



Department of Earth Sciences  
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## Introduction to Oceanography (ERTH2403) (Winter-2024)

Dr. Hafida El Bilali

### Professor:

Dr. Hafida El Bilali

Dept. Earth Sciences,

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**Office hours:** Request appointment for In-Person or via Zoom, please email the professor to set an appointment.

**Zoom link:** <https://carleton-ca.zoom.us/j/97088143611>

### Teaching Assistants (TAs):

To be announced by the first lecture.

TAs office hours (Request appointment)

### In-person Course Delivery:

Fridays: 11:35 am - 2:25 pm, **Steacie Building 103** (Jan. 12, 2024 – Apr. 5, 2024)

The course material will be provided **In-person:** Lecture slides will be posted in advance on Brightspace.

Invited speakers will occasionally come during the course hours to discuss the topic presented and debate with the students. Speakers will be **announced by email** prior their presentations.

*Course outline, lecture notes, announcements, etc. will be available on Brightspace.*

*Quizzes will be administered online on Brightspace.*

### Course Pre-requisites:

ERTH2403 is a science credit for B.Sc., B.A, B.Eng. and other students and a required credit for some.

Prerequisites: none, may be taken by first year students. As the course is a second-year science credit without laboratories, an understanding of significant amounts of information is required.

## Course Objectives:

Over 70% of our planet is covered by oceans and an understanding of the interactions of its various systems is crucial to that of the global environment.

This course consists of an environmental approach to understanding the oceans, introducing the physical and biological aspects of oceanography, marine resources and marine pollution. Underlying this general knowledge will be thoughts and discussions through relevant case studies and legislations on the looming impacts of marine pollution and climate change on marine ecosystems, marine habitats, marine communities and public health.

## Learning Outcome:

By the end of this course, students will be able to:

- Identify and describe the characteristics of marine waters, marine sediments, and marine communities.
- Identify and describe the importance of biogeochemical cycles and the impact of their perturbation on the environment and climate changes.
- Identify marine communities and their potential connection through food webs and chains.
- Identify and describe marine resources and marine pollution.
- Analyse the impact of marine pollution on climate change, marine environment, marine communities, and public health.
- Link the current environmental policies and regulations to the looming impact of climate change and marine pollution.
- Evaluate and defend their response to a range of environment and climate change issues.

## Evaluation:

- |  |            |
|--|------------|
| • <b>Online Quizzes</b> (on Brightspace)<br>5 Quizzes in total, (2% each)<br>Submit each quiz before the announced deadline. | <b>10%</b> |
| • <b>Midterm</b><br><i>TBD</i>   | <b>35%</b> |
| • <b>Final Exam</b><br><i>TBD</i>  | <b>55%</b> |

**The EARTH2403 Midterm and Final Exams will be held IN-PERSON ONLY and will be closed-book exams.** The midterm exam will be held OUTSIDE OF CLASS TIME, with a date/time being determined by Scheduling and Examination Services. The midterm examination date/time and location will be relayed as soon as has been scheduled. The final exam will be scheduled during the April exam period.

*If you miss the midterm exam due to any valid reason* (religious, health, personal difficulties, others), you must contact the professor within two days of the missed midterm exam and provide documentation as to why you missed the exam. Only one deferred midterm exam date and time will be offered.

If you miss the Final exam, you may apply for a deferred final exam at the registrar's office (documentation is needed). Please follow the instructions on the Registrar's website for Deferred Exams which can be found here: <https://carleton.ca/registrar/deferral/>. In all cases, please contact the professor first by email.

**Suggested Textbook:**

- Garrison, Tom: Oceanography, an Invitation to Marine Science. 10<sup>th</sup> ed. (9<sup>th</sup> ed. is acceptable).
- New and used copies are available at the Carleton Bookstore as well as at Haven Books.
- The bookstore website is open: <https://www.bkstr.com/carletonstore>.
- Students may contact the bookstore textbook desk for any information or request at 613-520-2600 ext. 8115.

## ERTH2403 COURSE OUTLINE Winter 2024 (Subject to change)

**Note\*\*** You are responsible for **all** lecture material, some of which may not be covered in the textbook. You are not responsible for the entire textbook, only for sections related to lecture topics. Exam questions are based on lectures and related text material.

Week	Garrison 8 <sup>th</sup> & 9 <sup>th</sup> editions.	Lecture Topic	Quizzes
Jan.12, 2024	Ch.1	Introduction	Origin
Jan.19, 2024	Ch. 2	History of Marine Sciences	
Jan.26, 2024	Ch. 3	Plate Tectonics	<b>Quiz #1 Friday Jan.26.24</b>
Feb.2, 2024	Ch. 4,5	Ocean Basins	Ocean Sediments
Feb.9, 2024	Ch. 6,7	Water and Ocean Structure	Ocean Chemistry
Feb. 16, 2024	Ch.8,9	Atmospheric Circulation	Ocean Circulation
<b>ERTH2403 Midterm Exam</b> <i>"The Midterm is scheduled for Week 6 (tentatively February 16 or 17). As soon as the date is confirmed by Scheduling and Examination Services it will be communicated to you."</i>			
<b>February 19-23, 2024 WINTER BREAK</b>			
Mar. 1, 2024	Ch. 10, 11	Waves	Tides
Mar. 8, 2024	Ch. 12, 13	Coasts	Ocean Life
Mar.15, 2024	Ch. 14, 15	Primary Producers	Marine Animals
Mar.22, 2024	Ch. 16, 17	Marine Communities	Marine Resources
<b>March 29, Easter</b>			
Apr.5, 2024	Ch. 17, 18	Marine Pollution	Environmental Concerns
		Final Exam Reviews	<b>Quiz #5 Friday Apr.5-24</b>
<b>ERTH2403 FINAL EXAM: (55%) - Scheduled during April, 2024 Exam Period</b> Covers lectures from March 1, 2024 to end of term			

## **ACADEMIC INTEGRITY**

### ***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. Borrowing someone else's answers, unauthorized possession of tests or answers to tests, or possession of material designed for 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 the assignment answer boxes on Brightspace. This is plagiarism, and it is easy to spot during grading assignments. 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.

Academic dishonesty, in whatever form, is destructive to the values of the university, and risks harming the university's reputation as a 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:** <http://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy.pdf>

## **REQUESTS FOR ACADEMIC ACCOMMODATION**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

### ***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 Equity Services website: [carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

### ***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 Equity Services website: [carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

### ***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 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or 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, meet with your instructor as soon as possible to ensure accommodation arrangements are made.

[carleton.ca/pmc](http://carleton.ca/pmc)

### ***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 its 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: [carleton.ca/sexual-violence-support](https://carleton.ca/sexual-violence-support)

### ***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 information on academic accommodation, please contact the departmental administrator or visit: [students.carleton.ca/course-outline](https://students.carleton.ca/course-outline)

### **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. Remember that Carleton also offers an array of mental health and well-being resources, which can be found here:

<https://wellness.carleton.ca/>

### **INCLUSIVE TEACHING STATEMENT:**

I am committed to fostering an environment for learning that is inclusive for everyone regardless of gender identity, gender expression, sex, sexual orientation, race, ethnicity, ability, age, class, etc. It is my hope that our class will support diversity of experience, thought, and perspective.

### **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.

**Information in this syllabus and the course outline are subject to change; watch for postings on Brightspace.**