

EARTH SCIENCES (ERTH)

ERTH 5000. Geoscience Core Course. (3 Credits)

Exposes students to a solid background in a variety of topics related to integrative geosciences, emphasizing interdisciplinarity. Development of speaking skills through oral presentations, and writing skills through preparation and defense of large, interdisciplinary grant proposals. Required of all first year graduate students in Geosciences. Formerly offered as GSCI 5000.

May be repeated for a total of 6 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205000>)

ERTH 5050. Special Problems in Geology. (1-6 Credits)

Advanced study and research in geology. Formerly offered as GSCI 5050. May be repeated for a total of 36 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205050>)

ERTH 5110. Sedimentology and Stratigraphy. (3 Credits)

Principles of sedimentology and stratigraphy. Physical processes of sediment transport and deposition. Characteristics of sediments and sedimentary rocks. Facies models for terrigenous clastic, chemical, and biochemical sediments. Stratigraphic frameworks and methodologies. One or more weekend field trips may be required. Formerly offered as GSCI 5110.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205110>)

ERTH 5130. Geomicrobiology. (3 Credits)

Microbial diversity and biogeochemistry in aquatic ecosystems, microbe-mineral interactions, fossil record, atmospheric record, microbialites, and research methodology in geomicrobiology. A weekend field trip may be required.

Enrollment Requirements: Not open to students who have passed EARTH/MARN 4130.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205130>)

ERTH 5140. Sedimentary Basin Analysis. (3 Credits)

Tectonic and environmental controls on the development and evolution of sedimentary basins. Emphasis on mechanisms of formation, characteristic depositional patterns, and sediment composition in modern and ancient tectonic settings. Basin analysis methods include sedimentology, stratigraphy, geochemistry, provenance and paleocurrent analysis, subsidence modeling, and interpretation of geophysical data. Formerly offered as GSCI 5140.

Enrollment Requirements: Not open for credit to students who have passed EARTH 4140.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205140>)

ERTH 5150. Applied Data Analysis in Earth Sciences. (3 Credits)

Multivariate spatial analysis methods and statistical inference in earth science, emphasizing how to translate conceptual understanding into computer code. Formerly offered as GSCI 5150.

Enrollment Requirements: Recommended preparation: STAT 1000Q or 1100Q, GEOG 3500Q. Not open for credit to students who have passed GEOG 4150 or EARTH 4150.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205150>)

ERTH 5160. Carbonate Platforms and Reefs. (3 Credits)

Carbonate platforms and reefs. Physical, chemical, and biological controls on the nature of carbonate depositional environments and their distribution in time and space. Characteristics and classification of carbonate sediments, limestones, and dolostones. Petrographic and geochemical techniques. Facies models for depositional systems. Stratigraphic frameworks and methodologies. One or more weekend field trips may be required.

Enrollment Requirements: Recommended preparation: Undergraduate coursework or research in sedimentology/stratigraphy or related fields. View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205160>)

ERTH 5210. Glacial Processes and Materials. (3 Credits)

The climates and dynamics of glaciers, the geologic processes responsible for the materials and landforms of glaciated regions, and the applications of glacial geology to paleoclimatology, paleoecology, land use history, hydrology, engineering, and natural resources. Includes two weekend days of field trips to be scheduled, and tutorial meetings. Formerly offered as GSCI 5210.

Enrollment Requirements: Recommended preparation: EARTH 3020. Not open for credit to students who have passed EARTH 4210.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205210>)

ERTH 5230. Advanced GIS for Remote Sensing for Geoscience Applications. (3 Credits)

(Also offered as GEOG 5230.) Research methods for using Geographic Information Systems, remote sensing, and image interpretation to investigate problems in geoscience. Includes research techniques for data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes. Formerly offered as GSCI 5230.

Enrollment Requirements: Not open to students who took EARTH 4230.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205230>)

ERTH 5240. Watersheds and Environmental Change. (3 Credits)

Research methods and advanced theory for studying watershed processes, lake systems, late Pleistocene to present environmental change, the environmental impacts of dams, and the application of sediment coring. Includes field trips to lakes and reservoirs in eastern Connecticut. Formerly offered as GSCI 5240.

Enrollment Requirements: Instructor consent. Recommended preparation: EARTH 3020 or equivalent. Not open for credit to students who have passed EARTH 4240.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205240>)

ERTH 5320. Advanced Plate Tectonics. (3 Credits)

Introduces students to techniques used in analyzing plate motions on a sphere, including poles of rotation and instantaneous and finite motions. The course integrates geologic data and analytical techniques with a rigorous understanding of plate motions and provides students with a global understanding and appreciation of the Earth. Formerly offered as GSCI 5320.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205320>)

ERTH 5330. Active Tectonics. (3 Credits)

Tectonic processes that shape the Earth's surface, particularly its landforms. Emphasis on short-term processes that produce disasters and catastrophes and affect human society. Formerly offered as GSCI 5330.

