracks. The tracks are:

- Environmental Geographical Analysis
- Environmental Policy/Management
- Environmental Health
- Directed Environmental Studies
- Informal Environmental Education

All students in the program will complete the required courses establishing the scientific principles and mathematical skills needed as a foundation for more specialized study. They also will complete additional courses in the social sciences, an upper-level internship or research course and additional course work appropriate to the selected track.

Common Required Courses

Code	Title	Units
Natural Sciences		
BIOL 200 & 200L	BIOLOGY I: INTRODUCTION TO CELLULAR BIOLOGY AND GENETICS [LECTURE] and BIOLOGY I: INTRODUCTION TO CELLULAR BIOLOGY AND GENETICS [LAB]	4
BIOL 206 & 206L	BIOLOGY II: INTRODUCTION TO ECOLOGY AND EVOLUTION [LECTURE] and BIOLOGY II: INTRODUCTION TO ECOLOGY AND EVOLUTION [LAB]	4
CHEM 104	INTRODUCTION TO ENVIRONMENTAL CHEMISTRY [1]	4
GEOL 121	PHYSICAL GEOLOGY	4
Mathematics and Statistics		
Select one of the following: [2]		3-4
MATH 117	TRIGONOMETRY AND ADVANCED COLLEGE ALGEBRA	
MATH 119	PRE-CALCULUS	
MATH 211	CALCULUS FOR APPLICATIONS	
Select one of the following:		3-4
MATH 231	BASIC STATISTICS	
MATH 237	ELEMENTARY BIOSTATISTICS	
GEOG 375	QUANTITATIVE METHODS IN GEOGRAPHY	
ECON 205	STATISTICS FOR BUSINESS AND ECONOMICS I	
Advanced Writing Course		
ENGL 318	TECHNICAL AND SCIENTIFIC WRITING	3
or GEOG 383	NATURAL RESOURCES AND SOCIETY: A GEOGRAPHIC PERSPECTIVE	
Environmental Geography, Ethics and Health		
GEOG 101	PHYSICAL GEOGRAPHY	3
GEOG 410	ENVIRONMENTAL GEOGRAPHY	3
HLTH 451	INTRODUCTION TO ENVIRONMENTAL HEALTH	3
PHIL 255	ENVIRONMENTAL ETHICS	3
Total Units		**37-39**

Environmental Geographical Analysis Track

Students must complete 34-35 units of coursework for the track combined with 37-39 units of Common Required Courses (36 units of coursework must be at the upper level).

Code	Title	Units
Required Courses		
ECON 201	MICROECONOMIC PRINCIPLES	3
ECON 375	ENVIRONMENTAL ECONOMICS	3
or ECON 376	NATURAL RESOURCE ECONOMICS	
POSC 103	AMERICAN NATIONAL GOVERNMENT	3
or POSC 207	STATE GOVERNMENT	
GEOG 221	INTRODUCTION TO GEOSPATIAL TECHNOLOGY	3
GEOG 321	INTRODUCTION TO REMOTE SENSING AND PHOTOGRAMMETRY	3
GEOG 322	INTRO TO GEOGRAPHIC INFORMATION SCIENCE	4
GEOG 481	ENVIRONMENTAL IMPACT ANALYSIS	3
Select one of the following:		3
ENVS 411	WATER POLICIES OF THE UNITED STATES	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION	
Select one of the following:		3
ENVS 482	ENVIRONMENTAL RESEARCH	
ENVS 485	ENVIRONMENTAL INTERNSHIP	
ENVS 491	SENIOR SEMINAR	
Electives		
Select two additional courses, one from any Environmental Studies track AND one from any Environmental Science and Studies track		6-7
Total Units		**34-35**

Environmental Policy / Management Track

Students must complete 36-38 units of coursework for the track combined with 37-39 units of Common Required Courses (37 units of coursework must be at the upper level).

