

GEOL 1033 COIN2: General Oceanography

[Dashboard](#) / [Courses](#) / [GEOL 1033 COIN2 Home](#) / [GEOL 1033 - General Oceanography](#) / [Syllabus](#)

Syllabus

Course Overview

"My first view - a panorama of brilliant deep blue ocean, shot with shades of green and gray and white - was of atolls and clouds..." Charles Walker, NASA Payload Specialist, 1984-85

When viewed from space, the Earth's surface appears to be predominantly covered by water. In fact, the world's ocean covers 71% of the Earth's surface and contains 97% of the planet's water. An estimated 50 to 80% (UNESCO) of all life on Earth is found under the ocean surface. Not only does the ocean contain almost all of the planet's water and host at least half of all life, but it also plays an integral role in many of the Earth's systems, including climate and weather. This course examines and explores this vast, under-explored part of our planet, focusing on the physical, chemical, and biological features.

Instructor

Christa Pufahl

First off, I would like to welcome you to the course (General Oceanography - Geol 1033) and introduce myself. My name is Christa Pufahl and I am an instructor in the Department of Earth and Environmental Science. I'm trained as a geologist, more specifically, as a sedimentologist, which is a term for someone who studies sediments (sand, silt, clay), the structures that sediments form, and the environments that sediments are deposited in. It is a bit like being a detective, I go around and gather clues (by looking at rocks and rock outcrops) and then take these clues, put them altogether, and develop a 'history' of that area. By looking at sedimentary structures in an actual rock, I can tell if the sediment (sand) forming these structures was deposited by a river, ocean, glacier or wind. There's a lot more to it, and if you have questions, feel free to ask me.

Studying the ocean is an important component to sedimentology. Sediments are created in the ocean, sediments are transported away from the ocean, and sediments are transported back into the ocean where they are deposited. Sediments (in many shapes, forms and composition) form beaches and other coastal features, and sediments can be found in the deepest parts of the ocean. Some marine organisms also play a vital role in the creation of sediments.

Feel free to contact me by e-mail at any time if you have any questions, comments or concerns. I may not get back to you immediately, but I will get back to you.

I hope that you enjoy the course and learn at least a little bit about the ocean. If you are ever unfamiliar with or having difficulty with a term or concept don't hesitate to get in touch with me.

Contact Information:

Department of Earth and Environmental Science

12 University Avenue
Acadia University
Wolfville, Nova Scotia
CANADA B4P 2R6

E-mail: christa.pufahl@acadiau.ca

Course Materials

Text: *Essentials of Oceanography* by Alan P. Trujillo and Harold V. Thurman; the 13th edition is recommended, earlier editions may also be used. Readings in module are listed for the 13th and 12th editions.

See the [student handbook](#) for ordering information.

Material in this course will be presented by PowerPoint lectures. Specific topics may be supplemented with information from other websites. Readings are given for every module, and self-administered quizzes are found at the end of every module. Additionally, five (5) assignments further comprehension of the material present in this course (see below for description).

Evaluation

Marks in this course are broken down in the following manner.

Quizzes (12)	10%
Assignments (5, each worth 12%)	60%
Final Exam	30%

Quizzes are found at the end of all 12 modules. They are self-administered and are an opportunity to make sure that you understand the material. The quizzes are all multiple choice.

Assignments are found at the end of: Module 3 (Assignment 1), Module 6 (Assignment 2), Module 9 (Assignment 3), and Module 12 (Assignments 4 and 5). Assignments 4 and 5 can be worked on prior to Module 12. Assignments are available as a Word file and can be answered directly in the Word document. *Please remember to include your name and/or student number, and assignment number on the assignment and keep a copy in the event the original is lost. An important thing to include on your assignment and in its file name is your name. I can sometimes download Assignment 3 from 3 different students on the same day, if there are no names on the assignment or in the file name, and all are called 'Assignment 3' it can be tricky to figure out which assignment belongs to which student.*

The final exam consists of 150 questions. 100 are multiple choice questions, 40 are T/F questions. The final is weighted towards material that is covered in the PowerPoint lectures, although some questions related to the readings may be included. If you have any other questions about the final, don't hesitate to contact the instructor.

Exam

Please contact your instructor when ready to write the final exam.

