

Earth Sciences - CPS (ESC)

Search ESC Courses using FocusSearch (<http://catalog.northeastern.edu/class-search/?subject=ESC>)

ESC 1100. The Geosphere: Physical and Historical Geology. (3 Hours)

Examines the dynamic processes that continually create the Earth. Examines the internal structure, resulting tectonic movements, volcanism and seismic activity, rock and mineral genesis, and chemical and physical weathering shaping Earth's surface through time. Stresses the scientific basis for our understanding of the physical earth.

Attribute(s): NUpath Natural/Designed World

ESC 1150. The Atmosphere. (3 Hours)

Examines Earth's atmospheric structure and applies laws of physics to describe and explain broad climate and circulation patterns and local weather events that maintain or can disrupt ecosystems as heat energy and water move through Earth's spheres.

Attribute(s): NUpath Natural/Designed World

ESC 1200. The Hydrosphere: Oceanography, Ground and Surface Water. (3 Hours)

Examines the physical structure, biological provinces, and varying chemistries of Earth's ocean and other water resources. Topics range from El Nino/Southern Oscillation to lake eutrophication.

Attribute(s): NUpath Natural/Designed World

ESC 1250. The Environment and Society. (3 Hours)

Surveys Western attitudes toward the natural world, the development of the conservation movement, environmental crisis of the 20th century, and the sustainability movement. Investigates how environmental degradation and protection efforts differentially affect various social groups. Examines political, economic, and social trends that frame current policy debates. The backdrop of broader societal trends such as urbanization, demographic changes, and globalization provide understanding for current legal and policy positions.

Attribute(s): NUpath Difference/Diversity, NUpath Societies/Institutions

ESC 1300. Science, Technology, and Society. (3 Hours)

Examines the nature of scientific inquiry within the social context. Examines the impact of scientific discoveries and technological advances in the context of sustainability. Offers students an opportunity to explore exponential technologies, visions of the future, and the limits of prognostication with respect to their career fields and with an eye to impacts of society in general.

ESC 1990. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

ESC 2100. Planetary Science. (3 Hours)

Covers the origin and context of Earth. Topics include the structure of our solar system, structure of the sun and cycles of solar activity on Earth systems, atmospheric and geologic processes in our solar system, current explorations, and future issues.

Prerequisite(s): ESC 1050 with a minimum grade of D- or ESC 1100 with a minimum grade of D- or ESC 1150 with a minimum grade of D- or ESC 1200 with a minimum grade of D-

Attribute(s): NUpath Natural/Designed World

ESC 2990. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

ESC 3100. Introduction to Geographical Information Systems. (3 Hours)

Offers a hands-on introduction to the use of a geographic information system (GIS). Topics include spatial data collection; data accuracy and uncertainty; cartographic principles and data visualization; geographic analysis; and the legal, economic, and ethical issues associated with the use of a GIS.

Prerequisite(s): ESC 1050 with a minimum grade of D- or ESC 1100 with a minimum grade of D- or ESC 1150 with a minimum grade of D- or ESC 1200 with a minimum grade of D-

Attribute(s): NUpath Creative Express/Innov

ESC 3220. Water on and Underground: Geochemistry and Hydrology. (3 Hours)

Examines biogeochemical cycles affecting freshwater resources, including the fundamentals of aquatic chemistry. Using the principles of hydrology, the movement of water through the Earth system is measured and forecast, especially as it pertains to flooding.

Prerequisite(s): BIO 1200 with a minimum grade of D- ; CHM 1200 with a minimum grade of D- ; (ESC 1050 with a minimum grade of D- or ESC 1100 with a minimum grade of D-)

ESC 3990. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

ESC 4955. Project. (1-4 Hours)

Reviews the theory and practice of environmental permitting and environmental assessment. Topics include major federal and state environmental regulations, the environmental permitting process, risk assessment and management, and environmental compliance. May be repeated without limit.

ESC 6962. Elective. (1-4 Hours)

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.