Code	Title	Units
Required Courses		
ECON 201	MICROECONOMIC PRINCIPLES	3
ECON 202	MACROECONOMIC PRINCIPLES	3
ECON 375	ENVIRONMENTAL ECONOMICS	3
or ECON 376	NATURAL RESOURCE ECONOMICS	
POSC 103	AMERICAN NATIONAL GOVERNMENT	3
or POSC 207	STATE GOVERNMENT	
Select one of the following:		3
ENVS 411	WATER POLICIES OF THE UNITED STATES	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION	
Select one of the following:		3
ENVS 482	ENVIRONMENTAL RESEARCH	
ENVS 485	ENVIRONMENTAL INTERNSHIP	
ENVS 491	SENIOR SEMINAR	
Electives		
Select five of the following (additional prerequisites may be required):		15-16
ANTH 343	RESOURCE WARS OF THE 21ST CENTURY	
ANTH 370	TOPICS IN ANTHROPOLOGY [3]	
BIOL 306	HUMAN ECOLOGY AND SUSTAINABILITY	
ECON 306	STATISTICS FOR BUSINESS AND ECONOMICS II	
ECON 326	ECONOMIC DEVELOPMENT	
ECON 337	PUBLIC FINANCE	
ECON 351	URBAN ECONOMICS	
ECON 375	ENVIRONMENTAL ECONOMICS (if not taken as required)	
ECON 376	NATURAL RESOURCE ECONOMICS (if not taken as required)	
ECON 470	ADVANCED TOPICS IN ECONOMICS [3]	
ENGL 401	GRANT AND ADVOCACY WRITING	
ENVS 411	WATER POLICIES OF THE UNITED STATES (if not taken as required)	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT (if not taken as required)	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION (if not taken as required)	
GEOG 201	ENVIRONMENT AND SOCIETY	
GEOG 393	TRANSPORTATION AND INFRASTRUCTURE PLANNING	
GEOG 402	PLANNING FOR RESILIENT COMMUNITIES	
GEOG 406	PLANNING FOR URBAN CLIMATE CHANGE	
GEOG 412	GEOGRAPHIES OF CONSUMPTION AND WASTE	
GEOG 419	CLIMATE CHANGE: SCIENCE TO POLICY	
GEOG 469	CLIMATE & HEALTH	
GEOG 481	ENVIRONMENTAL IMPACT ANALYSIS	
GEOL 301	SUSTAINABILITY AND THE USE OF NATURAL RESOURCES	
HLTH 310	INTRODUCTION TO PUBLIC HEALTH	
HLTH 311	CHRONIC AND COMMUNICABLE DISEASE	
PHIL 319	SCIENCE, TECHNOLOGY & VALUES	
POSC 305	URBAN GOVERNMENT AND POLITICS	
POSC 340	COMPARATIVE PUBLIC POLICY	
POSC 440	GLOBAL ENVIRONMENTAL POLITICS	
POSC 470	SPECIAL TOPICS IN POLITICAL SCIENCE [3]	
POSC 481	SEMINAR IN AMERICAN GOVERNMENT AND PUBLIC POLICY [3]	
POSC 482	SEMINAR IN COMPARATIVE POLITICS [3]	
WMST 345	WOMEN, ENVIRONMENT, AND HEALTH	
Select one additional elective from any Environmental Science and Studies track		3-4
Total Units		**36-38**

Environmental Health Track

Students must complete 33-35 units of coursework for the track combined with 37-39 units of Common Required Courses (35 units of coursework must be at the upper level).

Code	Title	Units
Required Courses		
ECON 201	MICROECONOMIC PRINCIPLES	3
ECON 375	ENVIRONMENTAL ECONOMICS	3
or ECON 376	NATURAL RESOURCE ECONOMICS	
POSC 103	AMERICAN NATIONAL GOVERNMENT	3
or POSC 207	STATE GOVERNMENT	
HLTH 207	HEALTH CARE IN THE U.S.	3
HLTH 310	INTRODUCTION TO PUBLIC HEALTH	3
Select one of the following:		3
ENVS 411	WATER POLICIES OF THE UNITED STATES	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION	
Select one of the following:		3
ENVS 482	ENVIRONMENTAL RESEARCH	
ENVS 485	ENVIRONMENTAL INTERNSHIP	
ENVS 491	SENIOR SEMINAR	
Electives		
Select three of the following (additional prerequisites may be required for some courses):		9-10
BIOL 327	DANGEROUS DISEASES	
GEOG 201	ENVIRONMENT AND SOCIETY	
GEOG 329	GEOGRAPHIES OF HEALTH	
GEOG 322	INTRO TO GEOGRAPHIC INFORMATION SCIENCE	
GEOG 385	POPULATION GEOGRAPHY	
or SOCI 329	DEMOGRAPHY	

