

# GEOLOGY (GEOL)

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

Department consent required. 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 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 3840 - Independent Study: GEOL (1-3 Credits)

Department consent required. 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. Department consent required. 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: GEOL 1073 and GEOL 1074 or GEOL 1072 with a C- or higher, or instructor permission. Cross-listed with GEOG 4010 and ENVS 5010. Term offered: spring. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOL 1073 and GEOL 1074 or GEOL 1072 with a C- or higher.

Typically Offered: Spring.

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

This course examines the multitude of impacts that humans have exerted on Earth's biomes and physical environment in a systems context, including vegetation, animals, soils, water, landforms and the atmosphere. It considers the ways in which climate changes and modifications in land cover have altered the environment, and how such changes will still accelerate in the coming decades. The course also explores emergent topics such as rewilding, novel and no analogue ecosystems, and ecosystem services. Additionally, it assesses the future impact of a growing human population on the planet within a context of the "anthropocene," an era dominated by human activity. Prereq: ENVS 1044 and 1045 or ENVS 1042 or GEOG 1202, and GEOG 3232 or ENVS 3232 with a C- or higher. Cross-listed with ENVS 5020, GEOG 4020. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: ENVS 1044 and 1045 or ENVS 1042 or GEOG 1202, and GEOG 3232 or ENVS 3232 with a C- or higher.

Typically Offered: Fall.

**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: GEOL 1073 and GEOL 1074 or GEOL 1072 with a C- or higher. Cross-listed with GEOG 4240, 5240 and GEOL 5240. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOL 1073 and GEOL 1074 or GEOL 1072 with a C- or higher.

Typically Offered: Fall.

**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: GEOL 1073 and GEOL 1074 or GEOL 1072 with a C- or higher.

GEOG 3232 is strongly recommended, though not required. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOL 1073 and GEOL 1074 or GEOL 1072 with a C- or higher.

Typically Offered: Fall.

**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: GEOL 1073 and 1074 or GEOL 1072 with a C- or better. Cross-listed with GEOG 4270, GEOG 5270 and GEOL 5270. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOL 1073 and GEOL 1074 or GEOL 1072 with a C- or higher.

Typically Offered: Fall.

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

Department consent required. 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 1073 and GEOL 1074 or GEOL 1072 and GEOL 1083 and GEOL 1084 or GEOL 1082 with a C or higher and instructor permission. Cross-listed with GEOL 5995. Repeatable. Max hours: 12 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

Prereq: GEOL 1073 and GEOL 1074 or GEOL 1072 and GEOL 1083 and GEOL 1084 or GEOL 1082 with a C or higher and instructor permission.