



## GEOL-105 – Introduction to Geology

University Arts and Science

**Effective Term & Year:** Fall 2022

**Course Outline Review Date:** 2023-04-01

**Program Area:** Math and Sciences

### 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 Methods:** On-campus (Face-to-Face), Online

**Credit Type:** College of the Rockies Credits

**Credits:** 3

**Course type/s:** Sciences, Lab Sciences

### Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	45
Seminar/Tutorials	
Laboratory/Studio	45
Practicum/Field Experience	
Co-op/Work Experience	

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Other

Total	90
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**Course Requisites:**

None

**Flexible Assessment:** Yes

In some cases students may be able to apply for recognition of prior learning outside the classroom. This flexible assessment process provides equivalent course credit. It is a rigorous process that may include external evaluation, worksite assessment, demonstration, standardized test, self-assessment, interview, products/portfolio, and challenge exam, or other measures as appropriate. Tuition fees apply. Contact an education advisor for more information.

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**Course Transfer Credit:**

For information about receiving transfer credit for courses taken at other BC institutions, please see <http://www.bctransferguide.ca>. All requests for course transfer credit from institutions in BC or elsewhere should go to the College of the Rockies Enrollment Services office.

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**Textbook Resources:**

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Monroe & Wicander, 2015, *The Changing Earth – Exploring Geology and Evolution*, 7th Ed., Stamford, C.T, Cengage Learning

Zumberge, J. et.al., *Laboratory Manual for Physical Geology*, 2014, 16th Ed. New York, McGraw Hill

Please see the instructor's syllabus or check COTR's online text calculator <https://textbook.cotr.bc.ca/> for a complete list of the currently required textbooks.

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**Learning Outcomes:**

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

- 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.

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### **Course Topics:**

- 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 Assessments

### Assessment Type: On-Campus (face-to-face) and Online, or Hybrid

Assessment Type	% of Total Grade
Lab Assignments	30%
Lab Exams	20%
Midterm	20%
Final Exam	30%
Total	100%

### Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

**Pass requirements:** A passing average (50% or higher) in both the theory and practical components.

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

#### Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a "0" on the exam.

#### Academic Policies:

College of the Rockies policies related to courses can be found at <https://cotr.bc.ca/about-us/college-policies/> and include the following:

- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.5.8 Academic Performance
- Policy 2.5.3 Grade Appeal
- Policy 2.4.9 Student Concerns Re Faculty

**Course Changes:**

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.