GEOG 402	PLANNING FOR RESILIENT COMMUNITIES	
GEOG 411	STUDIES IN NATURAL HAZARDS	
GEOG 469	CLIMATE & HEALTH	
GEOG 470	SPECIAL TOPICS IN GEOGRAPHY [3]	
GEOG 473	SPECIAL TOPICS IN ENVIRONMENTAL SYSTEMS AND SUSTAINABILITY	
HLTH 311	CHRONIC AND COMMUNICABLE DISEASE	
HLTH 333	FOOD SAFETY SCIENCE	
HLTH 350	URBAN FOOD SYSTEMS	
HLTH 435	INTRODUCTION TO EPIDEMIOLOGY	
POSC 481	SEMINAR IN AMERICAN GOVERNMENT AND PUBLIC POLICY [3]	
WMST 345	WOMEN, ENVIRONMENT, AND HEALTH	
Select one additional elective from any Environmental Science and Studies track		3-4
Total Units		**33-35**

Directed Environmental Studies Track

All students selecting this track should, in consultation with their adviser, develop a coherent course of study that includes six electives. Students must complete 33-35 units of coursework for the track combined with 37-39 units of Common Required Courses (35 units of coursework must be at the upper level).

Code	Title	Units
Required Courses		
ECON 201	MICROECONOMIC PRINCIPLES	3
ECON 375	ENVIRONMENTAL ECONOMICS	3
or ECON 376	NATURAL RESOURCE ECONOMICS	
POSC 103	AMERICAN NATIONAL GOVERNMENT	3
or POSC 207	STATE GOVERNMENT	
Select one of the following:		3
ENVS 411	WATER POLICIES OF THE UNITED STATES	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION	
Select one of the following:		3
ENVS 482	ENVIRONMENTAL RESEARCH	
ENVS 485	ENVIRONMENTAL INTERNSHIP	
ENVS 491	SENIOR SEMINAR	
Electives		
Select five of the following:		15-16
ANTH 343	RESOURCE WARS OF THE 21ST CENTURY	
ANTH 370	TOPICS IN ANTHROPOLOGY [3]	
BIOL 304	NATURAL HISTORY INTERPRETATION AND PUBLIC ENVIRONMENTAL EDUCATION	
BIOL 306	HUMAN ECOLOGY AND SUSTAINABILITY	
ECON 326	ECONOMIC DEVELOPMENT	
ECON 337	PUBLIC FINANCE	
ECON 351	URBAN ECONOMICS	
ECON 375	ENVIRONMENTAL ECONOMICS (if not taken as required)	
ECON 376	NATURAL RESOURCE ECONOMICS (if not taken as required)	
ECON 470	ADVANCED TOPICS IN ECONOMICS [3]	
ENGL 401	GRANT AND ADVOCACY WRITING	
ENVS 382	ENVIRONMENTAL EDUCATION AND SERVICE LEARNING IN THE TROPICS	
ENVS 411	WATER POLICIES OF THE UNITED STATES (if not taken as required)	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT (if not taken as required)	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION (if not taken as required)	
ENVS 432	SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND STUDIES	
ENVS 471	INDEPENDENT STUDY IN ENVIRONMENTAL SCIENCE AND STUDIES	
ENVS 491	SENIOR SEMINAR (if not taken as required)	
GEOG 201	ENVIRONMENT AND SOCIETY	
GEOG 221	INTRODUCTION TO GEOSPATIAL TECHNOLOGY	
GEOG 319	SOILS AND VEGETATION	
GEOG 322	INTRO TO GEOGRAPHIC INFORMATION SCIENCE	
GEOG 323	CARTOGRAPHY AND GRAPHICS I	
GEOG 329	GEOGRAPHIES OF HEALTH	
GEOG 373	CLIMATOLOGY	
GEOG 377	METEOROLOGY	
GEOG 383	NATURAL RESOURCES AND SOCIETY: A GEOGRAPHIC PERSPECTIVE (if not taken as required)	
GEOG 385	POPULATION GEOGRAPHY	
GEOG 393	TRANSPORTATION AND INFRASTRUCTURE PLANNING	
GEOG 402	PLANNING FOR RESILIENT COMMUNITIES	
GEOG 405	COMPREHENSIVE PLANNING	
GEOG 406	PLANNING FOR URBAN CLIMATE CHANGE	
GEOG 409	APPLIED CLIMATOLOGY	
GEOG 411	STUDIES IN NATURAL HAZARDS	
GEOG 412	GEOGRAPHIES OF CONSUMPTION AND WASTE	
GEOG 413	SEVERE AND HAZARDOUS WEATHER	
GEOG 414	GIS APPLICATIONS	
GEOG 416	ADVANCED REMOTE SENSING: DIGITAL IMAGE PROCESSING AND ANALYSIS	
GEOG 417	OUTDOOR RECREATION AND PLANNING MANAGEMENT	
GEOG 419	CLIMATE CHANGE: SCIENCE TO POLICY	
GEOG 465	ADVANCED TECHNIQUES IN GIS	
GEOG 469	CLIMATE & HEALTH	
GEOG 470	SPECIAL TOPICS IN GEOGRAPHY [3]	
GEOG 471	GEOSPATIAL TECHNOLOGIES SPECIAL TOPICS	
GEOG 473	SPECIAL TOPICS IN ENVIRONMENTAL SYSTEMS AND SUSTAINABILITY	
GEOG 481	ENVIRONMENTAL IMPACT ANALYSIS	

