

GEOLOGY (GEOL)

GEOL 1022 - History of Life (3 Credits)

Non-technical study of fossils through time and their relationships to environments through earth history. Includes discussion of evolution and extinction events and current controversies. Max hours: 3 Credits.

Grading Basis: Letter Grade

GEOL 1073 - Physical Geology: Surface Processes (3 Credits)

This survey course develops a basic understanding of surface processes and landforms in geology. It includes one all-day field trip. Students must also take the accompanying laboratory GEOL 1074. No co-credit with GEOL 1072. Prereq or Co-req: GEOL 1074. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq or Co-req: GEOL 1074

Additional Information: Denver Core Requirement, Biol Phys Sci - Lec.

GEOL 1074 - Physical Geology: Surface Processes Laboratory (1 Credit)

Introduces the basic scientific approach through investigations, observations, and experiments in surface processes and landforms in geology. Students must also take the accompanying lecture GEOL 1073. Prereq or Co-req: GEOL 1073. Max hours: 1 Credit.

Grading Basis: Letter Grade

Prereq or co-req: GEOL 1073

Additional Information: Denver Core Requirement, Biol Phys Sci - Lab.

GEOL 1083 - Physical Geology: Internal Processes (3 Credits)

This survey course develops a basic understanding of physical geology emphasizing the earth's interior, covering internal processes and properties, with plate tectonics as the underlying theme, Includes one all-day field trip. Students must also take the accompanying laboratory GEOL 1084. No co-credit with GEOL 1082. Prereq or co-req: GEOL 1084. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq or co-req: GEOL 1084

Additional Information: Denver Core Requirement, Biol Phys Sci - Lec.

GEOL 1084 - Physical Geology: Internal Processes Laboratory (1 Credit)

Introduces the basic scientific approach through investigations, observations, and experiments in internal geologic processes and properties of the earth's interior with plate tectonics as the underlying theme. Prereq or co-req: GEOL 1083. Max hours: 1 Credit.

Grading Basis: Letter Grade

Prereq or co-req: GEOL 1083

Additional Information: Denver Core Requirement, Biol Phys Sci - Lab.

GEOL 1111 - First Year Seminar (3 Credits)

Restriction: Restricted to Freshman level students. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Restricted to Freshman level students

GEOL 1115 - Earth Sciences Content (1-3 Credits)

Covers content areas of undergraduate earth sciences. Topics include physical geology; historical geology; oceanography; meteorology; and astronomy. Max hours: 3 Credits.

Grading Basis: Letter Grade

GEOL 1202 - Introduction to Oceanography (3 Credits)

Surveys modern scientific knowledge of the world's oceans. Intended for non-science students, the course offers a non-quantitative introduction to the major facts and principles of physical, chemical, biological, and geological oceanography. The impact of natural and anthropic events on the marine environment are included. Max hours: 3 Credits.

Grading Basis: Letter Grade

GEOL 1400 - Geology of the National Parks (3 Credits)

Combines lecture and laboratory exercises to help students interpret Earth history using the national parks as examples. Students learn to identify the common rocks and minerals, and how to interpret topographic and geologic maps. Max hours: 3 Credits.

Grading Basis: Letter Grade

GEOL 1840 - Independent Study: GEOL (1-3 Credits)

Repeatable. Max hours: 3 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

GEOL 2939 - Internship (1-3 Credits)

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: 15 hours of 2.75 GPA. Repeatable. Max Hours: 9 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

GEOL 3011 - Mineralogy (4 Credits)

Principles of mineralogy, including crystallography, crystal chemistry, and a systematic study of the more important nonsilicate and silicate minerals. Origins and occurrences of minerals. Note: this course assumes that students have taken physical geology and college-level chemistry. Max hours: 4 Credits.

Grading Basis: Letter Grade

GEOL 3032 - Geology of Colorado (3 Credits)

Introductory course focused on the geology of Colorado. The course is divided into two parts: the first half covers general principles of geology, and the second is devoted to the observation of rock types, structures, and geologic relationships in the field. Discussion of plate tectonics, rock formation, construction and interpretation of geologic maps, the geologic time scale, geologic provinces of Colorado, evolution of major landforms, formation and development of mineral resources of Colorado, and current topics in environmental geology. Max hours: 3 Credits.

Grading Basis: Letter Grade

GEOL 3102 - Dinosaurs Past and Present (3 Credits)

A broad-based, non-technical new look at the world's most popular prehistoric animals. Stresses the rapid and perennial growth of knowledge about dinosaurs and the relevance of such knowledge in the 20th century. Prereq: Introductory geology and/or biology are recommended. Max hours: 3 Credits.

Grading Basis: Letter Grade

GEOL 3411 - Introductory Paleontology (4 Credits)

Studies invertebrate fossils, including a survey of the organic world and its history in the geological past. Includes an introduction to evolution and paleoecology, and discussion of the uses of fossils in geologic correlations. Note: this course assumes that students have taken introductory geology-surface processes or an introductory biology course. Max hours: 4 Credits.

