



Geology (GEOL) 200

Introductory Physical Geology (Revision 9)

Status:

Replaced with new revision, see the [course listing](#) for the current revision

Delivery mode:

Individualized study online with eText, and a Home Lab. This course is charged a lab fee

Credits:

3

Area of study:

Science

Prerequisite:

None

Precluded:

None

Challenge:

GEOL 200 has a challenge for credit option.

Faculty:

[Faculty of Science and Technology](#)

Overview

GEOL 200 introduces the field of physical geology, discussing materials that make up the Earth, processes that occur at the Earth's surface, and processes that occur within the Earth's interior. Laboratory exercises accompanied by supplementary reading help students to apply the course concepts, and the term project increases a student's exposure to a variety of rocks and minerals.

Outline

Geology 200 consists of 15 units, divided into four major sections.

Part A: Introduction

- Unit 1: Introduction to Theory

Part B: The Earth's Materials

- Unit 2: Minerals and Rock Types
- Unit 3: Igneous Rocks
- Unit 4: Weathering, Soil, and Sedimentary rocks
- Unit 5: Metamorphic Rocks

Part C: Earth Surface Processes

- Unit 6: Mass Wasting
- Unit 7: Surface Water
- Unit 8: Groundwater
- Unit 9: Glaciers and Glaciation
- Unit 10: Deserts and Wind Action
- Unit 11: Waves, Beaches, and Coasts

Part D: The Earth's Internal Processes

- Unit 12: Structural Geology and Earthquakes

- Unit 13: The Earth's Interior
- Unit 14: Plate Tectonics
- Unit 15: Mountain Belts and the Continental Crust

Learning outcomes

Upon successful completion of this course, you should be able to

- explain the plate tectonics theory, describe the internal structure of the Earth and list the fundamental differences between continents and ocean basins.
- define minerals and rocks, list the three major groups of rocks, and identify the most important minerals in each rock group.
- list five defining characteristics of a mineral, describe diagnostic properties of the major rock-forming minerals, and identify the minerals in hand specimens
- explain the formation, composition and classification of igneous rocks, metamorphic rocks and sedimentary rocks and be able to identify them in hand specimens.
- describe the most common types of mass wasting and outline factors that control mass wasting, including triggering mechanisms.
- describe the hydrological cycle and outline the role played by surface water and groundwater in the cycle.
- outline Earth surface processes that occur in glaciated areas, in deserts, and in coastal environments and describe erosional and depositional landforms associated with each environment.
- explain the concepts of stress and strain and interpret geological structures, including folds and faults, and explain the elastic rebound theory of earthquakes.
- explain how seismic waves, meteorites and gravity can provide information about the inner structure and composition of the Earth.
- describe the process of mountain building and outline the sequences of rocks formed by the convergence of different tectonic plate types.

Evaluation

To **receive credit** [↗](#) for GEOL 200, you must complete all of the assignments, the course project, and achieve a course composite grade of at least **C- (60 percent)** [↗](#), and achieve a grade of at least 60 percent on each of the examinations. Lab assignments range in value from three percent to four percent each of the final course grade and you are required to attain a lab average of 60 percent. The weighting of the composite grade is as follows:


Activity	Weight
Lab Exercises (12)	40%
Course Project	10%
Midterm Exam	20%
Final Exam	30%
Total	100%

The **midterm and final examinations** for this course must be requested in advance and written under the supervision of an AU-approved exam invigilator. Invigilators include either ProctorU or an approved in-person invigilation centre that can accommodate online exams. Students are responsible for payment of any invigilation fees. Information on exam request deadlines, invigilators, and other exam-related questions, can be found at the **Exams and grades** [↗](#) section of the Calendar.



To learn more about assignments and examinations, please refer to Athabasca University's **online Calendar** [↗](#).

Materials

Plummer, C. C., Carlson, D. H., & Hammersley, L. (2022). *Physical Geology* (17th ed.). McGraw–Hill. [!\[\]\(c694a3ff3b077d76910920a6a1593ab4_img.jpg\)](#) (eText)

Cronin, V. S. (Ed.), & Tasa, D. (Illus.). (2021). *Laboratory Manual in Physical Geology*, (12th ed.) Pearson.  (eText)

eTexts

Registration in this course includes electronic textbooks. For more information on **electronic textbooks**  , please refer to our **eText Initiative site**  .

Other Materials

The course materials include a Study Guide, a Course Orientation and a set of assignments, which are all provided online. A Moh's hardness scale test kit, a set of mineral specimens, a set of rock specimens, and a maps kit are included in a course package sent to the student.

Challenge for credit

Overview

The challenge for credit process allows you to demonstrate that you have acquired a command of the general subject matter, knowledge, intellectual and/or other skills that would normally be found in a university-level course.

Full information about **challenge for credit**  can be found in the Undergraduate Calendar.





Evaluation

To **receive credit**  for the GEOL 200 challenge registration, you must achieve a grade of at least **C- (60 percent)**  on the online examination.

Activity	Weight
Online Exam	100%
Total	100%

 **[Challenge for credit course registration form](#)**

Important links

- › [Academic advising](#) 
- › [Program planning](#) 
- › [Request assistance](#) 
- › [Support services](#) 

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

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View [previous revision](#) 
