NATURAL RESOURCES & ENVIRONMENTAL SCIENCES: ENVIRONMENTAL SCIENCE & MANAGEMENT, BS

for the degree of Bachelor of Science in Natural Resources & Environmental Sciences, Environmental Science & Management Concentration

Environmental Science and Management emphasizes the biological, chemical, and physical features of the environment. It is designed for students interested in the management of soil and water resources and in understanding how to protect and improve environmental quality. The concentration includes coursework in environmental chemistry, environmental microbiology, watershed hydrology, and environmental quality, as well as courses focused more specifically on soil and water sciences.

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Graduation Requirements

Minimum hours for graduation: 126 hours.

University Requirements

Minimum of 40 hours of upper-division coursework generally at the 300- and 400-level. These hours can be drawn from all elements of the degree. Students should consult their academic advisor for additional guidance in fulfilling this requirement.

The university and residency requirements can be found in the Student Code (https://studentcode.illinois.edu/article3/part8/3-801/) (§ 3-801) and in the Academic Catalog (http://catalog.illinois.edu/general-information/degree-general-education-requirements/).

General Education Requirements

Follows the campus General Education (Gen Ed) requirements (https://courses.illinois.edu/gened/DEFAULT/DEFAULT/). Some Gen Ed requirements may be met by courses required and/or electives in the program.

Code	Title	Hours
Composition I		4-6
Advanced Composition		3
Humanities & the Arts (6 hours)		6
Natural Sciences & Technology (6 hours)		6
fulfilled by CHEM 102, CHEM 104, IB 103; and IB 104 or IB 150; and ABE 152 or ACES 102 or ATMS 140 or CPSC 113 or GEOL 107 or GEOL 118 or GGIS 103 or MCB 100 or MCB 150 or NPRE 101 or PHYS 101 or PHYS 211		
Social & Behavioral Sciences (6 hours)		6
fulfilled by ACE 100 or ECON 102; and NRES 287		
Cultural Studies: Non-Western Cultures (1 course)		3
Cultural Studies: Western/Comparative Cultures (1 course)		3
fulfilled by NRES 287		
Cultural Studies: US Minority Cultures (1 course)		3
Quantitative Reasoning (6-10 hours; at least one course must be Quantitative Reasoning I)		6-10
fulfilled by MATH 220 or MATH 221 or MATH 234; and ACE 262 or CPSC 241 or ECON 202 or PSYC 235 or SOC 280 or STAT 100 or STAT 107		
Language Requirement (0-15 hours; completion of the third semester or equivalent of a language other than English is required)		0-15

Code	Title	Hours
Major Requirements		
Communications Requirement		3 or 6
Select from the following:		
CMN 101	Public Speaking	
CMN 111 & CMN 112	Oral & Written Comm I and Oral & Written Comm II	
ALEC 115	Let's Talk about Food, Agriculture, and the Environment	
Economics Requirement		3-4
Select from the following:		
ACE 100	Introduction to Applied Microeconomics	
ECON 102	Microeconomic Principles	
Math Requirement		4-5
Select from the following:		
MATH 220	Calculus	
MATH 221	Calculus I	
MATH 234	Calculus for Business I	
Statistics Requirement		3-4
Select from the following:		
ACE 262	Applied Statistical Methods and Data Analytics I	
CPSC 241	Intro to Applied Statistics	
ECON 202	Economic Statistics I	
PSYC 235	Intro to Statistics	
SOC 280	Intro to Social Statistics	
STAT 100	Statistics	
STAT 107	Data Science Discovery	
Science Requirements		19-22
CHEM 102 & CHEM 103	General Chemistry I and General Chemistry Lab I	
CHEM 104 & CHEM 105	General Chemistry II and General Chemistry Lab II	
IB 103	Introduction to Plant Biology	
IB 104	Animal Biology	
or IB 150 & IB 151	Organismal & Evolutionary Biol and Organismal & Evol Biol Lab	
Select one additional course from the following:		
ABE 152	Water in the Global Environment	
ACES 102	Intro Sustainable Food Systems	
ATMS 140	Climate and Global Change	
CPSC 113	Environment, Agriculture, and Society	

GEOL 107	Physical Geology	
GEOL 118	Natural Disasters	
GGIS 103	Earth's Physical Systems	
MCB 100	Introductory Microbiology	
MCB 150	Molecular & Cellular Basis of Life	
NPRE 101	Introduction to Energy Sources	
PHYS 101	College Physics: Mech & Heat	
PHYS 211	University Physics: Mechanics	
College of ACES Requirements (Core)		**2**
NRES 123	NRES Orientation to Illinois	
Natural Resources and Environmental Sciences Requirements (Core)		**31-33**
NRES 102	Introduction to NRES	
NRES 201	Introductory Soils	
NRES 219	Applied Ecology	
NRES 287	Environment and Society	
NRES 325	Natural Resource Policy Mgmt	
NRES 348	Fish and Wildlife Ecology	
NRES 385	Field Experience	
NRES 421	Quantitative Methods in NRES	
NRES 454	GIS in Natural Resource Mgmt	
NRES 456	Integrative Ecosystem Management	
Select one additional field experience course from the following:		
NRES 293	Professional Internship	
NRES 294	Resident Internship	
NRES 295	Undergrad Research or Thesis	
NRES 385	Field Experience	
NRES 396	UG Honors Research or Thesis	

