Geology

Geology is the study of the Earth and encompasses a broad range of topics including Earth's history, composition, physical and chemical processes and the evolution of life. It has a unique perspective of time and scale, extending billions of years in the past and to global events. Because of human interaction with many Earth systems, geology is an environmental science that is vital to the resolution of such problems as climate change; groundwater supply and pollution; prediction and mitigation of earthquake, flooding and volcanic hazards; and natural resource discovery and utilization. Students majoring in geology acquire knowledge of value to many science and non-science professions.

The geology degree programs consist of a set of core courses that provide a foundation of geological principles and specialization tracks and elective courses that students choose to design a curriculum relevant to their interests. Many courses have a laboratory component where a hands-on, practical problem-solving approach to learning is emphasized. Students are introduced to basic and specialized computer programs and instrumental techniques used to gather and interpret data. Field trips to geological sites or field-based projects are regular features of several courses. Most classes for geology majors are small enough for students to receive individual attention and enjoy close contact with faculty in the classroom.

In the field of geology a student may work toward either a Bachelor of Arts or Bachelor of Science degree.

The Bachelor of Arts degree requires a major in geology but is a flexible program, permitting a student to combine education in geology with courses in other areas, such as other sciences, management or pre-law. A minor is optional. Having obtained a Bachelor of Arts degree, students may continue their education toward a Master of Science degree in geology.

The Bachelor of Science degree requires a core of Geology courses and courses in biology, chemistry, mathematics, physics and science electives. This degree requires a specialization to be obtained in one of the following: Geology, Environmental Geology, Geophysics, or Resource Geology. The specializations allow students to pursue specific career goals in the field of geology and related areas. The summer field course, usually taken between the junior and senior years, is part of the geology core. It is taught at a permanent field camp in the Beartooth Mountains near Red Lodge, Montana. Students desiring to do graduate work or to become a professional geologist will ordinarily pursue the Bachelor of Science degree.

Bachelor of Arts (B.A.) in Geology Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Geology Major Requirements	45-50
GEOL 220, GEOL 222, or GEOL 225, GEOL 221, GEOL 223, GEOL 224, GEOL 302, GEOL 310, GEOL 315, GEOL 325 (3 hours included in the UCC Physical Science hours)	21
GEOL 450 or GEOL 454	3-6
CHEM 200, CHEM 201 or CHEM 202, CHEM 210, CHEM 211, CHEM 212	10
PHYS 203A, PHYS 253A	4
MATH 109 or MATH 111	1-3

Degree Requirements	Credit Hours
Supportive Skills: CS 200B or CS 201 or CS 202 or ENGR 222, ENGL 290 or ENGL 291 or ENGL 491, GEOG 416, GEOG 417, GEOG 404 or GEOG 412, 2 semesters of remote sensing (GEOG 406 and GEOG 408), 2 semesters of GIS (GEOG 401 and GEOG 420), or 2 semesters of foreign language.	6
Free Electives	31-36
Total	120

Bachelor of Science (B.S.) in Geology Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Geology	64-65
GEOL 220 or GEOL 222 or GEOL 225; GEOL 221, GEOL 223, or GEOL 225, GEOL 224, GEOL 302, GEOL 310, GEOL 315, GEOL 325, GEOL 454 (3 hours included in the UCC Physical Science hours)	27
MATH 150	4
CHEM 200, CHEM 201, or CHEM 202, CHEM 210, CHEM 211, CHEM 212	10
PHYS 203A, PHYS 253A, PHYS 203B, PHYS 253B	8
Supportive skills: 6 credit hours of the following CS 200B or CS 201 or CS 202 or ENGR 222, GEOG 416, GEOG 417, MATH 282 or GEOG 404 or GEOG 412, 2 semesters of remote sensing (GEOG 406 and GEOG 408), 2 semesters of GIS (GEOG 401 and GEOG 420)	6
Writing Requirement: ENGL 290 or ENGL 291 or ENGL 491	3
One of the following specializations:	9-10
Geology Specialization - 9 hours of 400-level geology approved by the program advisor	9
Environmental Geology Specialization - Three courses from GEOL 418, GEOL 421, GEOL 436, GEOL 470/GEOL 471, GEOL 474, GEOL 476	9-10

Degree Requirements	Credit Hours
Geophysics Specialization - Three courses from GEOL 435, GEOL 436, GEOL 437, GEOL 466, GEOL 470, GEOL 471	9
Resource Geology Specialization - Three Courses from GEOL 418, GEOL 419, GEOL 420, GEOL 421, GEOG 434, GEOL 480, GEOL 482	9
Electives in Geology, Science, Mathematics or Technology	16-17
Total	120

Geology Minor

A minor in Geology consists of 16 hours of courses in or related to the program. A plan of study is determined through consultation with the academic advisor for geology.

Ancient Practices Minor

How — without the aid of modern technology — were ancient peoples able to construct catapults and compute the heavens, raise pyramids and other colossal buildings, craft weapons and statues in bronze, navigate across oceans, and brew beer and wine? How, without the benefit of centuries of accumulated knowledge available to us today, did people living in the distant past achieve intellectual milestones and execute monumental feats of engineering that have only recently been rivaled? Modern life is profoundly influenced by solutions to challenges that were first faced, and overcome, in the distant past. The Ancient Practices program allows students to explore these questions. It is a transdisciplinary course of study designed to allow students to explore life in the ancient world, with the opportunity to focus on those aspects of life in the past that are most relevant to their own interests and academic goals.

Ancient Practices Minor Requirements

To assure that all of the requirements are completed as efficiently as possible, students wishing to complete a Minor in Ancient Practices must be approved by faculty responsible for the Ancient Practices program, who will provide guidance in selection of courses that best align with the student's individual interests. The minor requires completion of a minimum of 12 credit hours, consisting of at least 9 credit hours of 200-400 level course work from an approved list of courses, (see below) and at least 3 credit hours of UNIV 431 or an approved capstone equivalent that simultaneously satisfies requirements within the student's major.

Courses taken at other institutions may apply toward the minor only if those courses are acceptable for transfer credit by the program or school that offers the course being substituted. No more than 6 credit hours of transfer credit may be counted towards the minor. Transfer credit may not be applied to satisfaction of the requirement for UNIV 431.

In addition to UNIV 431, approved Ancient Practices courses include the following:

AD 350 - Ancient Artistic Practices

ANTH 340E/ANTH 430E - Intro to the Archaeology of Ancient Egypt

ARC 314I - (Ancient) Expressions in Architecture

ENGR 305 – Archae-Engineering

GEOL 329I - Geomythology

HND 300 – Wining and Dining in the Ancient World

PHIL 304B - Ancient Technologies and the Greek Philosophers

Other relevant courses may be substituted with the approval of the responsible faculty. The list of approved courses will be updated periodically and will be available from the responsible faculty.

Geology Honors Program

Students admitted to the University Honors Program (UHP) and majoring in Geology may participate in the Geology Honors Program. This program offers students more challenging course options and helps them better develop their skills in the geological sciences. Students in the Geology Honors Program must complete at least three honors courses which have special assignments arranged with the course instructor. Honors students are also encouraged to complete an Honors thesis with a member of the Geology faculty. The UHP requirements are found at: honors.siu.edu.

Technology Fee

The College of Agricultural, Life, and Physical Sciences assesses undergraduate majors a technology fee of $4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semester.

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