

SYLLABUS

OCSC 1000 – Exploration of the World Ocean (online)

Instructor

Dr. Annie Mercier

- **Office:** Ocean Sciences Centre, AX 4022 (Logy Bay)
- **Office hours:** Book an appointment
- **Phone:** (709) 864-2011
- **Email:** amercier@mun.ca

For all course related communication, please **use the online Course Mail widget (@online.mun.ca)**. I normally answer within 24-48 h. If you have a pressing question, concern or suggestion, I encourage you to copy the TAs (listed in the Teaching Assistants tab under Communication / Classlist). Please **do not** use my regular (@mun) email unless it is a real emergency.

You may find out more about my work, research interests, and travels by accessing my academic website <http://www.mun.ca/osc/amercier/bio.php> and the Mercier Lab website <http://www.ucs.mun.ca/~amercier/>

Course Description & Goal

This online course covers the basic disciplines of ocean sciences, including biological, chemical, geological and physical oceanography. There are no prerequisites; topics will be covered at a level sufficient for science majors but accessible to non-majors. The class will take the form of a multi-disciplinary oceanographic expedition that will expose you to techniques of ocean exploration and study, while explaining key concepts of ocean floor features, sediments, seawater chemistry and physics, ocean circulation, causes and effects of currents, waves and tides, deep-sea and coastal processes, biogeochemical cycles, and marine ecology – the interactions of all of these areas with the biological systems present in or living off the ocean.

The course emphasizes critical thinking and applies learned principles to features of eastern North America, as well as other locations globally. After completing this course, you will have a better understanding of important oceanographic issues that affect the entire globe and feel more of a connection with what is happening in other countries with regards to ocean use, natural disasters, natural resources, sea level changes, and environment stewardship. You will also be able to scientifically analyze the consequences of human infrastructure built in and around coastlines, and understand the important role that the ocean has played and will continue to play in global environmental processes.

Learning Outcomes

Upon successful completion of this course, you will be able to:

1. Outline the basic physical, chemical, geological and biological characteristics of the ocean;
2. Compare current methods used in ocean sciences and their limitations;

3. Apply scientific methods to problems involving the marine environment;
4. Critically discuss various issues related to the world ocean (climate, pollution, resources management, etc.); and
5. Conclude that oceanography is global in nature and of special interest to diverse societies, including the population of Atlantic Canada.

Course Schedule (last updated Aug 2023)**

The following are due by 11:59 PM on Wednesdays (NL time, see the schedule below).

- Expedition Log Books and Quizzes
- Discussion Posts (initial + reply)

Assessments (biweekly quizzes) must be submitted by 6 PM (NL time) on the Thursday that they are due (see the schedule below). They are open for 24 hours.

NOTE: Once you start a quiz, you will have 15 minutes to complete it. It is recommended that you submit the quiz a couple of minutes before the 15 minutes expire. A 5-minute grace period will be available in the case of a rare technical issue.

The exact **dues dates** are indicated in the Quizzes and Assignments folders.

Module Dates	Virtual Expedition	Class / Topics	Assignments / Deadlines
Introduction September 6		- Welcome - Introduction - Syllabus, course schedule and guidelines - World ocean concept	- Familiarize yourself with Brightspace (D2L) - Review online materials - Course Introduction - Course Intro Survey
Module 1: Ocean Exploration September 8 – 14	1. Exploring the world ocean	- Oceanography - Ocean exploration from its origin to present days	- Complete Expedition 2 – The signs and effects of climate change. - Submit Log Book and Quiz
Module 2: Secrets of seawater September 15 – 21	2. The signs and effects of climate change	- Water molecule - Temperature, Salinity - Dissolved gases - Pressure - Nutrients - Light and sound	- Complete Expedition 3 – Seafloor observatory. - Submit Log Book and Quiz
Module 3: Dynamic seafloor September 22 – 28	3. Seafloor Observatory	- Origins of oceans - Evolution of oceans (moving plates) - Earthquakes and volcanoes - Major ocean basins, seas	- Complete Expedition 4 – Tracking El Niño. - Submit Log Book and Quiz - Assessment 1
Module 4: Ocean in motion September 29 – October 5	4. Tracking El Niño	- Winds - Surface currents - Underwater currents - Water cycle - Climate - Hurricanes and typhoons	- Complete Expedition 5 – Harnessing the ocean's energy. - Submit Log Book and Quiz - Post to Discussion 1