Grading Basis: Letter Grade

GEOL 3421 - Sedimentation and Stratigraphy (4 Credits)

Introduces the principles of sedimentology and stratigraphy. Emphasis is on dynamic processes within sedimentary environments and the resulting stratigraphic record. Prereq: GEOL 1082. Max hours: 4 Credits.

Grading Basis: Letter Grade

Prereq: GEOL 1082

GEOL 3840 - Independent Study: GEOL (1-3 Credits)

Repeatable. Max Hours: 6 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

GEOL 3939 - Internship (1-3 Credits)

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing or higher. Repeatable. Max Hours: 9 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

Prereq: junior standing or higher

GEOL 4010 - Landscape Biogeochemistry (3 Credits)

A holistic approach to studying the role chemical elements play in synthesis/decomposition cycles, and the resultant environment from interaction of the lithosphere with the hydrosphere, atmosphere, biosphere, and pedosphere during geological, and ecological timeframes, together with anthropogenic activities. Prereq: GEOG 1202 or GEOL 1072 or permission of instructor. Cross-listed with GEOG 4010/ENVS 5010. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOG 1202 or GEOL 1072

GEOL 4020 - Earth Environments and Human Impacts (3 Credits)

Basic concepts describing earth's biomes and physical environment are presented in a systems context. Global warming assessment, from both political and scientific perspectives, is then presented. Model visualization of these concepts to consider human impacts on Earth's biomes is discussed. Earth system viewpoint, having links of Earth's biomes to oceans and atmosphere, completes the course discussion. Cross-listed with ENVS 5020, GEOG 4020. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

GEOL 4030 - Environmental Geology (3 Credits)

Applies geological information to interactions between people and the physical environment. Increasing awareness of its importance in our society means that this is an expanding field as companies are required to address the environmental consequences of their actions. Prereq: Senior standing. Cross-listed with ENVS 5030 and GEOL 5030. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restrictions: Restricted to Senior standing.

GEOL 4111 - Field Methods In Geology (3 Credits)

Introduction to the basic methods of geologic mapping (metamorphic, sedimentary, and igneous rocks), including use of the Brunton compass and Jacob Staff, as well as preparation of measured stratigraphic sections, geologic maps, and geologic cross-sections. Note: GEOL 1072 or GEOG 1202 required, GEOL 3421 strongly recommended. Prereq: GEOG 1202 or GEOL 1072. Cross-listed with GEOL 5111. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOG 1202 or GEOL 1072

GEOL 4240 - Applied Geomorphology (3 Credits)

Uses hands-on tasks and field trips to investigate processes behind Earth's changing landforms in a variety of physical landscapes (aeolian, volcanic, coastal, fluvial, karst, glacial and periglacial) as related to rock decay, soils and climatic forcings. Prereq: GEOG 1202 or GEOL 1072 (required) and GEOG 3232 strongly recommended. Cross-listed with GEOG 4240, 5240 and GEOL 5240. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOG 1202 or GEOL 1072

GEOL 4251 - Fluvial Geomorphology (3 Credits)

Examines interactions between Earth's surface and flowing water across spatial and temporal scales. Considers structure and function of the major components of fluvial systems, with particular attention to the variety of fluvial systems to hydrologic, geologic and anthropogenic controls. Cross-listed with GEOG 4251, GEOG 5251 and GEOL 5251. Prereq: Students must have completed GEOG 1202 or GEOL 1072 or have graduate standing or gain instructor approval in order to register for this course. GEOG 3232 is strongly recommended, though not required. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOG 1202 or GEOL 1072 or graduate standing

GEOL 4270 - Glacial Geomorphology (3 Credits)

Provides an in-depth view of the processes and systems found in glacial environments. Topics include: evidence of past glaciation; present-day glacial extent; glacier dynamics; glacial erosional processes and landforms; glacial depositional processes and landforms. Prereq: GEOG 1202 or GEOL 1072. Cross-listed with GEOG/GEOL 4270/5270. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOG 1202 or GEOL 1072

GEOL 4780 - Engineering Geology (4 Credits)

Studies geology as utilized in engineering and environmental practice. Emphasizes a conceptual integration of geologic materials, processes, and rates of change as a basis for successful application of geologic knowledge to environmental planning and engineering design projects. Prereq: MATH 2411 and CVEN 2121. Cross-listed with GEOL 5780 and CVEN 4780. Max hours: 4 Credits.

Grading Basis: Letter Grade

Prereq: CVEN 2121 and MATH 2411

GEOL 4840 - Independent Study: GEOL (1-3 Credits)

Repeatable. Max Hours: 12 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

GEOL 4880 - Directed Research (1-6 Credits)

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max hours: 6 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

GEOL 4995 - Global Study Topics (3-9 Credits)

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Prereq: GEOL 1072 and GEOL 1082. Cross-listed with GEOL 5995. Repeatable. Max hours: 12 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

Prereq: GEOL 1072 and GEOL 1082