

Cross-Disciplinary Science, MS (Boston)

Please see Cross-Disciplinary Science PhD (<https://catalog.northeastern.edu/graduate/science/cross-disciplinary-science-phd/>) for further information on PhD programs available.

Students who do not qualify for the PhD Biophysics degree or the PhD Human Behavior and Sustainability Sciences degree, but who have completed required coursework with a cumulative GPA of 3.000 or better, may be eligible to receive a terminal MS Cross-Disciplinary Science degree. Note that no students will be admitted directly into this degree program to pursue a master's degree.

Program Requirements

Concentration

Complete one of the following concentrations:

- Biophysics (p. 1)
- Human Behavior and Sustainability Sciences (p. 2)

PROGRAM CREDIT/GPA REQUIREMENTS

31 total semester hours required

Minimum 3.000 GPA required

Biophysics Concentration

CORE REQUIREMENTS

Code	Title	Hours
Thermodynamics and Statistical Mechanics		
CHEM 5636 or PHYS 7305	Statistical Thermodynamics Statistical Physics	3
Chemistry		
CHEM 5621 or CHEM 5638 or CHEM 5641	Principles of Chemical Biology Molecular Modeling Computational Chemistry	3
Cell and Molecular Biology		
BIOL 6301	Molecular Cell Biology	4
Biological Physics		
PHYS 7731	Physics of Biological Processes and Living Systems 1	4
Graduate Biophysics Seminar		
Complete this repeatable course each semester of the program:		
INSC 7100	Biophysics Seminar	0
Laboratory Rotation		
Complete the following variable-credit course twice (register at 3 semester hours for the first lab rotation and at 2 semester hours for the second lab rotation):		5
PHYS 9984	Advanced Research	1-8

ELECTIVES

Code	Title	Hours
Complete 12 semester hours from the following:		12
Physics Breadth Courses		
PHYS 5116	Network Science 1	
PHYS 5318	Principles of Experimental Physics	
PHYS 7301	Classical Mechanics/Math Methods	
PHYS 7302	Electromagnetic Theory	
PHYS 7315	Quantum Theory 1	
PHYS 7321	Computational Physics	
PHYS 7322	Nonequilibrium Physics	
PHYS 7335	Dynamical Processes in Complex Networks	
PHYS 7741	Physics of Biological Processes and Living Systems 2	

Biology Breadth Courses

BIOL 5103 to BIOL 6961

Chemistry Breadth Courses

CHEM 5610 to CHEM 5688

Human Behavior and Sustainability Sciences Concentration**CORE REQUIREMENTS**

Code	Title	Hours
EEMB 7103	Seminar in Sustainability Sciences	2
EEMB 8103	Readings in Sustainability Sciences	2
ENVR 5450	Applied Social-Ecological Systems Modeling	4
PSYC 5180	Quantitative Methods 1	3
PSYC 5181	Quantitative Methods 2	3
PSYC 5410	Human Behavior and Sustainability	3

RESEARCH

Code	Title	Hours
Complete a minimum of 6 semester hours from the following:		6
PSYC 8401	Research Project	
or EEMB 8984	Research	

ELECTIVES

Code	Title	Hours
Complete 8 semester hours from the following:		8

Psychology Breadth Courses

PSYC 5110	Cognitive Science
PSYC 5120	Proseminar in Sensation
PSYC 5130	Proseminar in Perception
PSYC 5140	Proseminar in Biology of Behavior
PSYC 5150	Proseminar in Clinical Neuroscience
PSYC 5170	Social and Affective Science

Sustainability Breadth Courses

EEMB 5130	Population Dynamics
EEMB 5506	Biology and Ecology of Fishes
EEMB 5518	Ocean and Coastal Processes
EEMB 5522	Experimental Design Marine Ecology
ENVR 5115	Advanced Topics in Environmental Geology
ENVR 5260	Geographical Information Systems
ENVR 5350	Sustainable Energy and Climate Solutions
ENVR 5600	Coastal Processes, Adaptation, and Resilience
ENVR 5700	Streams and Watershed Ecology
ENVR 5750	Urban Ecology
ENVR 5800	Climate Adaptation and Nature-Based Solutions
ENVR 6150	Food Security and Sustainability
ENVR 6500 and ENVR 6501	Biostatistics and Lab for ENVR 6500
INSH 5301	Introduction to Computational Statistics
INSH 5302	Information Design and Visual Analytics
INSH 6300	Research Methods in the Social Sciences
INSH 6406	Analyzing Complex Digitized Data
INTL 5100	Climate and Development
PHTH 5214	Environmental Health
PPUA 5246	Participatory Modeling for Collaborative Decision Making
PPUA 5249	Sustainable Urban Coastal Policy
PPUA 5261	Dynamic Modeling for Environmental Decision Making

PPUA 5267	Climate Policy and Justice
PPUA 5268	International Environmental Policy
Psychology Depth Courses	
PSYC 7250	Seminar in Clinical Neuroscience
PSYC 7300	Advanced Quantitative Analysis
Sustainability Depth Courses	
EEMB 7101	Seminar in Marine Sciences
EEMB 7102	Seminar in Ecology and Evolutionary Biology
EEMB 7103	Seminar in Sustainability Sciences
EEMB 7104	Seminar in Geosciences
ENVR 6102	Environmental Science and Policy Seminar 2
LPSC 7312	Cities, Sustainability, and Climate Change
POLS 7334	Social Networks
PPUA 6101	Environmental Science and Policy Seminar 1
PPUA 7346	Resilient Cities
SOCL 7267	Environment, Health, and Society