** Be aware that we change from Newfoundland daylight time (NDT) to standard time (NST) mid semester.

October 6-12	Semester break week	NA	<ul style="list-style-type: none"> - Ocean Day - Post to Discussion 1 - Assessment 2
Module 5: Marine Rhythms October 13 – 19	5. Harnessing the ocean's energy	<ul style="list-style-type: none"> - Waves - Tides - Sea surface disturbances 	<ul style="list-style-type: none"> - Complete Expedition 6 – Moving shorelines. - Submit Log Book and Quiz - Deadline for Discussion 1 (submit your original post and reply to the Assignments folder)
Module 6: Coastal landscapes October 20 – October 26	6. Moving shorelines	<ul style="list-style-type: none"> - Sea level - Erosion and deposition - Types of coasts - Seascape worldwide 	<ul style="list-style-type: none"> - Complete Expedition 7 – Surveys of coastal habitats. - Submit Log Book and Quiz
Module 7: Shallow seas October 27 – November 2	7. Surveys of coastal habitats	<ul style="list-style-type: none"> - Continental shelves - Rocky habitats - Sandy habitats - Underwater fields and forests - Coral reefs 	<ul style="list-style-type: none"> - Complete Expedition 8 – Exploring the deep sea and polar environments. - Submit Log Book and Quiz - Post to Discussion 2 - Assessment 3
Module 8: Open ocean November 3 – November 9	8. Exploring the deep sea and polar environments	<ul style="list-style-type: none"> - Stratification - Plankton life - Continental slope - Deep-sea features - Polar oceans 	<ul style="list-style-type: none"> - Complete Expedition 9 – Measuring ocean productivity. - Submit Log Book and Quiz - Post to Discussion 2
Module 9: Cradle of life November 10 – 16	9. Measuring ocean productivity	<ul style="list-style-type: none"> - Classifying marine organisms - Productivity - Life in the water column - Life on the seafloor - Adaptations - Fossils 	<ul style="list-style-type: none"> - Complete Expedition 10 – Counting and monitoring marine organisms. - Submit Log Book and Quiz - Deadline for Discussion 2 (submit your posts to the Assignments folder) - Assessment 4
Module 10: Marine biodiversity November 17 – 23	10. Counting and monitoring marine organisms	<ul style="list-style-type: none"> - Biodiversity - Major groups of marine animals - Microorganisms - Seaweeds and plants - Evolution - Interactions 	<ul style="list-style-type: none"> - Complete Expedition 11 – Towards a sustainable use of ocean resources. - Submit Log Book and Quiz
Module 11: Human-ocean interactions November 24 – 30	11. Towards a sustainable use of ocean resources	<ul style="list-style-type: none"> - Marine food webs - Marine ecosystems under threat - Ocean management and conservation 	<ul style="list-style-type: none"> - Review: Lecture handouts and Review module will be available. - Submit Log Book and Quiz - Assessment 5 - Final Exam TBA

Course Format and Resources

Course Resources

There are no required textbooks for this course; the course website will provide all of the relevant resources.

Teaching and Learning Approach

This course is designed to be as dynamic and engaging as possible. Students are required to read and complete self-guided virtual expeditions. Self-paced "Deep Dive" content and "Captain's Notes" replace lectures, providing details on the topics and answering typical questions that students may have. Bi-weekly assessments and online discussions will round out the learning experience. There may also be occasional synchronous sessions to interact more directly with the instructor and teaching assistants (TAs).

Online/Virtual Expeditions

You are expected to play an active role in your learning through the timely completion of online virtual expeditions. The expeditions, which are designed to replace one classroom lecture, are web-based interactive exercises, i.e. self-paced tutorials composed of animations, short audio/video segments, graphics and texts. You should work your way through an expedition by viewing the materials, taking notes in a log book, and completing a quiz. See section on Assessment of Learning.

