

Environmental Sciences (BS)

To see more about what you will learn in this program, visit the Learning Outcomes website (<https://apps.oirp.ncsu.edu/pgas/>)!

This area of study uses interdisciplinary approaches that link natural science and social science disciplines, and a knowledge of environmental systems and earth processes. Such interdisciplinary approaches are essential for understanding changes in a rapidly changing world, and for understanding our past, present, and future. Environmental scientists will help ensure human prospects by improving both socio-economic development and environmental quality through innovation in new technologies and policies.

Public interest about environmental issues is increasing. Protecting and improving the environment involves knowledge and systematic problem-solving skills that are essential for environmental sciences. North Carolina State University's environmental sciences degree program provides sound, individualized academic programs for students who can develop a wide range of careers. For information on entrance requirements, contact the program coordinator:

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Plan Requirements

Code	Title	Hours	Counts towards
English & Communication			
ENG 101	Academic Writing and Research ¹	4	
	Communication Skills (p. 2)	6	
Mathematical Science and Physics			
MA 131	Calculus for Life and Management Sciences A	3	
	or MA 141	Calculus I	
MA 231	Calculus for Life and Management Sciences B	3	
	or MA 241	Calculus II	
	Select one of the following:	4	
PY 205 & PY 206	Physics for Engineers and Scientists I and Physics for Engineers and Scientists I Laboratory		
PY 211	College Physics I		
	Select one of the following:	4	

PY 208 & PY 209
Physics for Engineers and Scientists II and Physics for Engineers and Scientists II Laboratory

PY 212
College Physics II

Natural Sciences

CH 101	Chemistry - A Molecular Science	3
CH 102	General Chemistry Laboratory	1
CH 220 & CH 222	Introductory Organic Chemistry and Organic Chemistry I Lab	4
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
AEC/PB 360 or BIO 183	Ecology Introductory Biology: Cellular and Molecular Biology	4
SSC 200 & SSC 201	Soil Science and Soil Science Laboratory	4

Departmental Requirements

ENV 100	Student Success in Environmental First Year	1
ENV 101	Exploring the Environment	2
ES 100	Introduction to Environmental Sciences ¹	3
ES 111	Applications of Environmental Sciences ¹	1
ES 200	Climate Change and Sustainability ¹	3
ES 300	Energy and Environment ¹	3
ES 400	Analysis of Environmental Issues ¹	3
ST 311	Introduction to Statistics	3
	Analytical Skills Electives (p. 3)	3
	Economics Electives (p. 3)	3
	Environmental Law and Policy Electives (p.)	3

External Learning Experience (p. 3)	3
Focal Area	
ES Focal Area (See Advisor) ²	15
Electives	
Advised Electives (See Advisor) ²	9
General Education Program (GEP) Courses	
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)	6
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)	2
GEP US Diversity, Equity, and Inclusion (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-usdei/)	3
GEP Global Knowledge (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/) (Verify Requirements)	
Foreign Language Proficiency (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/foreign-language-proficiency/) GEP Global Knowledge (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/) (Verify Requirements)	
Free Electives	
Free Electives (12 Hr S/U Lmt) ³	10
Total Hours	120

¹ A grade of C- or better is required.

² Students should consult their academic advisors to determine how to complete this requirement.

³ Students should consult their academic advisors to determine which courses fill this requirement.

Communication Skills Electives

Code	Title	Hours	Counts towards
Written Communication Skills			
Maximum of 3 credits			
COM 336	Newsletter Writing and Production	3	
ENG 210	Introduction to Language and Linguistics	3	
ENG 214	Introduction to Editing	3	

ENG 216	Technologies for Texts	3
ENG 281	Introduction to Creative Nonfiction	3
ENG 287	Explorations in Creative Writing	3
ENG 288	Fiction Writing	3
ENG 289	Poetry Writing	3
ENG 292	Writing About Film	3
ENG 316	Introduction to News and Article Writing	3
ENG 317	Designing Networked Communications	3
ENG 323	Writing in Rhetorical Traditions	3
ENG 324	Modern English Syntax	3
ENG 331	Communication for Engineering and Technology	3
ENG 332	Communication for Business and Management	3
ENG 333	Communication for Science and Research	3
ENG 422	Writing Theory and the Writing Process	3
ENG 425	Analysis of Scientific and Technical Writing	3
ENG 426	Analyzing Style	3
FLE 402	Advanced Written Communication in English for International Students	3

Verbal/Oral Communication Skills

Maximum of 3 credits

AEE 311	Communication Methods and Media	3
COM 110	Public Speaking	3
COM 112	Interpersonal Communication	3
COM 202	Small Group Communication	3
COM 211	Argumentation and Advocacy	3
COM 226	Introduction to Public Relations	3

