

ERTH 1002 – The Earth and Life Odyssey: A Journey through billions of years

Fall 2026

This course is aimed at giving you an overview of key concepts, processes, and nomenclature to understand everything from major building blocks of the Earth, important processes which shape our environment, and track these features through the history of the planet. This course will cover topics such as the fundamentals materials that make up the Earth, the origin and evolution of life, the formation of our planet and a long list of key events across its amazing 4.6 billion year journey! An important aspect of this course is to take away these key lessons and think about how they might apply to Earth's future.

Here is what my teaching team and I hope you will gain from this course (learning objectives):

1. The ability to identify and characterize fundamental Earth materials, including minerals, rocks, and fossils to understand the physical, chemical and biological processes by which they formed.
2. An understanding of key events in Earth's past as well as the processes which drove them.
3. A sense of how this history of the Earth was constructed and the key tools utilized to reveal this history.
4. Important processes that shape the world around you.

Course Delivery Information:

This course will have in person lectures and labs and exams. Course information will be posted on Brightspace. Details regarding field trips will be presented in lecture and made available on Brightspace.

Course Prerequisites:

None.

Course Evaluation:

The main components of the course are listed below with their respective weights. These components are further outlined below with additional details posted on Brightspace and discussed in lecture.

Labs	40%
Lab Exam	10%
Lecture Midterm Exam	20 %
Lecture Final Exam	20 %
Ottawa Geology Fieldtrip	5%
Canadian Museum of Nature Fieldtrip	5%

Grading Scale:

A+	90-100%	C	63-66%
A	85-89%	C-	60-62%
A-	80-84%	D+	57-59%
B+	77-79%	D	53-56%
B	73-76%	D-	50-52%
B-	70-72%	F	<50%
C+	67-69%		

Class Schedule

Lecture Time: MW 8:35-9:55 pm

Lecture Location: RB 2200

Lab Time: Check your schedule

Student Hours: W 10:00-11:00 am

Teaching Assistants: Information posted on Brightspace

Instructor

Geoff Pignotta

Office: HP 2102

Email: geoff.pignotta@carleton.ca

Lecture:

Lectures are in person only. They will not be streamed or recorded. Lecture slides will be posted to Brightspace *after* lecture. ***A tentative schedule of lecture topics and readings will be posted on Brightspace.***

Labs:

All aspects of the labs will be discussed during the first week of lab. While lecture content and lab content are complimentary in nature there is no overlap in the assessment. That is, you will not see material specific to labs on lecture exams and vice versa. The lab schedule can be found in your lab manual and will be posted on Brightspace.

Lab Exam:

Details regarding the lab exam (check lab schedule), will be introduced and discussed in your lab session. This will be a practical, hands on exam, that covers all material learned in the labs throughout the term.

Lecture Exams:

These are *not cumulative* exams and will be taken ***IN PERSON ONLY***. The lecture midterm exam will be held **OUTSIDE OF CLASS TIME**, with a date/time being determined by Scheduling and Examination Services. The *most likely date of the midterm exam will be in the evening of Thursday October 15 or Friday October 16, 2026 or Friday October 23, 2026* (note that the 23rd is the Friday before the fall break). Please do not plan any travel for fall break until the schedule is finalized. The midterm examination date/time and location will be relayed as soon as it has been scheduled. The final exam will be scheduled during the December exam period. Materials required for the lecture-based exams will be provided by the instructor.

Exams will consist primarily of multiple choice with some true/false and matching questions. Both midterm and final exams will be collaborative exams. Additional details regarding how collaborative exams work will be discussed in lecture, but the basic idea is that you will take the exam once individually, just like most tests/exams work with no talking, no notes, no cheating, etc. You will turn that exam in after the set time. You will then take the same exam a second time, however during the second attempt you may choose to collaborate with your classmates. You can speak to each other, use your course notes, the textbook, etc. The weighting of the exams will be 80% based on your individual effort and 20% on the collaborative effort.

Ottawa Geology Fieldtrip:

The mandatory Ottawa Geology Fieldtrip will be held on ***Saturday, October 17, 2026*** from 8:30 am to 4:00 pm. Additional details will be provided in lectures and posted on Brightspace.

Canadian Museum of Nature Fieldtrip:

An independent, self-directed fieldtrip to the Canadian Museum of Nature will also occur during the term. This will occur in early November. Additional details will be provided in lectures and posted on Brightspace.

Course Materials:***Required Laboratory Materials:***

- Laboratory Manual (~\$25)
- Mineral Identification Kit (~\$5)
- Hand Lens (~\$25)
- Grain Size Comparator Card (~\$6).

Optional Textbook:

- Knoll, A., *A Brief History of Earth: Four Billion Years in Eight Chapters*, Mariner Books, 2023 ISBN: 9780062853929

Course OpenText:

- Bentley et al., *Historical Geology*, LibreText, 2026,
[https://geo.libretexts.org/Bookshelves/Geology/Historical_Geology_\(Bentley_et_al.\)](https://geo.libretexts.org/Bookshelves/Geology/Historical_Geology_(Bentley_et_al.))