Starting in Modules 4 and 7 you will also be *required* to participate in online discussions, which may be problem-based and issue-oriented. All forums can be accessed in the modules as well as under the Communication / Discussions tab.

You are advised to post any questions or thoughts on the course or a particular expedition in the "Questions" discussion forum in the course shell (questions can be addressed to peers and they will also be monitored by the TAs and instructor).

Important: Download your log book at the start of each expedition. As you navigate through the expedition (view the content and participate in self-guided activities), take notes in the preformatted log book by answering the guiding questions and using the additional space as necessary. The log book serves as the notes from which to study for exams. In each expedition, you must also answer five questions (through the Quiz tool). For further details, please refer to the section on Assessment of Learning / Course Evaluation.

About submission deadlines

The due date for each quiz/assessment and assignment (filled expedition log book, discussion posts, etc.) is provided in the Quizzes and Assignments folders. It is your responsibility to make sure that the correct file is submitted to the Assignments folder on time. You should ensure that you received proper confirmation of all submissions (if in doubt, check your Submission History).

Because extra "make up" credits can be obtained, ***late submissions will not be accepted*** (and students will not be notified that their submission has not been received). Late submissions justified by *exceptional* circumstances (with appropriate written justification) may be granted but deductions may still apply.

Technical issues and broken links

For general issues with the Brightspace portal, use the Help tab (Student Resource or Support Centre).

Technical issues will not be a valid excuse for missing deadlines so give yourself some latitude and avoid last-minute completion (e.g. do not submit an assignment only minutes before the deadline).

If you encounter a broken link in a module, please notify the instructor and the TAs immediately.

There will of course be no penalty related to inaccessible content unless the situation is resolved (check the Announcements posts regularly and make sure to activate notifications in your profile).

Review Module

A Review module will also become available towards the end of the semester. It will include flip cards, a study guide and a mock exam. The intention is that students use this module to help succeed in the class, by reviewing material and studying for the final exam. Prepare ahead by reviewing the materials in each module (Expedition log book, Deep Dive, Captain's Notes), and identifying the specific areas in which you need help, practice, or review.

Assessment of Learning

Evaluation Breakdown*

Virtual Expeditions	30% (3% x 10)
Assessments (biweekly)	20% (4% x 5)
Discussions	10% (5% x 2)
Final Exam	40%
<i>Total</i>	<i>100%</i>
<i>Optional extra Credits</i>	<i>up to 10%</i>

**Be aware of the policy on Submission Deadlines outlined in the Course Format and Resources*

Assessment Descriptions

Virtual Expeditions 30%

Each student will take on the role of research scientist in a series of 11 virtual oceanographic research activities (online). Each expedition will be worth 3% (30 pts). Your top 10 marks will comprise your grade.

New expeditions will be available well ahead of time; they are due and are to be completed by the indicated Wednesday 11:59 pm. You should probably not get too far ahead of schedule because preparing the logbooks will also help prep you for the quizzes! For each expedition, students must answer 5 simple/basic questions through the **Quiz** tool and fill out a weekly **Expedition Log Book** for submission to the **Assignments** folder. Please submit **only doc/docx, rtf or pdf** files and ensure that you include your name and student number on your submission. Completing the expedition and submitting a fully filled log book is worth 15 points and each of the 5 correctly answered questions is worth 3 points. The log books also provide a medium for taking notes on the materials; you will use them to prepare for biweekly assessments and for the final exam.

Log books

Completing the expedition log book may seem time consuming relative to being worth only 1.5% — but it is essentially there to identify important contents (rather than being an assignment meant to earn you marks). The fact that log books do get marked is a bonus (like getting marks for taking class notes).

Expedition quizzes

Online quizzes are not designed to test your knowledge but rather to make sure you go over all the expedition material provided. Therefore some of the questions are simplistic/trivial (rather than learning oriented). Essentially the quiz marks are a bonus for completing the expedition.

