



**University
of Victoria**

Earth & Ocean Sciences 408 CRN 11437
UNIVERSITY OF VICTORIA
3-0-0 (1.5 UNITS)
FALL TERM 2025

We acknowledge and respect the Ləkʷəŋən (Songhees and Esquimalt) Peoples on whose territory the university stands, and the Ləkʷəŋən and WSÁNEĆ Peoples whose historical relationships with the land continue to this day.

COURSE OUTLINE

EOS408: Marine Geology

Lectures: M/Th 10:00 to 11:20 PM in HSD A264

PREREQUISITES: EOS201, 1 of EOS310 or EOS316

COREQUISITES: NONE

CONTACT INFO

Instructor(s):	Blake Dyer
Email:	blakedyer@uvic.ca
Office:	BWC A419
Office Hours:	by appointment
Teaching Assistant(s):	none

COURSE DESCRIPTION

In this course, we will explore geological processes in a wide range of oceanic environments: mid-ocean ridges, mid-plate volcanoes and hot spots, coastlines, continental margins and abyssal plains. The lectures, readings, and your writing will cover seminal scientific works and recent journal publications.

This course is a science writing course. Clear writing is one of the most important skills in science as it clarifies our own understanding of a topic and provides a pathway to communicate our ideas to others. You will be required to submit writing and revisions to your writing almost every week. Your final grade in this course will largely reflect your ability to demonstrate your understanding of marine geology through your writing.

LEARNING OUTCOMES

Below is a list of some specific knowledge and skills you can expect to gain through this course. This term you will:

- learn how to use the surface of the ocean to map the height and position of seamounts
- understand how the plume theory is necessary to explain many seafloor features that can not be explained by simple plate tectonics
- interpret sea-level histories from coastal sedimentary outcrops from the last interglacial period
- be able to predict the viscous and elastic consequences of ice-loading during glacial-interglacial cycles
- become a more effective science communicator
- learn through writing workshops how to improve the clarity and precision of your writing

COURSE MATERIALS

There is no required textbook. Readings will be made available through the course website.

BRIGHTSPACE

You are expected to routinely check the Brightspace site. All announcements, materials, readings, and schedule changes will be posted to brightspace. Lecture slides and schedule changes will also be posted [on the Marine Geology course webpage](#).

EVALUATION

This course will use the [official UVic standard grading scale](#). Your final grade will be determined by your scores on in-class presentations, contributions to workshops, and writing submissions. There is no final exam.

Participation and contributions to workshops	10%
Pre-workshop writings	20%
Final paper (Due Dec 03)	50%
Exam (in class Nov 20)	10%
In class presentation	10%

EVALUATION: FINAL PAPER

Over the course of this term you will be writing (and rewriting) a short scientific paper on a topic of your choosing within the scope of marine geology. The paper should be around **2500 words** and must have at least **two** original figures that you have created by combining data or concepts from your background research. From the first day of class, you have **just 13** days to write the first draft of this paper, and you will get very little guidance on this first draft. However, we will workshop your writing together in class throughout the term. The final paper is a **required** component of the course. Failure to submit a final paper will result in a 'N' grade in the course. Additionally, your post-workshop revisions will be submitted almost every week. If your submission history at the end of the term can not clearly connect your initial submission to your final paper, the final paper will be treated as a zero (resulting in a 'N' grade in the course).

EVALUATION: PARTICIPATION AND CONTRIBUTION TO WORKSHOPS

This course is roughly half workshop and half lecture, and it is especially important for everyone to participate and be heard. You should be honest with your classmates and with the instructor, respectful toward

everyone's thoughts and opinions, and compassionate toward your subject matter and the views of your peers. A pattern of showing up to workshops unprepared will result in a zero for this aspect of your final grade. More importantly, the workshops are designed to help you with your writing, so failure to take advantage of the workshops will make it very tough to score high on your final writing submission.