COM 289	Science Communication and Public Engagement	3
COM 292	Language, Communication, and Culture	3
COM 392	International and Crosscultural Communication	3
COM 395	Studies in Rhetoric and Digital Media	3
COM 411	Rhetorical Criticism	3
COM 436	Environmental Communication	3
COM 479	Climate Change Communication	3
ENG 321	Survey of Rhetorical Theory	3
ENG 325	Spoken and Written Traditions of American English Dialects	3
ENG 326	History of the English Language	3
ENG 327	Language and Gender	3
ENG 328	Language and Writing	3
ENG 329	Language in Globalization	3
ENG 335	Language Development	3
ENG 395	Studies in Rhetoric and Digital Media	3
ENG 411	Rhetorical Criticism	3
ENG 494	Special Topics in Linguistics	1-3
HSS 392	International and Crosscultural Communication	3
PRT 442		3
THE 103	Introduction to the Theatre	3
THE 203	Theory and Practice of Acting	3
THE 293	Theater Practicum	1-6
WGS 327	Language and Gender	3

Analytical Skills Electives

Code	Title	Hours	Counts towards
GIS 280	Introduction to GIS	3	
ST 312	Introduction to Statistics II	3	
FOR 353	GIS and Remote Sensing for Environmental Analysis and Assessment	3	
PS 371	Research Methodology of Political Science	3	

Economics Electives

Code	Title	Hours	Counts towards
ARE 201	Introduction to Agricultural & Resource Economics	3	
ARE 201A	Introduction to Agricultural & Resource Economics	3	
EC 201	Principles of Microeconomics	3	
EC 205	Fundamentals of Economics	3	
NR 219	Natural Resource Markets	3	

Environmental Law and Policy Electives

Code	Title	Hours	Counts towards
ARE 309	Environmental Law & Economic Policy	3	
PS 320	U.S. Environmental Law and Politics	3	
PS 336	Global Environmental Politics	3	
NR 460	Renewable Natural Resource Management and Policy	3	

External Learning Experience Electives

Code	Title	Hours	Counts towards
ES 496	Environmental Science Internship	1-3	

ES 497	Professional Development in Environmental Science	1-3
ES 498	Research in Environmental Science	1-3
ES 499	Thesis in Environmental Science	3

Semester Sequence

This is a sample.

First Year

Fall Semester		Hours
ENG 101	Academic Writing and Research ¹	4
ENV 100	Student Success in Environmental First Year	1
ENV 101	Exploring the Environment	2
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
MA 131	Calculus for Life and Management Sciences A	3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Hours		15

Spring Semester

CH 101	Chemistry - A Molecular Science	3
CH 102	General Chemistry Laboratory	1
ES 111	Applications of Environmental Sciences ¹	1
MA 231	Calculus for Life and Management Sciences B	3
ES 100	Introduction to Environmental Sciences ¹	3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
Hours		14

Second Year

Fall Semester		Hours
PY 211	College Physics I	4
CH 220 & CH 222	Introductory Organic Chemistry and Organic Chemistry I Lab	4
Communications Requirement (p.)		3
Free Elective		3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Hours		15

Spring Semester

PY 212	College Physics II	4
ES 200	Climate Change and Sustainability ¹	3
ST 311	Introduction to Statistics	3

AEC/PB 360 or BIO 183	Ecology or Introductory Biology: Cellular and Molecular Biology	4
Free Elective		3
Hours		17

Third Year

Fall Semester

ES 300	Energy and Environment ¹	3
Economics Requirement (p. 3)		3
Advised Elective I ³		3
Communications Requirement (p. 2)		3
Focal Area I ²		3
Hours		15

Spring Semester

Focal Area II ²		3
Advised Elective II ³		3
SSC 200 & SSC 201	Soil Science and Soil Science Laboratory	4
GEP US Diversity, Equity, and Inclusion (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-usdei/)		3
Free Elective		3
Hours		16

Fourth Year

Fall Semester

Environmental Law and Policy Requirement (p.)		3
External Learning Experience (p. 3)		3
Focal Area III ²		3
Advised Elective III ³		3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
Hours		15

Spring Semester

ES 400	Analysis of Environmental Issues ¹	3
Analytical Skills Requirement (p. 3)		3
Focal Area IV ²		3
Focal Area V ²		3
Free Elective ²		1
Hours		13

Total Hours **120**

¹ Must be completed with a grade of C- or higher.

² See adviser to determine a relevant focal area and related course selections.

³ Advised Electives (9 credit hours) are to be selected in consultation with your adviser and need to focus on Environmental Science. At least 6 hours must be at the 400-level or above.

Career Opportunities

The Environmental Sciences program provides opportunities for students to rigorously explore complex, interdisciplinary environmental issues by combining courses from a number of NC State colleges to create a thorough interdisciplinary grounding. All degree options encourage students to pursue original research and gain field experience tackling real-world challenges — leaving them well prepared to take advantage of

career opportunities once they graduate. Some graduates find jobs in the environmental industry, including careers as environmental consultants, working in large corporations, or starting their own businesses. Others find careers working in federal, state, and local agencies with environmental mandates. Still others continue their educations in professional and graduate schools.