OCSC 2100 - Introductory Chemical Oceanography
Winter 2020

Description: Ocean Sciences 2100 – Introductory Chemical Oceanography provides an introduction to the fundamental chemical properties of seawater and the processes governing the concentrations of elements and compounds in the oceans. It is an introduction to the sources, distribution, and transformations of chemical constituents of the ocean, and their relation to biological, chemical, geological, and physical processes. Topics include: controls on average concentration of chemicals in the ocean; vertical and horizontal distributions of ocean constituents; air-sea interactions; production, export, and remineralization of organic matter; the ocean carbon cycle; human-induced changes; stable isotopes; and trace elements.

CR: Chemistry 2610
PR: the former CHEM 1011 or 1051 or 1001 which may be taken concurrently


Instructor
Professor: Dr. Rachel Sipler Office: AX-4021, Ocean Sciences Centre, Logy Bay
Phone: 864-3223 email: resipler@mun.ca
Office hours: By appointment

Schedule: MWF Time: 10:00 to 10:50 AM Room: C3053

Evaluation
Structure of Course Evaluation Marks
Mid-Term Tests 25
Assignments 25
Participation 5
Final Exam 45
Total: 100

Important dates
January 6, Monday Lectures begin
January 20, Monday Assignment 1 due (in class)
January 31, Friday Midterm Exam 1 (in class)
February 7, Friday Assignment 2 due (in class)
February 17 - 21, 2019 Winter break
March 2, Wednesday Assignment 3 due (in class)
March 2, Monday Last day to drop courses without academic penalty
March 6, Friday Midterm Exam 2 (in class)
March 18, Wednesday Assignment 4 due (in class)
April 3, Friday Lectures end
April 8-18 Final exams
Course Material
Recommended readings, assignments and class updates will be posted on our class Desire2Learn page (http://online.mun.ca).

Participation
Participation will be graded through clicker responses using Learning Catalytics (https://learningcatalytics.com). Marks will be assigned based on question completion only, not on correct answers. Completion of >80% of questions will merit full marks, while completion of <50% of questions will not merit any marks.

Course Content Overview
1. An Introduction to Oceanography and Environmental Chemistry
2. Fundamental Properties of Seawater
3. Chemical Composition of Seawater
4. Water Masses, Ocean Circulation and Mixing
5. Fundamental Properties of Sediments
6. Chemical Reactions in the Oceans
7. Chemical Sedimentology
8. The Carbonate System and Ocean Acidification
9. Biogeochemical Cycling in the Oceans
10. Global Carbon Cycle
11. Coastal Marine Chemistry
12. The Oceans as a Waste Space

Class policies
All students are expected to display respect for the learning environment. This includes respecting opinions of your instructor, classmates and any guests as they are expressed in class. We welcome students from various disciplines and differing ethnic and cultural backgrounds expect course discourse to be collegial and respectful across disciplinary, ethnic, cultural, and personal boundaries. Laptop use is restricted to course-related activities including accessing lecture materials and taking your own course notes. Cell phone use during class is limited to clicker responses. Communicating via your phone during class is prohibited unless it is an emergency. If you are seen using social media or any program or electronics that are distracting to you, the instructor or your classmates you will receive no participation marks associated with that particular discussion. Please wait until after class to have any digital or verbal discussions. All students are bound by the Memorial University Student Code of Conduct (https://www.mun.ca/student/supports-and-resources/respectful-campus/student-code-of-conduct.php).

Missed/late work
*Missing an, assignment or exam:* You should contact the instructor as soon as possible to explain the reason. In case of sickness, you do not have to produce doctor's note for the missed assignment or exam. Exams cannot be made up. If you have an excused absence, the marking for the missed exam will be added to your final exam. Assignments or exams, *missed without explanation* will receive a mark of
0%. Late assignments should be emailed directly to the instructor and will be deducted 5% for each day that they are late.

_Dropping the course (after the last drop date) or requesting deferred final exam for health reasons requires a doctor's note. The information required in the doctor's note is listed in Section 6.14.6 of MUN Calendar,_
http://www.mun.ca/regoff/calendar/sectionNo/sectionNo=REGS-0859

_Academic Integrity_
All students are personally responsible for knowing which actions could be viewed as dishonest. Students found guilty of an academic offence may be subject to penalties commensurate with the offence. The standards to Academic Integrity are outlined in the Undergraduate Calendar:
http://www.mun.ca/regoff/calendar/sectionNo=REGS-0748

This class is designed to provoke thought, encourage discussion, and improve your scientific communication skills. Quoting _word for word_ should be done **sparingly**. In your _assignments_ - any direct quotes must be clearly identified as such, _using quotation marks, AND referenced properly_. Plagiarism will not be tolerated and if detected you will receive a 0 mark for that assignment and the issue will be submitted to the academic counsel. Please take the time to digest the information and put it into your own words.

_Inclusion and Equity_
Memorial University of Newfoundland is committed to ensuring an environment of understanding and respect for the dignity and worth of each student and also to supporting inclusive education based on the principles of equity, accessibility and collaboration. Students who may require physical or academic accommodations are encouraged to contact the Glen Roy Blunden Centre
https://www.mun.ca/student/new-student-experience/access.php

Support Services offered to students at Memorial include:
- The Counselling Center [http://www.mun.ca/counselling/home/](http://www.mun.ca/counselling/home/)
- The Writing Center [http://www.mun.ca/writingcentre/about/](http://www.mun.ca/writingcentre/about/)
- Student Affairs and Services [http://www.mun.ca/student/home/](http://www.mun.ca/student/home/)
- The International Student Advising Office [http://www.mun.ca/isa/main/](http://www.mun.ca/isa/main/)