

Environmental and Sustainability Sciences and Economics, BS (Boston)

Through this combined major, students develop an awareness of the intrinsic connection between the environment and economics and understand how long-run economic growth is crucially dependent on policies that account for the sustainability and well-being of the environment and that are grounded on environmental science.

There are a number of interdisciplinary opportunities involving environmental and sustainability sciences. Due to curricular overlap, combinations of any environmental and sustainability sciences major, including combined majors, cannot occur with majors or minors in ecology and evolutionary biology or environmental studies or with the minor in geoscience.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Universitywide Requirements

All undergraduate students are required to complete the Universitywide Requirements (<https://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/>).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (<https://catalog.northeastern.edu/undergraduate/university-academics/nupath/>).

Environmental and Sustainability Sciences Requirements

Code	Title	Hours
Core Courses		
ENVR 1400 and ENVR 1401	Foundations in Environmental and Sustainability Sciences and Lab for ENVR 1400	5
ENVR 1200 and ENVR 1201 or ENVR 2200	Dynamic Earth and Lab for ENVR 1200 Earth's Changing Cycles	4-5
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	5
ENVR 2515	Sustainable Development	4
Skills Courses		
Complete one of the following skills courses:		4-5
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
ENVR 5260	Geographical Information Systems	
Electives		
Complete four courses from these lists:		16
ENVR 4970	Junior/Senior Honors Project 1	
<i>Earth Oceans and Environmental Change</i>		
ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	
ENVR 2340 and ENVR 2341	Earth Landforms and Processes and Lab for ENVR 2340	
ENVR 3125 or ENVR 3600	Global Oceanic Change Oceanography	
ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500	
ENVR 5150	Climate and Atmospheric Change	
ENVR 5190	Soil Science	
ENVR 5600	Coastal Processes, Adaptation, and Resilience	
ENVR 5670	Global Biogeochemistry	
<i>Conservation, Restoration, and Management</i>		

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EEMB 2400	Introduction to Evolution
EEMB 3460	Conservation Biology
EEMB 3465	Ecological and Conservation Genomics
EEMB 4001	Landscape and Restoration Ecology
ENVR 4505	Wetlands
ENVR 5700	Streams and Watershed Ecology
<i>Sustainable Planning and Development</i>	
ENVR 3150	Food Security and Sustainability
ENVR 3200	Water Resources
ENVR 5000	Community Stakeholder Engagement in Environmental Management and Research
ENVR 5210	Environmental Planning
ENVR 5350	Sustainable Energy and Climate Solutions
ENVR 5563	Advanced Spatial Analysis
ENVR 5800	Climate Adaptation and Nature-Based Solutions
<i>Environment and Society</i>	
ENVR 5220	Ecosystem-Based Management
ENVR 5450	Applied Social-Ecological Systems Modeling
ENVR 5750	Urban Ecology
POLS 2395	Environmental Politics and Policy
PPUA 5260	Ecological Economics
PPUA 5268	International Environmental Policy
SOCL 2485	Environment, Technology, and Society

Economics Requirements

Code	Title	Hours
Core Courses		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics for Economists	4
ECON 2560	Applied Econometrics	4
ECON 3423	Environmental Economics	4
Supporting Courses		
<i>Calculus</i>		
MATH 1231	Calculus for Business and Economics (It is highly recommended that students who take MATH 1231 take sections devoted to econ students only.)	4
or MATH 1241	Calculus 1	
or MATH 1245	Calculus with Applications	
or MATH 1251	Calculus and Differential Equations for Biology 1	
or MATH 1340	Intensive Calculus for Engineers	
or MATH 1341	Calculus 1 for Science and Engineering	
<i>Computer Science</i>		
Complete one of the following:		4
CS 1100 and CS 1101	Computer Science and Its Applications and Lab for CS 1100	
MISM 2510	Fundamentals of Information Analytics	
Electives		
Complete two courses in the following ranges, with only one at the 1000 level. Unless otherwise noted in specific combined majors, required core economics courses cannot be counted as electives by students completing Department of Economics programs:		8
ECON 1200–ECON 1999		
ECON 2990 – ECON 3559		
ECON 3561 - ECON 4689		