Course Behavior/Expectations:

- Outside of lectures and lab sessions, you are expected to spend ~5-6 hours per week on this course. This includes readings, studying, lab preparation, etc.
- I expect your behaviour to be respectful of all members of the course at all times.
- I will continually strive to create inclusive learning environments and would therefore appreciate your support and feedback.

The following values are fundamental to academic integrity and are adapted from the International Center for Academic Integrity*. In our course, we will seek to behave with these values in mind:

	As students, we will...	As a teaching team, we will...
Honesty	• Honestly demonstrate our knowledge and abilities on assignments and exams • Communicate openly without using deception, including citing appropriate sources	• Give you honest feedback on your demonstration of knowledge and abilities on assignments and exams • Communicate openly and honestly about the expectations and standards of the course through the syllabus, and with respect to assignments and exams
Responsibility	• Complete assignments on time and in full preparation for class • Show up to class on time, and be mentally/physically present • Participate fully and contribute to team learning and activities	• Give you timely feedback on your assignments and exams • Show up to class on time, and be mentally & physically present • Create relevant assessments and class activities
Respect	• Speak openly with one another, while respecting diverse viewpoints and perspectives • Provide sufficient space for others to voice their ideas	• Respect your perspectives even while we challenge you to think more deeply and critically • Help facilitate respectful exchange of ideas
Fairness	• Contribute fully and equally to collaborative work, so that we are not freeloading off others • Not seek unfair advantage over fellow students in the course	• Create fair assignments and exams, and grade them in a fair, and timely manner • Treat all students equitably
Trust	• Not engage in personal affairs while on class time • Be open and transparent about what we are doing in class • Not distribute course materials to others without authorization	• Be available to all students when we say we will be • Follow through on our promises • Not modify the expectations or standards without communicating with everyone in the course
Courage	• Say or do something when we see actions that undermine any of the above values • Accept a lower or failing grade or other consequences of upholding and protecting the above values	• Say or do something when we see actions that undermine any of the above values • Accept the consequences (e.g., lower teaching evaluations) of upholding and protecting the above values

* This class statement of values is adapted from Tricia Bertram Gallant, Ph.D.

Student Rights & Responsibilities:

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the [7 Rights and Responsibilities Policy](#) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Online Community Expectations for Social Platforms:

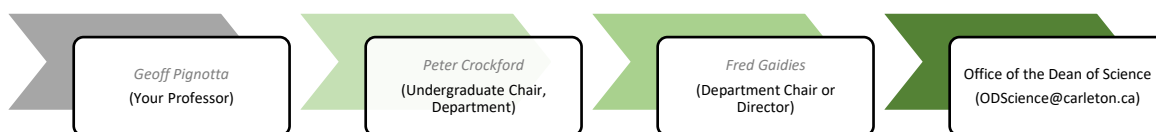
With the growing use of social platforms (e.g., Discord) on campuses, it is important to keep in mind that university codes of conduct still apply to the behaviours of students online. Please be considerate and respectful while engaging with peers and remember that we are all humans, and that your words matter. If any student witnesses or experiences harassment, I encourage you to reach out to me. Alternatively, you can contact Ombuds Services or Carleton Equity and Inclusive Communities.

Online communities can be highly beneficial to you and can help to facilitate learning within the course. I encourage people to ask questions, learn from one another, and have open discussions about class material. That said, any acts of academic misconduct (i.e., cheating) will not be tolerated and will result in serious consequences ranging from a grade reduction to expulsion (see academic integrity violations).

- Examples of appropriate peer-to-peer sharing/learning vary from course to course. In this course appropriate peer-to-peer sharing includes: identifying the proper formula to use, identifying an incorrect or missing step in a person's work, brainstorming potential reasons behind a concept, suggesting helpful sites and videos for learning a concept, posting your own work showing only a specific step or process for illustrative purposes (note: this is very different from posting your work and solution for others to simply copy).
- Examples of unacceptable peer-to-peer sharing: Posting or sharing the answers, indicating which answers are correct on assignments, sharing links to solutions, posting your own complete work for a question/solution.
- If a violation is found (e.g., plagiarism, copying another student's assignment etc.) this will be reported and administered through the Dean's office. Consequences can include a grade of F in the course, or even expulsion from your academic program.

Student Concerns:

If a concern arises regarding this course, **your first point of contact is me**: Email or drop in during student hours and I will do my best to address your concern. If I am unable to address your concern, the next points of contact are (in this order):



Note: You can also bring your concerns to [Ombuds services](#).

Mental Health:

If you are struggling, please do not hesitate to reach out. I am happy to listen, and/or direct you to resources that might help. In terms of class, if you need extra help or missed a lesson, don't stress! Email me and we will set a time to meet. I'll work with you, I promise. Remember that Carleton also offers an array of mental health and well-being resources, which can be found [here](#).

Land Acknowledgement:

Here at Carleton University, it is important that we acknowledge that the land on which we gather is the traditional and unceded territory of the Algonquin nation.