Enrollment Requirements: Not open for credit to students who have passed ERTH 4330.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205330>)

ERTH 5430. Stable Isotope Biogeochemistry. (3 Credits)

Fundamentals of stable isotope biogeochemistry. Origin of elements and stable isotopes; equilibrium and kinetic fractionation; isotope systematics of carbon, nitrogen, hydrogen, oxygen, and sulfur; biogeochemical systems; isotopes as a forensic tracer; and isotopes in paleoclimate and paleoenvironmental research. Formerly offered as GSCI 5430.

Enrollment Requirements: Not open for credit to students who have passed ERTH 4430.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205430>)

ERTH 5440. Dates and Rates in Earth and Environmental Science. (3 Credits)

Introduction to the principles, materials, and diverse applications of commonly used geochronologic methods in geologic, environmental, archeological, and planetary studies. Topics may include the timing and tempo of planetary formation, Earth processes, natural hazards, formation of natural resources, biotic evolution, and environmental change. Formerly offered as GSCI 5440.

Enrollment Requirements: Not open for credit to students who have passed ERTH 4440.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205440>)

ERTH 5520. Exploring and Engineering Seismology. (3 Credits)

Theory of elasticity applied to wave propagation: equations of motion; reflection and refraction of elastic waves; velocity analysis and fundamental petrophysics; and principles of detecting subsurface interfaces and structures. Formerly offered as GSCI 5520.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205520>)

ERTH 5550. Physics of the Earth. (3 Credits)

The composition, structure, and dynamics of the earth's core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow. Formerly offered as GSCI 5550.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205550>)

ERTH 5560. Fundamentals of Planetary Science. (3 Credits)

Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres. Formerly offered as GSCI 5560.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205560>)

ERTH 5740. Energy Resources: Past, Present, and Future. (3 Credits)

Overview of energy resources (fossil fuel and renewable), underground fluid storage, and greenhouse gas sequestration. Subsurface geoscientific exploration and extraction methods.

Enrollment Requirements: Not open for credit to students who have passed ERTH 4740.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205740>)

ERTH 5790. Field Methods in Hydrogeology. (1-6 Credits)

Field methods associated with ground water and contamination assessments. Formerly offered as GSCI 5790.

May be repeated for a total of 6 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205790>)

ERTH 5810. Modeling the Changing Atmosphere and Ocean. (3 Credits)

Modeling past and future climate, with an emphasis on conceptual understanding of the earth system and simulation results from climate models of different complexities. Formerly offered as GSCI 5810.

Enrollment Requirements: Not open for credit to students who have passed ERTH 4810.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205810>)

ERTH 5850. Paleoclimatology. (3 Credits)

Introduction to the geological evidence, research methods, and hypotheses associated with major climatic events in Earth's history through a combination of lectures, paper discussions, and a climate modeling project. Formerly offered as GSCI 5850.

Enrollment Requirements: Not open to students who have passed ERTH 4850.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205850>)

ERTH 5900. Environmental Geochemistry. (3 Credits)

Introduction to geochemistry of terrestrial and aqueous environmental systems. Chemical weathering and water-rock interactions; geochemistry of natural waters; chemical systems of the geosphere, biosphere and atmosphere; and geochemistry and climate. Formerly offered as GSCI 5900.

Enrollment Requirements: Not open for credit to students who have passed ERTH 4720.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%205900>)

ERTH 6000. Seminar in Earth Sciences. (1-3 Credits)

Weekly meetings focused on recent advances in Earth Sciences, including departmental seminars and/or discussions of scientific literature. May be repeated for a total of six credits.

Enrollment Requirements: Instructor consent. Recommended preparation: Bachelors degree in Earth Sciences or related field. May be repeated for a total of 6 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%206000>)

ERTH 6130. Seminar in Paleontology. (1-6 Credits)

Readings and discussions on recent advances in paleontology and paleobiology. Formerly offered as GSCI 6130.

May be repeated for a total of 6 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%206130>)

ERTH 6430. Seminar in Geochemistry. (1-3 Credits)

Readings and discussions of recent advances in low temperature and stable isotope geochemistry.

May be repeated for a total of 6 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ERTH%206430>)

ERTH 6550. Special Topics in Geophysics. (1-6 Credits)

Formerly offered as GSCI 6550.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/details&code=ERTH%206550>)