Student Handbook

You are responsible for becoming familiar with the contents of the Student Handbook. It contains important information about scheduling examinations (if applicable), applying for extensions, withdrawing from your course, ordering books, and computer and library services available to you. If you have questions about the policies outlined in the handbook (<https://courseware.acadiau.ca/openacadia/studenthandbook.html>), contact:

Open Acadia
21 University Avenue (Rhodes Hall)
Wolfville, NS B4P 2R6
Phone: 1-800-565-6568
Fax: 1-902-585-1068
Email: openacadia@acadiau.ca

Academic Integrity

Academic integrity demands responsible use of the work of other scholars. It is compromised by academic dishonesty such as cheating and plagiarism. A student who is uncertain whether or not a course of action might constitute cheating or plagiarism should seek in advance the advice of the instructor involved.

- Cheating is copying or the use of unauthorized aids or the intentional falsification or invention of information in any academic exercise
- Plagiarism is the act of presenting the ideas or words of another as one's own. Students are required to acknowledge and document the sources of ideas that they use in their written work.
- Self-plagiarism is also a form of plagiarism. It is the presentation of the same work in more than one course without the permission of the instructors involved.
- A student who knowingly helps another to commit an act of academic dishonesty is equally guilty.
- Penalties are levied in relation to the degree of the relevant infraction. They range from requiring the student to re-do the piece of work, through failure on that piece of work, to failure in the course, and to dismissal from the university.

Course Schedule

You have 6 months to complete this course. I often tell students to work at a pace with the goal of completing a module (12 modules) every week to 10 days. You may set your own schedule, but if you intend to complete the course in less than 3 months, please give me a heads up.

Try not leave all of your course work until a few weeks before your completion date. Although I will make every effort to accommodate your schedule within reason, I need time to grade assignments and mark exams.

Module Descriptions

<u>Module 1</u> - Introduction and History	<ul style="list-style-type: none">• introduction to the ocean, concept of one world ocean• brief history of oceanography• what is oceanography
<u>Module 2</u> - Origins of the Solar System and the Earth; Plate Tectonics	<ul style="list-style-type: none">• the Big Bang and birth of the Solar System• birth of the Earth and early ocean• Earth's internal structure and plate tectonics
<u>Module 3</u> - Ocean Basins and Sediments	<ul style="list-style-type: none">• if you drained out all the water, what would the ocean basin look like?• nature of ocean basins and ocean floor topography• regions of the ocean floor• origin, classification, and distribution of marine sediments
<u>Module 4</u> - The Nature of Seawater	<ul style="list-style-type: none">• why is sea water salty?• properties of sea water, ocean chemistry, and structure
<u>Module 5</u> - Atmospheric Circulation	<ul style="list-style-type: none">• atmosphere composition and structure• Coriolis effect• interaction between atmosphere and ocean; El Nino• winds and storms
<u>Module 6</u> - Oceanic Circulation	<ul style="list-style-type: none">• ocean circulation patterns• surface currents• deep water currents• how weather and climate are affected by oceanic circulation
<u>Module 7</u> - Waves	<ul style="list-style-type: none">• what is a wave• wave creation and propagation• classification and behaviour of waves• tsunami

Module 1 - Introduction and History

Module 8 - Tides

Module 9 - At The Beach (Coastlines)

Module 10 - Ocean Life I

Module 11 - Ocean Life II

Module 12 - Ocean Resources; The Ocean and the Environment

- introduction to the ocean, concept of one world ocean
- brief history of oceanography
- what is oceanography

- what is a tide and the different types of tides
- generation of tides, what roles does the Sun, Moon and Earth play in creating tides
- tidal processes
- tides in Nova Scotia

- a close look at where the land and ocean meet
- coastal classification
- coastal processes - how the coast is reshaped
- erosional and depositional features
- sea-level changes
- estuaries and atolls

- introduction to biological oceanography
- classification of marine life
- marine productivity
- phytoplankton and zooplankton
- marine plants

- marine invertebrates - different phylums
- marine vertebrates
- characteristics of marine mammals
- marine communities

- renewable and non-renewable marine resources
- sustainability of marine resources
- environmental concerns

Recommended Readings

A list of recommended readings can be found on Moodle.

[Click here to return to the Module](#)

Last modified: Wednesday, 10 April 2024, 3:41 PM

[◀ Course Introduction](#)

Jump to...

[News forum ▶](#)

[i Help and documentation](#)

You are logged in as Chris Edwards (Log out)
GEOL 1033 COIN2 Home

Get the mobile app