ECON 4900–ECON 4996

ECON 5200–ECON 5999

Integrative Requirements

Code	Title	Hours
Introduction to College		
ECON 1000 or INSC 1000	Economics at Northeastern Science at Northeastern	1
Environmental and Sustainability Sciences Integrative Course		
Complete one of the following (courses used as electives may not overlap with courses used as integrative):		4
ENVR 3150	Food Security and Sustainability	
ENVR 5350	Sustainable Energy and Climate Solutions	
ENVR 5450	Applied Social-Ecological Systems Modeling	
ENVR 5563	Advanced Spatial Analysis	
Economics Integrative Course		
Complete one of the following (courses used as electives may not overlap with courses used as integrative):		4
ECON 1711	Economics of Sustainability	
ECON 3404	International Food Policy	
ECON 3425	Energy Economics	
Capstone		
Complete one of the following:		4
ENVR 4050	Solving Emerging Environmental Challenges through Capstone	
ENVR 4971	Junior/Senior Honors Project 2	
ENVR 4997	Senior Thesis	
ECON 4692	Senior Economics Seminar	
ECON 4997	Senior Economics Thesis	

English Requirements (First-Year Writing and Advanced Writing in the Disciplines)

Code	Title	Hours
ENGW 1111 or ENGW 1102 or ENGW 1113 or ENGW 1114	First-Year Writing First-Year Writing for Multilingual Writers First-Year Writing Innovation Seminar First-Year Writing with Service-Learning	4
ENGW 3307 or ENGW 3303 or ENGW 3308 or ENGW 3315	Advanced Writing in the Sciences Advanced Writing in the Environmental Professions Advanced Writing in the Social Sciences Interdisciplinary Advanced Writing in the Disciplines	4

Co-op Requirements

Students who want to participate in co-op will need to complete Professional Development for Co-op (EESC 2000) .

Code	Title	Hours
EESC 2000	Professional Development for Co-op	1

Economics GPA Requirement

Grades in the following four economics courses must average to a minimum of C (2.000):

Code	Title	Hours
ECON 2315	Macroeconomic Theory	
ECON 2316	Microeconomic Theory	
ECON 2350	Statistics for Economists	
ECON 2560	Applied Econometrics	

NUPath Requirements

The following NUPath requirements are fulfilled by required courses in this major:

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- Analyzing and Using Data (AD)
- Conducting Formal and Quantitative Reasoning (FQ)
- Demonstrating Thought and Action in a Capstone (CE)
- Engaging with the Natural and Designed World (ND)
- Two Writing-Intensive Courses in the Disciplines (WI)
- Understanding Societies and Institutions (SI)

Other NUPath requirements may be fulfilled by electives in the major.

Science GPA Requirement (Environmental and Sustainability Sciences)

A minimum 2.000 GPA in the following course codes is required: ENVR, EEMB.

Environmental and Sustainability Sciences and Economics Major Credit Requirements.

Complete 83 hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Plan of Study

FOUR YEARS, TWO CO-OPS IN SUMMER SECOND HALF/FALL

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1115		4 CS 1100, 2000 <i>and</i> 2001, or MISM 2510		4 Elective		4 Elective	4
ENGW 1111 or 1102		4 ECON 1116		4 Elective		4 Elective	4
ENVR 1000 or ECON 1000		1 ENVR 2200 or 1200 <i>and</i> 1201		4			
ENVR 1400 and ENVR 1401		5 ENVR elective 1		4			
MATH 1231, 1241, 1245, 1251, 1340, or 1341		4					
	18		16		8		8
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 2315		4 ECON 2316		4 Elective		4 Co-op	0
EEMB 2302		4 ECON 2350		4 Elective		4	
EEMB 2303		1 ENVR 2515		4			
ECON elective 1		4 ENVR elective 3		4			
ENVR elective 2		4					
	17		16		8		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ECON 2560		4 ENVR elective 4		4 Co-op	0
		ECON 3423		4 Elective		4	
		ENGW 3308, 3307, or 3315		4			
		ENVR 3150, 5350, 5450, or 5563		4			
	0		16		8		0
Year 4							
Fall	Hours	Spring	Hours				
Co-op	0	ENVR 4050, 4997, ECON 4692, or ECON 4997	4				
		ECON 1711, 3404, or 3425	4				
		ECON elective 2	4				

ENVR elective 5	4
0	16

Total Hours: 131