

Courses

ENV3110 Physical Geology

This course introduces students to the scientific study of the Earth's physical structure, materials and dynamic processes. Emphasis is placed on understanding the composition of Earth materials, the mechanisms driving plate tectonics and the surface and internal processes that shape the planet. Students explore geologic hazards, Earth's history and the sustainable use of natural resources. The course also considers the impact of human activities on geologic systems and the role of geology in addressing environmental challenges.

Prerequisite(s): SCI1010, Corequisite: ENV3116.

Offered at Providence

3 Semester Credits

ENV3116 Physical Geology Laboratory

This laboratory course complements the physical geology lecture by providing students with hands-on experience in the observation, identification and analysis of Earth materials and geologic processes. Through fieldwork, laboratory experiments and data interpretation, students develop practical skills in mineral and rock identification, topographic and geologic map reading, and the use of scientific tools and methods to investigate Earth's structure and surface dynamics. Emphasis is placed on applying the scientific method to explore plate tectonics, geologic hazards and surface processes, while considering the role of geology in environmental stewardship and sustainable resource management.

Prerequisite(s): SCI1010, Corequisite: ENV3110.

Offered at Providence

1 Semester Credit

ENV3220 Freshwater Ecology

This course explores the ecological principles and environmental applications of limnology, focusing on freshwater ecosystems such as lakes, rivers, wetlands and groundwater systems. Students examine the physical, chemical and biological characteristics of these systems, the interactions among aquatic organisms, and the processes that regulate ecosystem structure and function. Emphasis is placed on hydrology, nutrient cycling, energy flow, biodiversity, and the impacts of human activities including pollution, land use and climate change. The course also addresses freshwater resource management, conservation strategies and policy frameworks, with a focus on sustainability and ecological health.

Prerequisite(s): BIO1022, BIO1026, Corequisite: ENV3226.

Offered at Providence

3 Semester Credits

ENV3226 Freshwater Ecology Laboratory

This course provides hands-on experience in freshwater ecology, emphasizing data collection and ecological analysis. Students investigate the physical, chemical and biological components of freshwater systems through structured lab exercises and/or field trips. Topics include stream geomorphology, lake morphometry, water chemistry, plankton and macroinvertebrate sampling, bioindicators, and ecosystem assessment. The course applies limnological principles to real-world freshwater environments and developing skills in ecological monitoring and scientific reporting.

Prerequisite(s): BIO1022, BIO1026, Corequisite: ENV3220.

Offered at Providence

1 Semester Credit

ENV4110 Advanced Topics in Environmental Science & Sustainability

This course provides an in-depth, interdisciplinary exploration of environmental science topics through the lens of sustainability. Students investigate topics such as hydrogeology, environmental economics, geospatial mapping, wastewater treatment, soil ecology, environmental law, invasive species, natural resource management, environmental geology, climate change, environmental justice, infectious diseases, population dynamics and mine drainage. Emphasis is placed on integrating scientific analysis, policy evaluation and spatial data to develop sustainable solutions. Students engage in collaborative projects, case studies and technical communication to prepare for careers in environmental science and sustainability.

Prerequisite(s): BIO3100, BIO3106, ENV3110, ENV3116, ENV3220, ENV3226,

Corequisite: ENV4116.

Offered at Providence

3 Semester Credits

ENV4116 Advanced Topics in Environmental Science & Sustainability Laboratory

This course provides hands-on experience in investigating environmental systems and sustainability challenges. Students apply scientific methods, geospatial technologies and field techniques to explore topics such as hydrogeology, wastewater treatment, soil ecology, environmental monitoring and climate resilience. Emphasis is placed on data collection, analysis and communication of findings. The lab supports the lecture course by reinforcing interdisciplinary approaches to solving real-world environmental problems.

Prerequisite(s): BIO3100, BIO3106, ENV3110, ENV3116, ENV3220, ENV3226,

Corequisite: ENV4110.

Offered at Providence

1 Semester Credit