
Environmental Science

[Dr. Bruce A. Wiggins](#), Coordinator

Phone: (540) 568-6196

Email: wigginba@jmu.edu

Website: <http://www.jmu.edu/environment/science.shtml>

[Print Version of Catalog](#) ■

Environmental Science

This minor is a cross disciplinary program that any student may elect. Students pursuing programs ranging from the physical, natural or social sciences to education, journalism or business could benefit from this broadly-based curriculum. The program draws from courses that focus on the application of scientific concepts and principles to the understanding of environmental problems and their solutions. The minor draws upon the expertise of faculty in the areas of biology, chemistry, geography, physics, and integrated science and technology.

The environmental science minor:

- Provides a scientific background to those students interested in environmental law, environmental economics and environmental sustainability.
- Broadens the student's understanding of how sciences are linked to environmental questions.
- Complements any major by focusing on courses related to environmental issues.

The minimum requirement for a minor in environmental science is 24 credit hours taken from the four groups outlined below. Students wishing to complete more than one of the environmental minors (environmental management, environmental science and environmental studies) may receive dual credit for the capstone course ([ENVT 400](#)), but may not receive dual credit for any other courses that might be shared by the minors. Pre-approved study abroad and/or internship experiences may be substituted for one or more of the courses listed below.

No more than two courses from a single subject area can count toward the completion of the environmental science minor. A score of four or greater in AP Environmental Science substitutes for [GEOL 115](#) or [ISAT 112](#). International studies and special topics courses with appropriate content may be counted (prior approval by the environmental science minor coordinator required).

Courses

Group 1. Introduction to Environmental Science¹

[BIO 124](#). Ecology and Evolution

[BIO 250](#). Ecology and Evolution

[GEOL 102](#). Environment: Earth

Credit Hours

3–4

[GEOL 115](#). Earth Systems and Climate Change
[ISAT 100](#). Environmental and Energy Sustainability
[ISAT 112](#). Environmental Issues in Science and Technology
[GEOG 210](#). Physical Geography
[GEOL 110](#). Physical Geology
Group 2. Advanced Environmental Science courses
[BIO 354](#). Global Climate and Life
[BIO/GEOL 400](#). Geology and Ecology of the Bahamas
[BIO/GEOG 402](#). Forest Ecology
[BIO 452](#). Population Ecology
[BIO 453](#). Microbial Ecology and Evolution
[BIO 454](#). Introduction to Biometrics
[BIO 456](#). Landscape Ecology
[BIO 457](#). Biological Applications of GIS
[BIO 459](#). Freshwater Ecology
[BIO 465](#). Environmental Toxicology
[BIO 466](#). Toxicology Seminar
[CHEM 353](#). Environmental Chemistry
[CHEM 354](#). Environmental Chemistry Field Camp
[CHEM 450](#). Nuclear and Radiation Chemistry
[ENGR 411](#). Fundamentals of Sustainable Engineering and Design
[ENGR 472](#). Biological Treatment Processes and Reactor Design
[ENGR 474](#). Physical Chemical Treatment Processes
[ENGR 478](#). Water Resources Engineering
[ENVT 200](#). Environmental Systems Theory
[GEOG 215](#). Geospatial Tools I – Cartography and GIS
[GEOG 216](#). Geospatial Tools II – Remote Sensing and GPS
[GEOG 290](#). Human Interaction with the Physical Environment
[GEOG 340](#). Biogeography
[GEOG 365](#). Cartography and Geospatial Visualization
[GEOG 366](#). Introduction to Geographic Information Science
[GEOG 385](#). Principles of Remote Sensing
[GEOL 211](#). Introduction to Oceanography
[GEOL/GEOG 310](#). Environmental Impact
[GEOL 320](#). Meteorology
[GEOL 340](#). Environmental Soil Science
[GEOL/CHEM 355](#). Geochemistry of Natural Waters
[GEOL 377](#). Earth Surface Processes
[GEOL 406](#). Paleoclimatology and Paleoceanography
[GEOL 410](#). Engineering Geology
[GEOL 460](#). Hydrogeology
[ISAT 311](#). Role of Energy in Modern Society
[ISAT 320](#). Fundamentals of Environmental Science & Technology I
[ISAT 321](#). Fundamentals of Environmental Science & Technology II
[ISAT 420](#). Environmental Analysis and Modeling
[ISAT 423](#). Environmental Remediation
[ISAT 425](#). Environmental Hydrology
[ISAT 427](#). Industrial Hygiene
[ISAT 428](#). Industrial Ecology
[MATH 321](#). Analysis of Variance and Experimental Design

MATH 322 . Applied Linear Regression	
MATH 324 . Applied Nonparametric Statistics	
MATH 328 . Time Series Analysis	
MATH/BIO 345E . Biometry	
MATH 421 . Applied Multivariate Statistics	
PHYS 215 . Energy and the Environment	
Group 3. Environmental Studies courses	3
One of the following courses:	
ANTH 373 . Anthropological Perspectives on Environment	
ECON 305 . Environmental Economics	
ECON 340 . Economics of Natural Resources	
ENG 371 . Literature and the Environment	
ENG 390 . The Environmental Imagination	
GEOG 325 . Environmental Ethics	
HIST 427 . U.S. Environmental History	
ISAT 311 . Role of Energy in Modern Society	
ISAT 421 . Environmental Policy and Regulation	
ISAT 473 . Local Agriculture and Farm Internships	
SCOM 354/WRTC 326 . Environmental Communication and Advocacy	
SOC 311 . Sociology of the Environment	
WRTC 416/SCOM 465 . Rhetoric of Environmental Science and Technology	
Group 4. Capstone course	3
ENVT 400 . Capstone Seminar ²	

24-25

1 Can be double-counted with General Education.

2 All students must complete the capstone course ENVT 400. Students must have completed 15 hours of their environment minor in order to enroll in the capstone.