GEOG 484	LAND USE PLANNING
GEOG 495	DIRECTED READNGS IN GEOGRAPHY [3]
GEOG 496	INDEPENDENT STUDY IN GEOGRAPHY [3]
GEOL 301	SUSTAINABILITY AND THE USE OF NATURAL RESOURCES
HIST 336	THE ENVIRONMENTAL HISTORY OF THE MODERN WORLD: 1492-THE PRESENT
HLTH 435	INTRODUCTION TO EPIDEMIOLOGY
HLTH 491	HEALTH DIRECTED READINGS [3]
PHIL 319	SCIENCE, TECHNOLOGY & VALUES
PHIL 380	PHILOSOPHICAL TOPICS [3]
POSC 305	URBAN GOVERNMENT AND POLITICS
POSC 340	COMPARATIVE PUBLIC POLICY
POSC 375	PUBLIC ADMINISTRATION
POSC 440	GLOBAL ENVIRONMENTAL POLITICS
POSC 470	SPECIAL TOPICS IN POLITICAL SCIENCE [3]
POSC 481	SEMINAR IN AMERICAN GOVERNMENT AND PUBLIC POLICY [3]
POSC 482	SEMINAR IN COMPARATIVE POLITICS [3]
SOCI 329	DEMOGRAPHY
WMST 345	WOMEN, ENVIRONMENT, AND HEALTH
Select one additional elective from any Environmental Science and Studies track	3-4
Total Units	**33-35**

Informal Environmental Education Track

Students must complete 36-39 units of coursework for the track combined with 37-39 units of Common Required Courses (37 units of coursework must be at the upper level).

Code	Title	Units
Required Courses		
BIOL 205	GENERAL BOTANY	4
BIOL 207	GENERAL ZOOLOGY	4
BIOL 301	FIELD AND NATURAL SCIENCE	3
BIOL 304	NATURAL HISTORY INTERPRETATION AND PUBLIC ENVIRONMENTAL EDUCATION	3
BIOL 402	GENERAL ECOLOGY	4
or BIOL 435	PLANT ECOLOGY	
ENVS 485	ENVIRONMENTAL INTERNSHIP	3
Select Sequence 1 or Sequence 2:		6
Sequence 1		
ECON 201	MICROECONOMIC PRINCIPLES	
ECON 375	ENVIRONMENTAL ECONOMICS	
or ECON 376	NATURAL RESOURCE ECONOMICS	
Sequence 2		
POSC 103	AMERICAN NATIONAL GOVERNMENT	
or POSC 207	STATE GOVERNMENT	
Select one of the following:		
ENVS 411	WATER POLICIES OF THE UNITED STATES	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION	
Electives		
Select three of the following:		9-12
BIOL 306	HUMAN ECOLOGY AND SUSTAINABILITY	
BIOL 310	CONSERVATION BIOLOGY	
BIOL 334	HUMANS, SCIENCE AND THE CHESAPEAKE BAY	
BIOL 347	MARINE BIOLOGY	
BIOL 353	INVERTEBRATE ZOOLOGY	
BIOL 371	ANIMAL BEHAVIOR	
BIOL 432	VASCULAR PLANT TAXONOMY	
BIOL 435	PLANT ECOLOGY	
BIOL 452	WETLAND ECOLOGY	
BIOL 455	FISH BIOLOGY	
BIOL 456	ORNITHOLOGY	
BIOL 458	MAMMALOGY	
BIOL 461	ENTOMOLOGY	
BIOL 467	HERPETOLOGY	
ENVS 382	ENVIRONMENTAL EDUCATION AND SERVICE LEARNING IN THE TROPICS	
ENVS 411	WATER POLICIES OF THE UNITED STATES (if not taken as required)	
ENVS 420	ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT (if not taken as required)	
ENVS 425	SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION	
GEOG 201	ENVIRONMENT AND SOCIETY	
GEOG 319	SOILS AND VEGETATION	
GEOL 301	SUSTAINABILITY AND THE USE OF NATURAL RESOURCES	
GEOL 305	ENVIRONMENTAL GEOLOGY	
Total Units		**36-39**

