

Faculty of Science Course Syllabus
Department of Biology
MARI 4350.03 / MARI 5350.03
Cutting Edge in Marine Sciences
Winter 2016-2017

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Lectures: Two hours per week: Tuesday-Thursday 4:05-4:55, LSC C206

Tutorials: Two half-hours per week: Tuesday-Thursday 4:55-5:25, LSC C206

Course Description

This course focuses on current, often hotly debated topics in marine science. We discuss recently published papers and current research initiatives on urgent issues, including biodiversity, fisheries, conservation, management, climate change, and human-ocean interactions. Class format includes lectures, case-studies, as well as active discussion, debates, group work and hands-on assignments.

Course Prerequisites for undergraduate students

BIOL 2060.03 and OCEA 2000X/Y.06 (or OCEA 2001.03 and OCEA 2002.03) and one of any of the following; BIOL 3065.03, MARI 3063.03, MARI 3080.03, MARI 3602.03 or MARI 3761.03

Course Prerequisites for graduate students

none

Course Objectives/Learning Outcomes

Students will learn about and discuss current hot topics in marine sciences that are at the forefront of fundamental and applied research

Students will critically evaluate recent, high-profile publications and identify their importance, strengths and weaknesses

Students will think about and plan the next steps of current research publications and initiatives

Students will assess the importance of those topics to society

Students will debate the relevance and importance of the newly gained knowledge in management, conservation, education and policy development

Undergraduate students will prepare a 1-page NSERC style research proposal on a selected topic

Graduate students will prepare a lecture-style presentation, hand-out and questions on a selected topic

Course Materials

Brightspace website. There is no textbook.

For each lecture, we will assign 1 relevant high-profile scientific publications for students to read in order to be prepared for the next class and review questions on the reading. Selected papers will be announced one week in advance. There is no reading assignment for the 1st week of term.

Course Assessment Explanation

To address the different knowledge levels of undergraduate and graduate students but have all contribute similarly to the various lecture and tutorial components, we will have different major assignments for each group (research proposal vs lecture), yet similar contributions to common components (i.e. review questions, contribution to discussion, exams).

Undergraduate students will write a 1-page NSERC style research proposal on a selected topic. Graduate students will review the current scientific literature and prepare a 40-min lecture on a current hot topic. They will also prepare 3-5 review questions for the other students and a hand-out with notes on the lecture. Graduate students will also prepare a discussion, debate or hand-on activity to engage students in the hot topic and critically discuss its importance for science and society, existing gaps, and next steps in the line or research.

Rubrics for grading lecture style presentations and written proposals (each 25% of final grade):

- Style [3%] (Clarity of speaking/writing)
- Format [3%] (Organization/length of presentation/proposal)
- Content [15%] (Depth of research; Detail of background information; Critical evaluation of recent facts and results; Proposed gaps and next steps; Understanding of methods and approach; Significance to science and society)
- Referencing [4%] (correct citations in presentation/proposal and reference list)

Graduate students need to achieve a B- to pass the course (anything below B- is an F).

Course Assessment for undergraduate students

Component	Weight (% of final grade)	Date
<i>Mid-term exam</i>	15	<i>Feb 16 (in class)</i>
<i>Final exam</i>	25	<i>Apr 6 (in class)</i>
<i>Review questions on readings (clicker)</i>	25	
<i>Contribution to discussion & activities</i>	10	
<i>Assignment: written 1-page NSERC style research proposal</i>	25	

Course Assessment for graduate students

Component	Weight (% of final grade)	Date
<i>Mid-term exam</i>	15	<i>Feb 16 (in class)</i>
<i>Final exam</i>	25	<i>Apr 6 (in class)</i>
<i>Review questions on readings (clicker)</i>	25	
<i>Contribution to discussion & activities</i>	10	
<i>Assignment: Lecture-style presentation</i>	25	

Other course requirements

For each lecture, we will assign 1 relevant high-profile scientific publications for students to read in order to be prepared for the next class and review questions on the reading. Selected papers will be announced one week in advance. There is no reading assignment for the 1st week of term.

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D	(50-54)
A (85-89)	B (73-76)	C (60-64)	F	(<50)
A- (80-84)	B- (70-72)	C- (55-59)		

Course Policies

This is a highly interactive class and students need to be present at all times and contribute to review questions, discussions and hands-on activities. Missing more than 2 classes will lower the grade on in-class activities including clicker questions. Missed exams will count 0%. In case of illness, a doctor's note is needed to avoid lower marks and repeat the exam. The content of weather-related cancelled classes will be integrated into the following lectures in abbreviated form if possible. Only topics presented and discussed in class/tutorial will be tested in exams.

