

COURSE SYLLABUS



COURSE TITLE: GEOS-110: Earth-Ocean-Atmosphere System

CLASS SECTION: 001

TERM: Fall 2023

COURSE CREDITS:4

DELIVERY METHOD(S): Face-to-face

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.

INSTRUCTOR DETAILS

NAME: Dr. Leanne Pyle

EMAIL: PyleL@camosun.bc.ca

OFFICE: F344D

HOURS: Monday & Wednesday 11:30-12:20

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

CALENDAR DESCRIPTION

This course introduces the interrelationships of the Earth-Ocean-Atmosphere system. Discussion of the origin of this system leads to consideration of physical and chemical properties and processes, and the distribution of chemical components and energy through the system. Short and long-term changes are investigated.

PREREQUISITE(S):

One of:

- C in English 12
- C in Camosun Alternative

CO-REQUISITE(S):

Not Applicable

EXCLUSION(S):

Not Applicable

COURSE LEARNING OUTCOMES / OBJECTIVES

Upon completion of this course a student will be able to:

1. Describe and interpret short-term and long-term Geologic, Oceanic and Atmospheric processes and their interactions.
2. Make hypothesis-based scientific observations, analyze and interpret quantitative data with reference to Geologic, Oceanic and Atmospheric processes.
3. Comment on orbital motion and wave motion and apply standard equations to compute wave velocity.
4. Use simple laboratory equipment to study and measure wave velocity.
5. Utilize standard tide and current tables and software.
6. Interpret relationships among temperature, salinity and density of seawater, and how these properties vary over time.
7. Describe ocean current transport and be able to assess the role of currents in global heat transfer.
8. Describe relationships among surface ocean currents and atmospheric circulation.
9. Analyze grain size of sediment samples and interpret current environment and sedimentary environment of deposition from sediment data.
10. Determine salinity of water samples and the relationship of salinity to temperature, density and dissolved gases.
11. Comment on the energy budget of the atmosphere, and its short-term and long-term variability.
12. Comment on the chemical evolution of the atmosphere.
13. Describe coastal processes at the land-sea interface.
14. Relate ocean-floor topography and ocean depth data to processes of sea-floor spreading and the age of ocean basins.

REQUIRED MATERIALS & RECOMMENDED PREPARATION/INFORMATION

Earle, S. Environmental Geology: <https://environmental-geology-dev.pressbooks.tru.ca/>

Fundamentals of Physical Geography (2nd edition): Chapters 7 (Atmosphere) and 9 (Biosphere)

<http://www.physicalgeography.net/fundamentals/chapter7.html>

<http://www.physicalgeography.net/fundamentals/chapter9.html>

Introduction to Oceanography by Paul Webb: <https://rwu.pressbooks.pub/webboceanography/>

Laptop for in-class discussions and with Excel for some laboratory activities

COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION/ACTIVITY/ EVALUATION

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

WEEK	ACTIVITY or TOPIC	READINGS & ACTIVITY
Sept. 4	Global Change and Earth Systems	Earle Chapter 1 No Lab this week
Sept. 11	Geosphere and Plate Tectonics Geology of the Oceans	Earle Chapter 2 Webb Chapters 3 & 4 Lab 1 - Geosphere
Sept. 18	Hydrosphere & Ocean System Coastal Processes & Sea Level	Webb Chapters 5, 6 & 13 Field Trip 1
Sept. 25	Origin of Life	Fundamentals Chapter 7 Field Trip 2 **make sediment collections for Lab 2
Oct. 2	Biogeochemical Cycles	Fundamentals Chapter 9 Lab 2 - Coastal Processes and Sediments
Oct. 9	Biosphere and Biodiversity	Fundamentals Chapter 9 Field Trip 3 - Ocean Networks Canada
Oct. 16	Biosphere and Biodiversity Term Project Topic due via email	Fundamentals Chapter 9 Lab 3 – Physical Oceanography
Oct. 23	Carbon Cycle and Humans Earth Science Research	Fundamentals Chapter 9 Lab 4 - Ocean Sediments & Biological Oceanography
Oct. 30	Earth's Energy Balance Quiz #1	Fundamentals Chapter 7 Lab 5 – Earth's Energy and Heat
Nov. 6	Atmospheric System	Webb Chapter 8.1 Lab 6 - Earth's Atmosphere and Weather
Nov. 13	Cryosphere and Glaciations	Earle Chapter 4 Webb Chapter 14 Lab 7 - Climate Change and Sea Level
Nov. 20	Holocene Climate Change	Earle Chapter 3 Written Report & Presentations Due Nov. 20 (in separate Assignment Dropboxes) During Lab Period, Student Presentations
Nov. 27	Climate Change	Earle Chapter 15 Webb Chapter 8.5 During Lab Period, Student Presentations
Dec. 4	Course wrap-up/summary	

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced notice is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Lab and field trip exercises	25%
Participation - Discussion Forums in D2L & Library Tutorial	10%
Quiz	10%
Term Project and Discussion Presentation	20%
Final exam	35%
TOTAL	100%

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information. <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

- a. Lectures: **Monday & Thursday 10:00 – 11:20 AM in Fisher 266.**
- b. Lab: **Tuesday, 9:30-12:20 AM in Fisher 300.**
- c. Lab attendance is mandatory, you must pass the lab to pass the course. Labs are done as teams for help with measurements, discussion of concepts and interpretations. Write your partners' names on each assignment.
- d. Three labs will be based on field trips. These integrate your course learning with field observations and give you practice relating the theory and terminology to real world observations and processes. Signed waivers are required to participate. An assignment done on-site during the field trip will be worth equal credit of one lab.

Students must write each test/quiz during the time scheduled in the course outline, and submit required assignments by the specified deadline. On a case-by-case basis, and at the instructor's discretion, a student experiencing a personal emergency or an uncontrollable extenuating circumstance (as outlined in the Academic Concessions Policy) may be offered a concession for missed tests/quizzes/reports, if possible and appropriate.

Assignments handed in after the posted deadline will incur a deduction of 10% per day (or partial day) that the assignment is late. If there are extenuating circumstances, it is the learner's responsibility to inform the instructor **prior** to the posted deadline that the assignment may be submitted late. It is at the instructor's discretion if any relaxation of the guideline will be made in these circumstances.

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and **respecting expectations concerning attendance, assignments, deadlines, and appointments.**

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	http://camosun.ca/advising
Accessible Learning	http://camosun.ca/accessible-learning
Counselling	http://camosun.ca/counselling
Career Services	http://camosun.ca/coop
Financial Aid and Awards	http://camosun.ca/financialaid
Help Centres (Math/English/Science)	http://camosun.ca/help-centres
Indigenous Student Support	http://camosun.ca/indigenous
International Student Support	http://camosun.ca/international/
Learning Skills	http://camosun.ca/learningskills
Library	http://camosun.ca/services/library/
Office of Student Support	http://camosun.ca/oss
Ombudsperson	http://camosun.ca/ombuds
Registration	http://camosun.ca/registration
Technology Support	http://camosun.ca/its
Writing Centre	http://camosun.ca/writing-centre

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started: <http://camosun.ca/services/accessible-learning/>

Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Medical/Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them

understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and camosun.ca/sexual-violence. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-3703841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

Changes to this syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.