Assessments (biweekly quizzes) 20%

Biweekly assessments (5 quizzes x 4%) are learning oriented. Questions may be derived from all of the module contents covered in the two weeks that precede an assessment (intro and modules 1 and 2 for Assessment 1; modules 3 and 4 for Assessment 2; modules 5 and 6 for Assessment 3; modules 7 and 8 for Assessment 4; and modules 9 and 10 for Assessment 5). There will not be any deferral of these assessments (since extra credit reports can help make up for any missed assessment or assignment).

Discussions 10%

At the end of expeditions 4 and 7, students will be invited to participate in a required discussion in the online discussion forum. Each student will make an initial posting, approximately 300 words long and reply to another student with a posting of approximately 100 words. The original posting and subsequent reply to at least one other student must be **separate postings***. You will have 2-3 weeks to complete each discussion. Personal insight and accurate knowledge, gained from the modules and associated material, and the quality of writing for communicating this knowledge to other students in the class are the important grading criteria for these discussions. Discussions are worth 5% each, with 3% assessed for content knowledge (pertinence, accuracy), and 2% for writing quality (logical flow, grammar, spelling).

***Important:** You are required to submit both an original posting and at least one response to another post to the discussion forum and **you must submit a copy of these postings** to your instructor, **via the Assignments folder**, by 11:59 pm on the due date (listed in the folder). **Only the submissions to the Assignments folder will be marked (not the forum postings)**. Please submit **only doc/docx, rtf or pdf files** and ensure that you **include the context** of your postings (e.g. post to which you are replying). Indicate your name and student number on your submission to the Assignments folder.

Final Exam 40%

Because the final exam emphasizes all the material covered in various formats inside the modules (virtual expedition, deep dive, captain's notes), it is very important that you take notes throughout the course. Taking good notes and reviewing them on a regular basis is the best way to absorb the material presented. In addition, the expedition log books and the periodic assessments/quizzes should be helpful when studying.

Prior to the final exam, a Review module will become available online in the course shell (including flip cards, a study guide and mock quiz); it is recommended that you make good use of it.

Deferred final exams: Final exams are managed at the university level and requests for deferrals can only be granted for *exceptional documented* reasons (e.g. serious illness or bereavement), **not** for conflicts with other commitments or travel arrangements (or other similar reasons). To request a Deferred Final Exam, please consult the [relevant guidelines in the MUN Calendar](#) and follow the procedure outlined on the website of the Department of Ocean Sciences ([Deferring a Final Exam](#)).

Extra credits (up to 10%)

Two “extra credit” seminar/activity reports, worth 5% each, will be made available. In other words, there are 110% available in the class but grades will be calculated as if there were only 100% available. The extra credits are basically free points. Students are encouraged to take these extra credits to either boost their grades or to make up for missed assessments or expeditions. This way, students do not have to plead (illness, appointment, family problem, computer glitch, etc.). If they miss an assignment/assessment, extra credit reports can be used to make up. It is also a great opportunity for highly motivated students to boost their grades.

Start attending seminars/conferences **early** in the semester to gather material for the extra credit reports; don’t wait until it is too late! Presentations on topics in ocean sciences or in other science fields (biology, geology, chemistry, physics, etc.) are eligible. Note that guest lectures presented as part of the course are NOT eligible for extra credit reports. You need to attend an external event, conference or seminar.

Format: Extra credit reports must be 1.5 to 2 pages (single-spaced). They will include: (1) a full description and clear overview of the event/seminar attended, (2) a clear outline of the major activities/findings, (3) a critical assessment of their strengths and limitations. In that last segment, you must state what you thought of both (3a) the contents and (3b) the delivery. There will be deductions for grammar and spelling errors. Extra credit reports may be submitted at any time to the Assignments folder. A maximum of two extra credit reports can be submitted during the semester. Submissions will be accepted until 11:59 pm on the last day of class.

Please submit **only doc/docx, rtf or pdf files** and include your name and student number on your submission.

Academic Integrity

Academic integrity is a foundational component of academia. The Center for Academic Integrity (CAI) defines academic integrity as "a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals to action" (CAI, Fundamental Values Project, 1999). To ensure that learning and scholarship continue to thrive as described, academic communities cannot condone acts of academic dishonesty, such as cheating, misrepresentations, or [plagiarism](#).