Academic Accommodations:

Conflicts with Course Requirements:

Students with conflicts for **ANY** course requirement (labs, exams, etc.) due to illness or otherwise **MUST** be reported to the instructor **PRIOR** to the due date when possible. If this is not possible contact regarding a deferral must be made within **24 hours** of the deadline. If you require accommodations for this course that are longer than a 5-day period, please email me to discuss how/whether accommodation needs could be met for this course.

The following statement is required by Carleton University:

“Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances, are outlined on the Academic Accommodations website (students.carleton.ca/course-outline).”

Academic Accommodations for Students with Disabilities:

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at <https://carleton.ca/pmc/> or 613-520-6608 or pmc@carleton.ca for a formal evaluation. Contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, contact and/or meet with your instructor directly as soon as possible to ensure accommodation arrangements are made. For more details, visit the Academic Accommodations website (students.carleton.ca/course-outline).

Pregnancy obligation:

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Academic Accommodations website (students.carleton.ca/course-outline).

Religious obligation:

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Academic Accommodations website (students.carleton.ca/course-outline).

Survivors of Sexual Violence:

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <http://carleton.ca/sexual-violence-support>. For more details, visit the Academic Accommodations website (students.carleton.ca/course-outline).

Accommodation for Student Activities:

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible

after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf> . For more details, visit the Academic Accommodations website (students.carleton.ca/course-outline).

Academic Consideration for Medical and Other Extenuating Circumstances:

Due to medical and other extenuating circumstances, students may occasionally be unable to fulfil the academic requirements of their course(s) in a timely manner. The University supports the academic development of students and aims to provide a fair environment for students to succeed academically. Medical and/or other extenuating circumstances are circumstances that are beyond a student's control, have a significant impact on the student's capacity to meet their academic obligations, and could not have reasonably been prevented. Students may request Academic Consideration for Coursework or Other Academic Deliverable. For further information please review the [Procedure for Academic Consideration](#) and the [FAQ](#) page. For more details, visit the Academic Accommodations website (students.carleton.ca/course-outline).

Assistance for Students:

- Academic and Career Development Services: <http://carleton.ca/sacds/>
- Writing Services: <http://www.carleton.ca/csas/writing-services/>
- Peer Assisted Study Sessions (PASS): <https://carleton.ca/csas/group-support/pass/>
- Math Tutorial Centre: <https://carleton.ca/math/math-tutorial-centre/>
- Science Student Success Centre: <https://sssc.carleton.ca/>

Plagiarism:

Plagiarism is presenting, whether intentionally or not, the ideas, expression of ideas, or work of others as one's own. Plagiarism includes reproducing or paraphrasing portions of someone else's published or unpublished material, regardless of the source, and presenting these as one's own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, art works, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software (including AI/LLM), and material on the internet. This includes copying of material from websites or other publications that is incorporated into labs, assignments, reports, or other submissions for grading. Borrowing someone else's answers, unauthorized possession of tests or answers to tests, or possession of material designed in answering exam questions, are all subject to university policy regarding instructional offences.

For this course (and all other courses at Carleton), it is extremely important to understand that you cannot copy and paste material from websites or publications into any type of assignment whether submitted in person or via Brightspace. This is plagiarism, and it is easy to spot during grading of assignments. When formulating an answer to a question, be sure to reword the material from websites or publications into your own words. Identification of plagiarised material in an assignment answer will result in an automatic zero points for that question. Repeated instances of plagiarism will result in harsher consequences that may include zero on entire an entire assignment, reduction of course final grade, withdrawal from course, letter of reprimand from the Dean of the Faculty of Science.

I encourage students to work together and have engaging discussions. **HOWEVER**, each student must submit answers to labs/assignments/reflections in their own words, not the words used by another student that you are working with. If the answers submitted by one student for an assignment are identical to those submitted by another student, *both students will be assigned a grade of zero for the activity*.

Academic misconduct, in whatever form, is destructive to the values of the university, and risks harming the university's reputation as place of learning and innovation. Furthermore, it is unfair and discouraging to those students who pursue their studies honestly. Additional details regarding the Carleton University Academic Integrity policy can be found here: <http://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy.pdf> . In particular, you need to be aware of the Faculty of Science policies on academic misconduct as well. The linked website outlines this policy and highlights consequences associated with acts of misconduct: <https://science.carleton.ca/students/academic-integrity/>

Generative AI (GenAI) Use in this course:

Students may use GenAI tools for basic word processing and formatting functions, including:

- Grammar and spell checking (e.g., Grammarly, Microsoft Word Editor)
- Basic formatting and design suggestions (e.g., Microsoft Word's formatting tools)

It is not necessary to document the use of GenAI for the permitted purposes listed above. If you have questions about a specific use of GenAI that isn't listed above, please consult your instructor. The use of GenAI in any other way to complete labs/assignments/reflections will be considered a violation of the academic integrity policy. This policy ensures that student voices and ideas are prioritized and authentically represented, maintaining the integrity of the work produced by students while allowing basic support to enhance clarity, correctness, layout, and flow of ideas. The goal of adopting a limited use of GenAI is to help students develop foundational skills in writing and critical thinking by practicing substantive content creation without the support of GenAI as well as to develop skills to assess whether the results of GenAI in other activities is accurate or not.

TLDR: Do your own work and be honest about it!