The workshops have two components: a pre-workshop submission and the in class workshop activity. Typically, before each workshop, you will be required to submit revisions to your writing based on the workshop the previous week. Along with the revisions, you will submit a short *post-workshop reflection* summarizing the changes you have made and why (short in this case is most likely a paragraph or two). Your pre-workshop revisions will be used in the following workshop, so it is really important that you stay on schedule. To get the most out of this course, you should:

- be on time and well-prepared for lectures and workshops.
- participate consistently and democratically in class, both by listening attentively and contributing thoughtful comments and questions that build on classmates' responses.
- speak not only to the professor but to other students; work energetically in small group or pair activities; overall, improve the day-to-day quality of the course for everyone.
- write *post-workshop reflections* that thoughtfully and critically examine your own writing.
- submit thoughtful and complete pre-workshop drafts.

EVALUATION: PRESENTATION

In the last few weeks of the term, you will give a 12 minute presentation for the class on the topic of your review paper.

COURSE POLICIES

If you need academic accommodation to address barriers to your education, please register with the Centre for Accessible Learning (CAL) as soon as possible. I work with CAL to create a learning environment that is equitable, inclusive, and usable for all.

POLICY: CLASS CONDUCT

Please follow the latest provincial and University guidelines with regard to COVID-19 protocols: [UVic COVID-19 information](#) and [what to do if you are ill](#). No materials from the course may be redistributed without written permission from the instructors (e.g., no posting of materials to sharing websites). If we are required to meet on Zoom, you should remain muted during lecture unless you are speaking to the class or instructors.

POLICY: LATE/MISSED ASSIGNMENTS OR EXAMINATIONS

Assignment due dates are considered **hard deadlines**, except under extra-ordinary circumstances. If you have a known conflict that will make completing an assignment impossible, please notify the instructors well in advance of the due date.

POLICY: ATTENDANCE

You are expected to be present and active in the lectures and workshops. Missing workshops without communication and justification to the instructor will result in a lower final workshop score (refer to the rubric on Brightspace).

POLICY: ACADEMIC INTEGRITY

It is every student's responsibility to be aware of the university's [policies on academic integrity](#), including policies on cheating, plagiarism, unauthorized use of an editor, multiple submission, and aiding others to cheat.

If you have any questions or doubts, you can ask your instructor or the [Centre for Academic Communication](#).

POLICY: USE OF AI

In this course you are not authorized to use any form of generative AI except when specifically mentioned by the instructor. On some of the later workshops, generative AI may be allowed, and prior to these workshops, the instructor will describe the specific way in which generative AI can be used. When used, your prompts and the generative AI responses must be included as an appendix to your submissions. The specific use cases for generative will not be required, and you can successfully complete all course components without the use of any generative AI.

COURSE FEEDBACK

I value your feedback on this course. Towards the end of term, as in all other courses at UVic, you will have the opportunity to complete an anonymous survey regarding your learning experience (SEL). **The survey provides vital feedback** to me regarding the course and my teaching, and helps improve the overall program for students in the future. The survey is accessed online and can be done on your laptop, tablet, or mobile device. I will remind you and provide you with more detailed information nearer the time but please be thinking about this important activity during the course.

COURSE WEEKLY CALENDAR

This calendar will get updated throughout the term (last updated on: **October 1, 2025**). Exam and presentation dates are set, but lecture and workshop topics are subject to change.