To prevent such offenses, you as a student attending Memorial are responsible to familiarize yourself with the Memorial University of Newfoundland's General Academic Regulations on Academic Misconduct ([Section 5.11](#)), specifically noting the list of Academic Offences outlined in (Section 5.11.4).

Important: Submitted works will be monitored for academic offenses (including [plagiarism](#)) and deductions or more severe penalties will apply.

Course and Institutional Policies

Basic skills requirements

Students enrolling in a science class at Memorial are expected to do university-level work. It is assumed that you are proficient in English (reading and writing at the university level) and that you are familiar with basic mathematics. If you do not have these basic skills, it is recommended that you obtain them before you enroll in this course. Furthermore, all students are required to use a computer and the Internet in this course. If you do not have computer access and Internet skills, then it is highly recommended that you obtain them before you attempt this course.

University-level expectations

Students fresh out of high school may be a little shocked and initially confused by what is expected of them and what is not provided to them in their first semester at university. Be reminded that you are entirely responsible for knowing what is expected of you in a course, including course requirements, course materials, assignment schedule, study hours needed, and so on. I assume that you have determined exactly how much time you have in your life and work schedule to devote to this and other classes. When in doubt, you are expected to ask questions, seek answers, get help, find the right people to guide and assist you, and, generally, to be in charge. There are numerous resources at Memorial that you can tap into for assistance (see below), including your instructor. But it is ultimately up to you to acknowledge that you need help and to get help if you need it.

Drop policy

It is the sole responsibility of the student to drop the course. Do not rely on the instructor. Failure to drop a course before the prescribed deadline (through the Registrar's Office) may result in a failing grade (F) for the semester which may affect your program.

Study requirements

Students are expected to dedicate at least six (6) hours per week for this course, excluding review/study. As a general guideline, you can expect to devote about 120 hours or more to this course over the semester (14 weeks), including class time, online time and study time. I assume that you are spending the appropriate amount of time towards your studies. Failure to properly budget your time may severely hamper your success in this course. Make sure you consider your time constraints when signing up for this course and any others.

Inclusion, Equity and Caveats

Students with Disabilities

Memorial University is committed to supporting inclusive education based on the principles of equity, accessibility and collaboration. Accommodations are provided within the scope of the [University Policies for the Accommodations for Students with Disabilities](#). Memorial works in collaboration with the [Glen Roy Blunden Center](#), to support students with disabilities. I encourage any class participant(s) who may require physical or academic accommodations to notify me privately.

Equity

We welcome all learners from various disciplines and differing ethnic and cultural backgrounds from within the University, as this provides opportunity for the sharing of a diversity of experiences, world-views, values, problem-solving approaches, and enlightening and enriching course perspectives. It is an expectation that course discourse be collegial and respectful across disciplinary, ethnic, cultural, and personal boundaries.

Memorial University Support Services

Support Services offered to students at Memorial University include:

- Indigenous Student Resource Office <https://www.mun.ca/indigenous/students/st-johns-campus/>
- The Blundon Center <https://www.mun.ca/student/about-us/units-and-contacts/accessibility-services---the-blundon-centre/>
- The Internationalization Office <http://www.mun.ca/isa/main/>
- Student Affairs and Services <http://www.mun.ca/student/>
- Student Wellness and Counselling Center <http://www.mun.ca/counselling/home/>
- The Writing Center <http://www.mun.ca/writingcentre/>

Additional Information

- Online student support: <https://blog.citl.mun.ca/resourcesforstudents/>
- Technical support available 7 days a week, Support Centre <https://citl.mun.ca/support/>
- Library services: <http://www.library.mun.ca/>
- Welcome to Memorial: <http://www.mun.ca/become/undergrad/explore/index.php>
- Navigate app: Students are encouraged to download the Navigate app to help support their success. The app can be found in the Apple app store or Google Play by searching “Navigate Student”. The app provides timely university information, including dates and deadlines, allows students to book appointments with various advisors and support services across the university, and establish study groups within courses using the Study Buddies feature. Please note that if you cannot access the app, a desktop version is available at <https://mun.navigate.eab.com/app/> . If you have any questions about the app, please contact navigateadmin@mun.ca

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