

Environmental Issues in Earth Sciences

Department of Earth and Environmental Sciences

ERTH/ENVS 2410 Fall 2026

Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people.

Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.

Course Instructor:

Dr. Lexie Arnott (Lexie@dal.ca)

Office: LSC 3081 (3rd Floor Biology)

Office hours: By appointment through Bookings (check BrightSpace)

Course Description

Geology underlies many of the environmental problems facing humanity today. Topics include environmental aspects of energy and mineral resources, geologic hazards, geologic connections to pollution and waste disposal, and the role that water plays in its various guises. Canadian examples are incorporated where appropriate.

Course Prerequisites and Exclusions

One of: EARTH 1080, EARTH/GEOG 1030, EARTH/GEOG 1060, ENVS 1100.03 and ENVS 1200.03, or ENVS 1000.06, SUST 1001 or SCIE 1507.

This course does not count toward a Major or Honours in Earth Sciences

Student Resources

Resources to aid your learning will be posted on BrightSpace. If students are struggling with course content, they should book office hours with the instructor as early as possible. Office Hours can be scheduled through Bookings up to two weeks in advance. Meetings can be virtual (over MTeams) or in-person in office LSC 3081 (3rd floor Biology wing). If there are no times in Bookings that work for you, please contact the instructor directly via email.

Use of GenAI or LLMs is prohibited in this class

Course content

This course will cover environmental issues related to Earth resources (i.e., water, soils, and minerals). Natural and anthropogenic hazards such as erosion, desertification, and pollution as they relate to Earth resources will be explored. Although not explicitly covered, all subjects will be viewed through the lens of the current climate crisis.

Course Delivery

Lectures are Monday and Wednesday 4:05-5:25 in LSC 206 (What did we do to deserve that?). Course delivery is in person. PowerPoint slides will be made available within a week after the class delivery. Classes will not be recorded. Slides will not be posted before class. Please see the BrightSpace folder on student learning for information as to why that is.

Learning Objectives

- Identify and apply the basic knowledge and skills of geologic thinking to broader environmental concerns.
- Apply a general knowledge and understanding of earth materials and processes in an environmental context.
- Determine patterns and interconnections of geologic relevance to environmental problem solving.
- Read and interpret relevant maps, photos, diagrams, and graphs as they relate to the earth sciences aspect of the environment.
- Communicate effectively, ethically, and in plain language, the role of earth sciences to a given environmental issue
- Critically analyze environmental-related issues through an earth sciences lens using information presented in case studies and reports.
- Question your own assumptions, biases, and interpretations, and those of others as they relate to environmental issues and the earth sciences.

Course Materials

There is no textbook to purchase but you need to access BrightSpace and the linked resources. All assignments should be submitted as MSWord or MSPowerpoint documents or pdfs (other file formats, such as .pages, are not permitted).

You should bring a pen/pencil to class to participate in activities. You will be made aware of any other class requirements (ruler, eraser, kittens, etc.) ahead of time.

	Assessment
6%	Exercises
9%	Activities
30%	Tests
35%	Assignments
5%	BrightSpace
15%	Readings

Assessment

Please note: These components make up your final mark. There will be no redistribution of marks and no extra work given at the end of term. If you are concerned about your grades, please see me at the time the grade is given or within a reasonable period.

Exercises (6%):

- There will be two or three in-class exercises that will support learning of the content. These cannot be completed for grades outside of class.
- You will be informed of upcoming exercises in-class and on BrightSpace at least one class in advance of the exercise. These exercises will involve reading and interpreting maps, graphs, and scientific writing. You may need a ruler or calculator.
- To accommodate illness or other **excused absences**, marks may be reweighted to associated tests, but the exercises will be completed for a completion marks outside of class. The instructor reserves the right to require an alternative assessment if they consider it necessary.

Activities (9%)

- These are low-stakes activities that include class discussions, quizzes, entry/exit “tickets”, reflections, etc.
- You will not be given advanced notice of these activities, and they will occur most days (when there isn’t an exercise or assignment that day). **There are no makeups for activities.** Only ~90% of the highest marks on these activities will be counted toward the activity mark.

Tests (30%)

- There are two in-person, written tests this semester. Each is worth 15%. They will be written within class time.
- Makeup tests will be written during the exam period. Do not book travel home until the exam schedule is posted. No make-up tests will be given after the exam period.

Assignments (35%):

- There are four assignments you will complete (mostly) outside of class time.
- These assignments are meant for you to demonstrate your understanding of the topics covered in class (or another related topic). Further information will be provided soon.
- Students missing an assignment deadline should contact the instructor to arrange submission. The penalty for lateness is 20%/day. Once marks are released or assignments are returned, a mark of 0 will be recorded and submissions will no longer be accepted.

BrightSpace quizzes (5%)

- There will be frequent BrightSpace quizzes (close to weekly). Quizzes will primarily test understanding of material covered in class in the previous week but on a couple occasions may cover assigned readings that need to be completed prior to class.
- Quizzes will have ten attempts and have no time limit. **There will be no make-up for BS Quizzes.**

Readings (15%)

- There will be three articles to read outside of class time. You will need to submit the reading assessment before the class discussion. Further details will follow.

Conversion of numerical grades to final **letter grades**

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (0-49)
A- (80-84)	B- (70-72)	C- (55-59)	