Code	Title	Hours
Concentration Core Requirements		
NRES 351	Introduction to Environmental Chemistry	3
NRES 401	Watershed Hydrology	3
NRES 475	Environmental Microbiology	3
Concentration Elective Requirements		
Two Soil and Water Science Courses		6-8
NRES 429	Aquatic Ecosystem Conservation	
NRES 471	Pedology	
NRES 474	Soil and Water Conservation	
NRES 482	Aquatic Biogeochemistry	
NRES 485	Stream Ecology	
NRES 487	Soil Chemistry	
NRES 488	Soil Fertility and Fertilizers	
NRES 490	Surface Water System Chemistry	
ABE 454	Environmental Soil Physics	
GGIS 406	Fluvial Geomorphology	
One Environmental Quality Course		3-4
NRES 403	Watersheds and Water Quality	
NRES 455	Advanced GIS for Environmental Management	
ATMS 449	Biogeochemical Cycles	
CPSC 431	Plants and Global Change	
ESE 320	Water Planet, Water Crisis	
ESE 445	Earth Resources Sustainability	
ESE 482	Challenges of Sustainability	
GEOL 380	Environmental Geology	
GGIS 476	Environmental Remote Sensing	
IB 361	Ecology and Human Health	
ETMA 352	Land and Water Mgt Systems	
Total Concentration Hours		**18-21**
Total Hours		**126**

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Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence. For guidance on creating your own degree sequence, consult the Graduation Plan Handout *(*https://go.illinois.edu/gradplan/*).*

Students must fulfill their Language Other Than English requirement by successfully completing a third level of a language other than English. For more information, see the corresponding section on the Degree and General Education Requirements page *(*http://catalog.illinois.edu/general-information/degree-general-education-requirements/*).*

First Year

First Semester	Hours
NRES 102	3
NRES 123	2
Composition I or Communications Requirement	4
IB 104 or 150 ***and*** 151	4
Language Other Than English (3rd level)	4
	17

Total Hours 17

First Year

Second Semester	Hours
CHEM 102	3
CHEM 103	1
Communications Requirement or Composition I	3
Math Requirement	4
IB 103	4
	15

Total Hours 15

Second Year

First Semester	Hours
NRES 219	3
CHEM 104	3
CHEM 105	1
ACE 100 or ECON 102	4
Choose additional course from Science Requirement list	3
General Education course	3
	17

Total Hours 17

Second Year

Second Semester	Hours
NRES 287	3
NRES 201	4
Statistics Requirement	3
General Education course	3
Free Elective course	3
	16

Total Hours 16

Third Year

First Semester	Hours
NRES 454	4
NRES 348	3
NRES 351	3
Field Experience course	2
General Education course	3
	15

Total Hours 15

Third Year

Second Semester	Hours
NRES 421	3
Soil and Water Science course	3
General Education course	3
General Education course	3
Free Elective course	3
	15

Total Hours 15

Fourth Year

First Semester	Hours
NRES 401	3
NRES 385	2
NRES 325	3
Environmental Quality course	4
Free Elective course	4
	16

Total Hours 16

Fourth Year

Second Semester	Hours
NRES 456	3
NRES 475	3
Soil and Water Science course	3
Free Elective course	3
Free Elective course	3
	15

Total Hours 15

Total Hours: 126

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Students graduating with the B.S. in NRES should be able to:

1. Understand the scientific method/ways of knowing and critically evaluate information.
2. Integrate principles of biological, chemical, physical, and social sciences and apply them to resource and environmental issues using a systems approach.
3. Understand ecological principles underpinning management of resources, populations, communities, and ecosystems.
4. Use data collection and analysis tools (such as field methods, GIS, modeling, and statistics) to develop plans for managing resource/environmental challenges and adapt plans in response to rapid change.
5. Understand the policies governing resources and the environment and identify social dimensions (stakeholders, interests, trade-offs, synergies, ethical principles) to consider in the development of management plans.
6. Communicate effectively with colleagues, stakeholders, and the public about environmental and resource management issues.
7. Recognize how diverse groups understand the environment, experience positive and negative environmental impacts, and perceive just and equitable solutions.

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Natural Resources & Environmental Sciences

Natural Resources & Environmental Sciences website (https://nres.illinois.edu/)
W-503 Turner Hall
1102 S. Goodwin Ave.
Urbana, IL 61801
(217) 333-2770
nres@illinois.edu

Advising

Advising Website (https://nres.illinois.edu/academics/undergraduate-degree/academic-resources/)
(217) 333-5824

nres-ssc@illinois.edu

College of Agricultural, Consumer & Environmental Sciences

College of Agricultural, Consumer & Environmental Sciences website (https://aces.illinois.edu/)

ACES Office of Academic Programs

128 Mumford Hall
1301 West Gregory Drive
Urbana, IL 61801
(217) 333-3380
aces-academics@illinois.edu

Admissions

ACES Undergraduate Admissions (https://aces.illinois.edu/admissions/)
University of Illinois Urbana-Champaign Undergrad Admissions (https://www.admissions.illinois.edu/)
(217) 333-3380
visitACES@illinois.edu