1 The requirement of CHEM 104 may also be satisfied by successful completion of CHEM 131, CHEM 131L, CHEM 132, and CHEM 132L (8 units total).

2 The requirement of MATH 117, MATH 119, or MATH 211 may also be satisfied by successful completion of MATH 273 or MATH 274.

3 Acceptable topics related to environmental science and studies. Please contact the Environmental Science and Studies program director for approval.

Four-Year Plan of Study

Sample Four-Year Plan

The selected course sequence below is an example of the simplest path to degree completion. Based on course schedules, student needs, and student choice, individual plans may vary. Students should consult with their adviser to make the most appropriate elective choices and to ensure that they have completed the required number of units (120) to graduate.

Freshman

Term 1	Units	Term 2	Units
BIOL 200 & 200L (Core 7)[1]	4	BIOL 206 & 206L	4
GEOL 121 (Core 8)	4	ECON 201 (Core 6)	3

Select one of the following (Core 3):[2]	**3**	GEOG 101	3
MATH 117		Core 2 (or Core 1)	3
MATH 119		Core 13	3
MATH 211			
Core 1 (or Core 2)	3		
	14		**16**

Sophomore

Term 1	**Units**	**Term 2**	**Units**
CHEM 104	4	HLTH 451	3
POSC 103 or 207 (Core 11)	3	PHIL 255 (Core 14)	3
Select one of the following:	**3**	Track Requirement	3
ECON 205		Track Requirement	3
GEOG 375		Core 5	3
MATH 231			
MATH 237			
Track requirement	3		
Core 4	3		
	16		**15**

Junior

Term 1	**Units**	**Term 2**	**Units**
ENGL 318 or GEOG 383 (Core 9)	3	GEOG 410	3
Select one of:	**3**	Track Requirement	3
ENVS 411		Track Requirement	3
ENVS 420		Track Requirement	3
ENVS 425		Core 12	3
Track Requirement	3		
Track Requirement	3		
Core 10	3		
	15		**15**

Senior

Term 1	**Units**	**Term 2**	**Units**
Select one of the following:	**3**	Track Requirement (if needed) / Elective	4
ENVS 482		Track Requirement (if needed) / Elective	3
ENVS 485		Track Requirement (if needed) / Elective	3
ENVS 491		Track Requirement (if needed) / Elective	3
Track Requirement	4	Track Requirement (if needed) / Elective	3
Track Requirement	3		
Track Requirement	3		
	13		**16**

Total Units 120

[1] Students who place into a math course below MATH 115 should NOT be placed into BIOL 200 & BIOL 200L and should instead take GEOL 121 and/or GEOG 101.

[2] Students should be enrolled in MATH 115 (or lower) if they are not placed into MATH 117, MATH 119, or MATH 211.

Learning Outcomes

1. Apply their knowledge of the sciences and the scientific method to collect, analyze and interpret data that they have collected or to critique the methods used by others to collect, analyze and interpret data.
2. Identify the cultural, economic, geographic and/or political facets of environmental problems/situations and relate their understanding of these components to particular situations.
3. Relate the theoretical background materials presented in natural science, social science or humanities courses to specific current environmental problems/dilemmas.
4. Students will display competency in essential skills required of a college graduate by reading, interpreting, analyzing and evaluating written discourse.
5. Students will display competency in essential skills required of a college graduate by researching a topic, develop an argument and organize supporting details (ILTC).