

Course Syllabus

ERTH 3303: Stratigraphy

Dept. of Earth & Environmental Sciences

Fall 2026



Dalhousie University operates in the unceded territories of the Mi'kmaw, Wolastoqey, and Peskotomuhkati Peoples. These sovereign nations hold inherent rights as the original peoples of these lands, and we each carry collective obligations under the Peace and Friendship Treaties. Section 35 of the Constitution Act, 1982, recognizes and affirms Aboriginal and Treaty rights in Canada.

We recognize that African Nova Scotians are a distinct people whose histories, legacies, and contributions have enriched the part of Mi'kma'ki known as Nova Scotia for over 400 years.

Course Instructors

Instructor: Dr. Owen Sherwood: owen.sherwood@dal.ca; LSC Oceanography wing room 3613/3614. I will reply to emails during regular business hours (8am-5pm). I will also be available for in person meetings by appointment.

TA: TBA

Course Format

Lectures: In person, Mondays and Wednesdays 1:05 - 2:25pm, room LSC B9007 (Milligan Rm). Lectures will not be recorded.

Laboratories: In person, Mondays 2:35 – 5:25pm, room LSC B2030

Course Description

Stratigraphy is the backbone of the geological sciences; it brings together sedimentology, basin analysis, paleontology, petrology, and structural geology to reconstruct Earth history and its evolution. We survey the impact of sea level change, tectonics, and climate on sediment accumulation. We use outcrop observations, well logs, seismic and sequence stratigraphy to understand and correlate the sub-surface layers. Our studies focus on sedimentary basins across Canada and the World with practical work including field trips, a term paper, laboratory (including core description) & in-class exercises, class presentations and debates. Field trips examine basin evolution and stratigraphy and study evidence from outcrops to discern past paleoclimates and the history of sedimentation. Field trips include exercises measuring and recording outcrop data and completing comprehensive field reports.

Course Prerequisites

ERTH 2203 – Sediments and Sedimentary Rocks

Learning Objectives

Upon Successful completion of this course students should be able to:

1. Demonstrate in-depth knowledge and understanding of stratigraphic concepts and terminology through analysis, classification, and identification of strata and unconformities.
2. Gain hands-on experience on the application of stratigraphy through lab exercises & field work.
3. Assess rocks and interpret their meaning in the larger context of Earth's history and sedimentary basin evolution, e.g., Wilson Cycles, passive margins and rift basins, salt withdrawal basins.
4. Understand and explain how sedimentary successions relate to continental drift, climate, biological evolution, and major and singular events on Earth (i.e., mass extinctions, meteorite/ bolide impacts, oceanic anoxic events, igneous eruptions etc.).
5. Organize ideas, summarize what you have learned, and describe findings for academic writing & oral defense of ideas (labs, field reports, debates, presentations, and a term paper).

Course Materials

Suggested readings from both the mandatory and suggested materials will be provided on Brightspace.

Mandatory

- Stratigraphy Class Readings (labs, field excursions, & assignments), Available through Brightspace
- The Last Billion Years, Atlantic Geoscience Society (2022, 2nd Edition), Available from the Bookstore
- Nichols, G. (2023) [Sedimentology and Stratigraphy, 3rd Edition](#). Wiley, paperback. 4051-3592-4. Available from Dal Bookstore or other online booksellers.

Suggested

- Principles of Sedimentology and Stratigraphy, Sam Boggs Jr., 4th Edition (2006); 4th & 5th editions are available at the Killam Library.

Course Structure

Course Delivery

All lectures, labs, and field trips will be presented in person. Lectures will not be recorded, but the slides and handouts will be posted on Brightspace (typically before the lecture is presented). A number of guest lectures may be presented in person or through recorded media; students will be notified of when these lectures will occur and if the lectures will be presented in class or otherwise.

Field Trips

There are two major field trips planned, both of which will take place during the Monday lecture AND lab time slot **beginning at 1:05 and getting back to campus around sunset. These trips are mandatory**, excluding unavoidable circumstances. **If you are unable to participate in either of the field trips, please notify the professor as early as possible in order to organize an alternative.** More information will be given during class prior to the trip. These trips are taken with the assumption that everyone has at least some experience working in the field. You will be notified of specific potential hazards, as well as emergency contact information suited to the site we access. You will be provided with field safety forms detailing the risks and your acceptance of such - you will not be permitted to participate in any field trip prior to signing these forms. If you are unsure of anything regarding these field trips and your participation in them, please notify the professor and/or TA.

Other Course Requirements

All work will be done on a *professional level* of presentation in both laboratory and class. This course will help prepare you for your professional career and future professional accreditation (APGNS, APEGGA, etc.). As such, students are expected to maintain a high ethical and professional standard in their work and behavior.

Course Assessment

Component (number)	Weight (% of final grade)	Date*	Course Policy Note
In-class quizzes and exercises (10)	10%	Weekly	1
Lab/field assignments (10)	40%	Weekly	2,3,4,5,6,7
Midterm exam (1)	20%	TBA (1.5 hours)	8,9
Final exam (1)	30%	TBA (3 hours)	10,11

* A detailed class schedule will be posted on Brightspace

Course Policies

1. **Quizzes and exercises** will be held and will be due in class, unless otherwise noted.

2. **Lab assignments** will be due one week from the date of the lab session (i.e., the following Tuesday, by 2:35pm); late assignments will be **penalized 10% per day** and **will not be accepted if more than 5 days late**.
3. **Assignments resubmitted** after the deadline because “I submitted the wrong file” will be penalized as late. Please ensure that the assignment you submit is the one you intend to submit.
4. **Missed lab assignments:** The lowest of the 10 lab assignment marks will be dropped, so you can miss one assignment without penalty. Additional missed assignments will be graded as zero *unless accompanied by a Student Declaration of Absence for each of the missed assignment(s)*, in which case the lab components of the final course grade will be reweighted. Note that you are still responsible for learning the material, as it will be tested on the midterm and final exams.
5. **Collaboration with other students** on lab assignments is accepted and encouraged; however, students must submit *their own* assignments. Assignments with highly similar structure and answers may be submitted to the faculty academic integrity officer for review.
6. Submitting someone else’s writing or work as your own or without proper attribution is **plagiarism**. Suspected cases of plagiarism will be referred to the Academic Integrity Office. **Do NOT plagiarize.**
7. **Use of generative AI and large language models** (e.g., ChatGPT) is acceptable for augmenting your learning. However, **handing in AI-generated text as your own writing will be considered as plagiarism and may be referred to the Academic Integrity Office.**
8. **Midterm exam:** dates will be posted with the class schedule during the first week of class.
9. **Missed midterm** exam due to exceptional circumstances: final exam will count for 50% of final grade. *Notification must be given to instructor prior to start of exam.*
10. **Final Exam:** the exam is cumulative and incorporates lecture and lab material. The exam date is set by the Registrar and will occur during in December.
11. **Missed final exam** due to exceptional circumstances: reasonable accommodation (makeup exam or grade reweighting) will be granted. *Notification must be given to instructor prior to start of exam.*

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

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

Syllabus Appendix

Please see the following link for updated information on University Resources and Policies.

[Syllabus Appendix: Student Supports & University Statements, Policies, and Guidelines](#)