Earth Science (ERTH)

ERTH 050 Service Learning in Earth Sci 0.0 SH [ ]
Students volunteer in some capacity to assist in educational outreach in earth science and/or environmental studies or in research as a technician. Projects may serve Principia or other communities or outside agencies.

ERTH 111 Introductory Geology 4.0 SH [GESL]
This course studies the internal and external processes that form and shape the Earth and interprets the resulting landforms. Internal processes include tectonic plate movement, volcanoes, earthquakes, and mountain building. External processes include weathering, erosion, streams, wind, ocean currents, and glaciers. Labs cover mineral and rock identification, topographic, and geologic map reading. Field trips reinforce class material.
Class Level Restriction: Freshman and Sophomore only.

ERTH 170 Earth Science 4.0 SH [GESL]
Covers earth science topics that will explore the relationship between the earth's systems and human activities within a region. Topics include the Earth's physical processes (terrestrial and/or oceanographic), tectonic history and mineral and water resources. Title extended to describe region and/or topic. May be taken up to three times provided topics differ. Offered on Principia abroads or field programs only.

ERTH 205 Introduction to Oceanography 4.0 SH [GESL]
An introductory survey of oceanography as an interdisciplinary marine science. Topics include geological features and structures of ocean basins; the chemistry of sea water; heat, circulation, the carbon cycle, and air-sea interactions as they relate to climate; and biology processes in the sea.

ERTH 225 Environmental Geology 3.0 SH [GESN]
Geology from the perspective of the interrelationship of humanity and the Earth and the value of understanding the Earth in land use planning. Topics include geologic hazards, such as earthquakes, volcanoes, landslides, water flooding and drought issues, and global climate changes.

ERTH 230 Nonrenewable Resources 3.0 SH [GESN]
Survey of Earth's nonrenewable energy and material, as well as water resources - their occurrence in or on the Earth's crust, how they are extracted, processed, and used, and the impacts of these steps on the environment.

ERTH 242 Historical Geology 4.0 SH [GESL]
The geologic history of the Earth and the evolution of life through the study of fossils. Includes the movement of tectonic plates, shaping of continents, and formation of mountains, all interpreted from the study of rock and fossil records. Labs include rock and fossil identification, physical and biostratigraphic correlation of rock units, and interpretation of local geologic history.

ERTH 280 Earth Sci Field Investigations 1.0-4.0 SH [ ]
Field investigation and related lab work for a special earth science project. Involves library and/or field research and reporting of scientific findings. Offered on demand. The title will be extended to describe the current topic. May be repeated up to a maximum of 12 SH provided topics or depth of research differ.
Prerequisite: ERTH 111 or ERTH 205.

ERTH 301 Environmental Mapping & GIS 4.0 SH [ ]
Introduction to the concepts, techniques, and applications of mapping and monitoring the environment. Students become familiar with the uses of topographic maps, aerial photography, satellite imagery, Global Positioning Systems (GPS), and Geographic Information Systems (GIS). Students design and implement an ecosystem mapping project. Also listed as BNR 301.
Class Level Restriction: Junior and Senior only.

ERTH 330 Sedimentary Geology 4.0 SH [ ]

Principles of stratigraphy, sedimentary processes, characteristics, and relationships among marine and nonmarine depositional systems, facies analysis, stratigraphic analysis, and basin analysis. Laboratory includes textural analysis, sedimentary structures, and use of electric logs in subsurface mapping.
Prerequisite: ERTH 111 and ERTH 242.
Class Level Restriction: Junior and Senior only.

ERTH 401 Senior Thesis 1.0-6.0 SH [ ]

Project selected in accordance with student's qualifications, interests, and needs. Project may be a component of an internship. May be offered for variable credit from one to six semester hours. May be taken three times up to a total of six semester hours.

ERTH 410 Senior Readings 3.0 SH [ ]

This course introduces students to seminal pieces of environmental literature and to cutting edge thinking on environmental problems. It challenges students to define and defend their personal values with regard to the environment and to become active citizens in the environmental issues facing society.
Prerequisite: four ERTH courses.
Class Level Restriction: Junior and Senior only.