



An Introduction to Geology – GEOL 105

University Studies Program

Course Outline

COURSE IMPLEMENTATION DATE: Pre 1998
OUTLINE EFFECTIVE DATE: September 2023
COURSE OUTLINE REVIEW DATE: April 2028

GENERAL COURSE DESCRIPTION:

An introduction to the major principles of physical and historical geology covering the origin and structure of the Earth, plate tectonics, volcanism and other mountain building processes, the erosion of the Earth's crust, and the formation and properties of minerals and rocks.

Program Information: This course is intended for University Studies and Business Management diploma and degree students. It can also be used as an elective for BMGT diplomas and the Bachelor in Business Administration (Sustainable Business Practices) degree.

Delivery: This course is delivered face to face and online

COTR Credits: 3

Hours for this course: 90 hours

Typical Structure of Instructional Hours:

| Instructional Activity | Duration |
|------------------------------------|-----------|
| Lecture Hours | 45 |
| Seminars / Tutorials | |
| Laboratory / Studio Hours | 45 |
| Practicum / Field Experience Hours | |
| Other Contact Hours | |
| Total | 90 |

Practicum Hours (if applicable):

| Type of Practicum | Duration |
|------------------------|----------|
| On-the-job Experience | N/A |
| Formal Work Experience | N/A |
| Other | N/A |
| Total | |

Course Outline Author or Contact:

Katie Burles, M.Sc.

Signature

APPROVAL SIGNATURES:

Department Head
Erin Aasland Hall
E-mail: aaslandhall@cotr.bc.ca

Dean of Business and University Studies
Stephanie Wells
E-mail: SWells2@cotr.bc.ca

Department Head Signature

Dean Signature

EDCO

Valid from: September 2023 – April 2028

Education Council Approval Date

COURSE PREREQUISITES AND TRANSFER CREDIT

Prerequisites: None

Corequisites: None

Flexible Assessment (FA):

Credit can be awarded for this course through FA Yes No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

Transfer Credit: For transfer information within British Columbia, Alberta and other institutions, please visit <http://www.cotr.bc.ca/Transfer>

Students should also contact an academic advisor at the institution where they want transfer credit.

Prior Course Number: N/A

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. The instructor will also supplement the course with materials that will be posted to COTROnline.

- Chris Johnson, Matthew D. Affolter, Paul Inkenbrandt, & Cam Mosher. An Introduction to Geology. Online: [https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johns_on_Affolter_Inkenbrandt_and_Mosher\)](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johns_on_Affolter_Inkenbrandt_and_Mosher))
- Bradley Deline, PhD Randa Harris, MS Karen Tefend, PhD. Laboratory Manual for Introductory Geology. Online: <https://web.ung.edu/media/university-press/Laboratory%20Manual%20for%20Introductory%20Geology%20Updated%20061620.pdf>

Please see the instructor's syllabus for additional information. In-class activities may include presentations and stories by guests or attendance of online events conducted by virtual meeting technologies.

LEARNING OUTCOMES:

Upon the successful completion of this course, students will be able to

- reflect upon the Ktunaxa story of creation, contrasting it with other Indigenous science and western scientific worldviews;
- outline respective ways to visit and learn from the homelands and waterways in Ktunaxa ?amak?is, the traditional territory of the Ktunaxa Nation;
- describe the four major spheres of the Earth and how they are interconnected;
- apply the evidence for the Plate Tectonic Theory and how it explains many of Earth's major processes;
- differentiate what happens at each stage of the Rock Cycle and how it relates to Plate Tectonics;
- recognize the identity of common rocks and minerals based on chemical and physical properties;
- describe the formation of various igneous, metamorphic, and sedimentary rocks;
- classify common rocks based on their mineralogy and texture;
- summarize the conditions that lead up to volcanism and earthquakes;
- explain the physical and chemical processes that break rock down into sediments and soils;
- recognize the factors that cause mass wasting and identify common land forms caused by mass wasting;
- define the factors that determine the amount of erosion from runoff and understand the various ways that a stream transports sediment;
- describe erosion features caused by surface and ground water and how they may impact on human communities;
- summarize the transformation of snow into glacial ice and describe the movement and the parts of the glacier and what processes go on at each part;
- identify major landforms caused by glacial erosion and deposition and describe how each formed;
- identify major landforms caused by wind erosion and deposition and describe how each formed; and
- identify major shoreline and sea floor landforms and describe how each formed.

COURSE TOPICS:

- Ktunaxa Creation Story
- Understanding the Earth: Introduction to physical geology and Plate Tectonics
- Earth materials and minerals
- Igneous rocks and intrusive igneous activity
- Volcanism, extrusive rocks
- Weathering, soils, sediments and sedimentary rocks
- Metamorphism and metamorphic rocks
- Earthquakes and Earth's Interior
- Mass wasting
- Surface water and erosion
- Ground water and subsurface erosion
- Glaciers and glaciation
- Wind erosion and deserts
- Shorelines and shoreline processes

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

EVALUATION AND ASSESSMENT (Face to Face and Online Delivery):

| Assignments | % Of Total Grade |
|-----------------|------------------|
| Lab | |
| Lab Assignments | 30% |
| Lab Exams | 20% |
| Class | |
| Midterm | 20% |
| Final Exam | <u>30%</u> |
| Total | 100% |

Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments, and use of electronic aids.

Note: Students must attain a 50% average on all lab-based assignments and exams and a 50% average on all class-based assignments and exams to pass Geology 105.

EXAM POLICY:

Students must attend all required scheduled exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled exam without approval will be given a grade of "0" for the exam.

COURSE GRADE:

Course grades are assigned as follows:

| Grade | A+ | A | A- | B+ | B | B- | C+ | C | C- | D | F |
|---------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Mark (Percent) | ≥ 90 | 89-85 | 84-80 | 79-76 | 75-72 | 71-68 | 67-64 | 63-60 | 59-55 | 54-50 | < 50 |

A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to course activities, including grade appeals, cheating and plagiarism.

COURSE CHANGES:

Information contained in course outlines is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor will endeavour to provide notice of changes to students as soon as possible. The instructor reserves the right to add or delete material from courses.