Week	Date	Topic
1	Th Sep 4	Lecture 1 Course introduction
2	M Sep 8	Lecture 2 Sea-floor depth and heat flow
	W Sep 10	Assignment due Writing topic
	Th Sep 11	Workshop 1 Key papers discussion
3	M Sep 15	Workshop 1 (continued) Key papers discussion
	W Sep 17	Assignment due Draft progress
	Th Sep 18	Lecture 3 Sea-floor depth and heat flow
4	M Sep 22	Lecture 4 Sea-floor depth and heat flow
	W Sep 24	Assignment due First draft
	Th Sep 25	Workshop 2 Fundamentals
5	M Sep 29	Workshop 2 (continued) Fundamentals
	Th Oct 2	Lecture 5 Hot spots and other seamounts
6	M Oct 6	Lecture 6 Hot spots and other seamounts
	W Oct 8	Assignment due Workshop 2 revisions
	Th Oct 9	Workshop 3 Openings and structure
7	M Oct 13 <i>Thanksgiving Day</i>
	Th Oct 16 <i>Cancelled: Blake out of town</i>
8	M Oct 20	Lecture 7 Coastal geology exercise
	W Oct 22	Assignment due Pre-workshop revisions
	Th Oct 23	Workshop 4 Resolution
9	M Oct 27	Lecture 8 Sea level change
	W Oct 29	Assignment due Pre-workshop revisions
	Th Oct 30	Workshop 5 Nested arcs
10	M Nov 3	Lecture 9 Sea level change
	W Nov 5	Assignment due Pre-workshop revisions
	Th Nov 6	Workshop 6 Building blocks and flow
11	M Nov 10 <i>Reading break</i>
	W Nov 12	Assignment due Pre-workshop revisions
	Th Nov 13	Workshop 7 Energy and words
12	M Nov 17	Workshop 8 Condensing
	Th Nov 20	Exam Marine Geology
13	M Nov 24 Student presentations
	Th Nov 27 Student presentations
14	M Dec 1 Student presentations
	W Dec 3	Assignment due Final paper

APPENDIX

SCHOOL OF EARTH AND OCEAN SCIENCES INFO

- SEOS Website: uvic.ca/seos
- SEOS Office: seos@uvic.ca
- SEOS Director: Dr. Jay Cullen, seosdirector@uvic.ca
- SEOS Mental Health & Wellness Contact: Dr. Andy Fraass, andyfraass@uvic.ca
- SEOS Undergraduate Advisor: Dr. Lucinda Leonard, seosadvisor@uvic.ca
- SEOS Graduate Advisor: Dr. Roberta Hamme, seosgradadvisor@uvic.ca
- Ocean Science Mentor: Dr. Jody Klymak, seosoceansci@uvic.ca
- Climate Science Advisor: Dr. Colin Goldblatt, climateadvising@uvic.ca

UNIVERSITY STATEMENTS & POLICIES

- Academic Calendar: [Information for All Students](#)
- [Creating a respectful, inclusive, and productive learning environment](#)
- [Accommodation of Religious Observance](#)
- [Accommodation and Access for Students with Disabilities](#)
- [Student Conduct](#)
- [Non-academic Student Misconduct](#)
- [Accessibility](#)
- [Diversity / EDI](#)
- [Equity statement](#)
- [Sexualized Violence Prevention and Response](#)
- [Discrimination and Harassment Policy](#)

UVIC GRADING SYSTEM

As per the Academic Calendar:

Grade	Grade point value	Grade scale	Description
A+	9	90-100%	Exceptional, outstanding and excellent performance. Normally achieved by a minority of students. These grades indicate a student who is self-initiating, exceeds expectation and has an insightful grasp of the subject matter.
A	8	85-89%	
A-	7	80-84%	
B+	6	77-79%	Very good, good and solid performance. Normally achieved by the largest number of students. These grades indicate a good grasp of the subject matter or excellent grasp in one area balanced with satisfactory grasp in the other area.
B	5	73-76%	
B-	4	70-72%	
C+	3	65-69%	Satisfactory, or minimally satisfactory. These grades indicate a satisfactory performance and knowledge of the subject matter.
C	2	60-64%	
D	1	50-59%	Marginal Performance. A student receiving this grade demonstrated a superficial grasp of the subject matter.
F	0	0-49%	Unsatisfactory performance. Wrote final examination and completed course requirements; no supplemental.
N	0	0-49%	Did not write examination or complete course requirements by the end of term or session; no supplemental.

STUDENT RESOURCES

POSITIVITY AND SAFETY

The University of Victoria is committed to promoting, providing, and protecting a positive and safe learning and working environment for all its members.