Course Content

Week	Lectures	Low-trophic level fisheries
1	1 – Introduction to Cutting Edge 2 – Human impacts on the ocean	
2	3 – Fisheries: Current status & trends 4 – Cutting Edge science	
3	5 – New frontiers: Low-trophic level fisheries 6 – Marine protection: MPA Policy & Solutions	
4	7 – Solutions for sustainability: Tracking the human predator 8 – Solutions for sustainability: Ocean literacy & marine education	
5	9 – Marine protection: Fish habitat 10 – New frontiers: Aquaculture & Mining	
6	11 – New frontiers: Discovering the ocean's microbial world 12 - MIDTERM	
7	--- STUDY BREAK ---	
8	13 – Climate change impacts on basal species 14 – Climate change impacts on higher trophic levels	
9	15 – Climate change impacts on global ecosystems 16 – Modelling the ocean	
10	17 – Discussion: Project Proposal Ideas 18 – Discussion: Project Proposal Ideas	
11	19 – Graduate student lecture 20 – New technologies: Tagging marine species	
12	21 – New frontiers: Discovering biodiversity 22 – Global biodiversity targets and indicators	
13	23 – Ecosystem consequences of human activities 24 – FINAL EXAM	

ACCOMMODATION POLICY FOR STUDENTS

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. The full text of Dalhousie's Student Accommodation Policy can be accessed here:

http://www.dal.ca/dept/university_secretariat/policies/academic/student-accommodation-policy-wef-sep--1--2014.html

Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the **Advising and Access Services Centre (AASC)** prior to or at the outset of the regular academic year. More information and the ***Request for Accommodation*** form are available at www.dal.ca/access.

ACADEMIC INTEGRITY

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

The Academic Integrity website (<http://academicintegrity.dal.ca>) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. The full text of Dalhousie's ***Policy on Intellectual Honesty*** and ***Faculty Discipline Procedures*** is available here:

http://www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html

STUDENT CODE OF CONDUCT

Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general:

“The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect

- the integrity and proper functioning of the academic and non – academic programs and activities of the University or its faculties, schools or departments;
- the peaceful and safe enjoyment of University facilities by other members of the University and the public;
- the freedom of members of the University to participate reasonably in the programs of the University and in activities on the University's premises;
- the property of the University or its members.”

The full text of the code can be found here:

http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

SERVICES AVAILABLE TO STUDENTS

The following campus services are available to help students develop skills in library research, scientific writing, and effective study habits. The services are available to all Dalhousie students and, unless noted otherwise, are free.

Service	Support Provided	Location	Contact
General Academic Advising	Help with <ul style="list-style-type: none"> - understanding degree requirements and academic regulations - choosing your major - achieving your educational or career goals - dealing with academic or other difficulties 	Killam Library Ground floor Rm G28 Bissett Centre for Academic Success	In person: Killam Library Rm G28 By appointment: <ul style="list-style-type: none"> - e-mail: advising@dal.ca - Phone: (902) 494-3077 - Book online through MyDal
Dalhousie Libraries	Help to find books and articles for assignments Help with citing sources in the text of your paper and preparation of bibliography	Killam Library Ground floor Librarian offices	In person: Service Point (Ground floor) By appointment: Identify your subject librarian (URL below) and contact by email or phone to arrange a time: http://dal.beta.libguides.com/sb.php?subject_id=34328
Studying for Success (SFS)	Help to develop essential study skills through small group workshops or one-on-one coaching sessions Match to a tutor for help in course-specific content (for a reasonable fee)	Killam Library 3rd floor Coordinator Rm 3104 Study Coaches Rm 3103	To make an appointment: <ul style="list-style-type: none"> - Visit main office (Killam Library main floor, Rm G28) - Call (902) 494-3077 - email Coordinator at: sfs@dal.ca or - Simply drop in to see us during posted office hours All information can be found on our website: www.dal.ca/sfs
Writing Centre	Meet with coach/tutor to discuss writing assignments (e.g., lab report, research paper, thesis, poster) <ul style="list-style-type: none"> - Learn to integrate source material into your own work appropriately - Learn about disciplinary writing from a peer or staff member in your field 	Killam Library Ground floor Learning Commons & Rm G25	To make an appointment: <ul style="list-style-type: none"> - Visit the Centre (Rm G25) and book an appointment - Call (902) 494-1963 - email writingcentre@dal.ca - Book online through MyDal We are open six days a week See our website: writingcentre.dal.ca