

OCSC4910 (4700) Hot Topics in Oceanography
Winter Semester, January – April 2024

Updated 8 November 2023

PR: OCSC 1000 and a minimum of 3 credit hours at the 3000 level in any Faculty of Science course

Syllabus for OCSC 4910 (4700):

Oceanography is the study of the physics, chemistry, geology and biology of the world oceans. “Hot Topics” in oceanography are areas of heightened current interest to both oceanographers and the general public. This course provides enrolled students with information on a Hot Topic and prepares students for public speaking. Students are encouraged to think about relevant issues from both a scientific viewpoint and a societal perspective.

Examples of “Hot Topics” in Biological Oceanography:

The biological pump of CO₂ into the deep ocean
Iron fertilization of the ocean surface to enhance the biological pump
Agricultural fertilizer runoff causing toxic algae blooms and anoxic coastal seawater conditions
Bacterial decomposition of oil spills
Whale entanglement in fishing gear
Canadian seal hunt
Ethics of aquariums
Marine light pollution and seabird mortalities

Examples of “Hot Topics” in Chemical Oceanography:

Ocean acidification and the Great Barrier Reef
Plastic pollution of the ocean; The Pacific Garbage Patch
Pollution associated with Antarctic Tourism

Examples of “Hot Topics” in Physical Oceanography:

Sea level rise with anthropogenic global warming
Slowing of the Atlantic Meridional Overturning Circulation with anthropogenic global warming
Environmental impact of offshore wind turbine farms

Examples of “Hot Topics” in Geological Oceanography:

Melting Antarctic ice sheets
Melting Arctic sea ice
Recent undersea volcano eruptions
Recent undersea earthquakes and tsunamis

One hour of faculty lecture or student presentation of a Hot Topic (Monday class), one hour of classroom discussion of the Hot Topic (Wednesday class) and one hour of debate (Friday class) per week.

No Textbook; Scientific publications and news media articles provide information for the faculty lecture or student presentation, classroom discussion and class debate.

Should the MUN semester be disrupted, the course will transition to remote delivery. Students will be notified of changes to the course syllabus through the Brightspace course shell and through student's MUN emails sent by the instructor.

Course Instructor :

Professor: Dr. Joe Wroblewski Office: C4047, Physics Chemistry Building
Phone: 864-2410 e-mail: jwroblew@mun.ca
Office hours: one hour before and one hour after scheduled class time

Class time: MWF 11:00-11:50 AM Room: C4011, Physics Chemistry Building

Course Outline:

One Hot Topic will be covered per week during the semester.
The Monday lecture by a course-enrolled student will provide *the background science* on a chosen Hot Topic.
The Wednesday class will be *a round-table discussion of relevant news media articles*.
The Friday class will be *a student-led debate to understand the various views of the public*.

Evaluation

Presentation (35%) – Each student will choose a Hot Topic. The instructor must approve the topic. The student will present a 20-minute briefing on the scientific background of the Hot Topic during the Monday class time. The instructor's key for grading the presentation (rubric) is posted on the Brightspace course shell.

Weekly Assignments (50%) - Each week, after the Monday scientific background presentation, and after the Wednesday discussion of relevant news media articles, all students will write a summary of the key issues of the Hot Topic, with a list of points for the Friday class debate. This one-page assignment is emailed to the course instructor before Friday class.

Quiz (15%) – The quiz is based on the Introductory Lectures by the instructor. There is no Final Exam.

<u>Structure of Course Evaluation</u>	<u>Marks</u>
Presentation	35
Weekly Assignments	50
Quiz	15
Total:	100

Introductory Lectures:

The course begins with lectures by the instructor on:
Philosophy of Science
Other Ways of Knowing - Traditional Ecological Knowledge
Other Ways of Knowing – Fishers' Ecological Knowledge
Social Epistemology
Precautionary Principle

Course Material: Introductory lectures and student presentations in Power Point form will be posted on the Brightspace shell.

Readings will be from a number of different sources, including scientific journals and online newspaper articles (e.g. The Globe and Mail, The New York Times, The Guardian).

This course challenges your understanding of contentious views. Students will consider views that may not be held personally. This class was designed to provoke new thoughts and improve your scientific communication skills. In your presentations and assignments, reference material must be identified. Avoid plagiarism.

Statement on religious holidays

It shall be the responsibility of the student to notify the instructor no later than the last day of late registration of intention to participate in religious holidays that do not fall on official MUN holidays or days of class recess.

Statement on academic integrity: Students are expected to adhere to those principles which constitute proper academic conduct. A student has the responsibility to know which actions, as described under Academic Offences in the University Regulations, could be construed as dishonest or improper. Students found guilty of an academic offence may be subject to a number of penalties commensurate with the offence including reprimand, reduction of grade, probation, suspension or expulsion from the University. For more information regarding this policy, students should refer to the University Regulations for Academic Misconduct (Section 6.12) in the University Calendar.

Statement regarding commitment to accommodation of students with disabilities: Memorial University of Newfoundland 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 (www.mun.ca/policy/site/policy.php?id=239). Students who may need an academic accommodation are asked to initiate the request with the Glenn Roy Blundon Centre at the earliest opportunity (www.mun.ca/blundon).

Academic supports include: *Memorial in Teaching University Libraries, The Commons (QEII Library), The Glenn Roy Blundon Centre, The Writing for Innovation and Learning, Information Technology Services, Academic Advising, and Centre.*

Memorial has the following **student life supports** that can be availed of: *Student Wellness and Counselling Centre, Student Support and Crisis Management, MUN Chaplaincy, Sexual Harassment Office, The Circle: First Nations, Inuit & Métis Students Resource Centre, Disability Information Support Centre, International Students Resource Centre, Sexuality and Gender Advocacy, Student Parent Assistance & Resource Centre, Students Older Than Average, Intersections – A Resource Centre for Marginalized Genders, and specific departmental societies.*