[Student Groups & Resources](#)

ACADEMIC RESOURCES

UVic Library - *UVic Library offers many services and resources for undergraduate and graduate students.*
uvic.ca/students/academics/library-services

Learning Resources - *UVic Learn Anywhere is the primary learning resource for students that offers many learning workshops and resources to help students with academics and learning strategies.*
onlineacademiccommunity.uvic.ca/uviclearn

Academic Skills Centre - *Offers online and in-person one-on-one tutorials, workshops, and more.*
uvic.ca/learningandteaching/cac

Math & Stats Assistance Centre - *Offers drop-in, face-to-face tutoring and a friendly, collaborative study space for 100- and 200-level math and stats courses.*
uvic.ca/science/math-statistics/current-students/undergraduate/msac

MENTAL HEALTH & WELLNESS

A note to remind you to take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep, and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone.

SEOS Mental Health & Wellness Contact - *Dr. Fraass is a faculty member who can act as a sympathetic ear and (more importantly) provide guidance about: how to access the multitude of University support services, and which are useful in different circumstances. Andy can be found by dropping by his office or lab (Bob Wright A431, B409). He is also available via email for questions or to arrange a time to have a chat.* andyfraass@uvic.ca

Student Wellness Centre - *Our team of practitioners offers a variety of services to support students' mental, physical, and spiritual health.* uvic.ca/student-wellness

Counselling Services - *Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students.* uvic.ca/services/counselling/

Health Services - *University Health Services (UHS) provides a full-service primary health clinic for students and coordinates healthy student and campus initiatives.* uvic.ca/services/health/

ACCESSIBILITY

Students with diverse learning styles and needs are welcome in this course. If you have a documented disability or health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning (CAL) as soon as possible.

Centre for Accessible Learning - *The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.* uvic.ca/services/cal/

ADVISING

For academic advising-related questions, students in the School of Earth and Ocean Sciences are also encouraged to meet with the SEOS Undergraduate Advisor (seosadvisor@uvic.ca) as well as an academic advisor in the Academic Advising Centre early in their studies to help map out a plan to declare a major and complete university program requirements.

Academic Advising Centre - Academic advice and support is currently available by phone, email and virtual or in-person appointments. uvic.ca/services/advising

Ombudsperson - The ombuds office is an independent, impartial, and confidential resource for undergraduate and graduate students and other members of the University of Victoria community. The ombudsperson helps resolve student problems or disputes fairly. uvicombudsperson.ca

ACADEMIC CONCESSION

You can request an academic concession if your course requirements are affected by unexpected and unavoidable circumstances, or conflicting responsibilities. Concession requests can be for an in-course extension, deferral, withdrawal under extenuating circumstances, or an aegrotat. Please speak to an advisor at the Academic Advising Centre if you have questions on how requesting a concession will affect your academic program.

Undergraduate Academic Concessions - uvic.ca/students/academics/academic-concessions-accommodations/request-for-academic-concession/index.php

EQUITY AND HUMAN RIGHTS AT UVIC

EQHR is a resource for students, staff, and faculty who have experienced sexualized violence, discrimination, and/or harassment and are looking for informal and/or formal resolution options as well as advice, coaching, and/or education. We are available for confidential consultations so that you can ask questions and learn your options.

EQHR – By email at eqhr01@uvic.ca or in-person (Sedgewick C115). uvic.ca/equity

Sexualized Violence Resource Office – If you have been directly or indirectly impacted by sexualized violence, reach out to the SVRO for information, advice, resolution options (restorative and disciplinary) as well as support options and referrals. The SVRO is both survivor-centred and trauma-informed in their approach. You can reach us by phone at [250-721-8021](tel:250-721-8021) or by email at eqhr01@uvic.ca to book either an in-person (Sedgewick C119) or online appointment. uvic.ca/svp

RESOURCES FOR INTERNATIONAL STUDENTS

International Centre for Students - The primary office supporting international students on campus at the university-wide level. uvic.ca/international-experiences

UVic Global Community Initiative - Provides various supportive programming, including a Mentorship Program and Conversation Partner Program. uvic.ca/international-experiences/get-involved/uvic-global-community

RESOURCES FOR INDIGENOUS STUDENTS

Indigenous Student Support - UVic offers holistic services to Indigenous students throughout their academic journey. uvic.ca/students/info-for/indigenous-students

Elders in Residence - The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty, and administration in Indigenous ways of knowing and being. uvic.ca/iace/elders/elder-visits