Marine Management I - Syllabus
Department of Oceanography
OCEA 4401 - Fall 2024

Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people.

Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.

Course Instructor(s)

Instructor:
Ramón Filgueira, Marine Affairs Program
Room 807, LSC, Biology Wing
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Course Description

The oceans are seriously threatened –a consensus view held by most marine practitioners. Ecosystem change is definitely underway, and the time is rapidly approaching when the rate of change will be viewed as exponential – perhaps irreversible over a time span ranging from decades to centuries to millennia. The _threats_ are many, varied and include: ocean warming, sea level rise, acidification, pollution, and loss of biodiversity, to name but a few. The global ocean provides many services to humanity, not the least of which is maintaining the viability of the planet, which is increasingly becoming threatened. We should be acting collectively to change human activities and minimize those threats.

This course introduces students to the breadth of issues confronting the marine environment and the challenges marine managers face as they attempt to minimize conflicts, achieve benefits, and ensure that the _ecosystem goods and services_ provided by the oceans are sustainable. This current epoch, identified by world thinkers as the Anthropocene, is one in which there must be a new paradigm for addressing the problems confronting the oceans. Science is essential for understanding the changes occurring in the world's oceans, but how do we use this _scientific knowledge_ in a way that is available for informing marine-related decisions and those that influence the functioning of the marine environment – _decisions made by people every day at every level_ – from local to global, from individual to societal?

This course exposes students to the urgent need to link scientific knowledge of the ocean/land/air environments with policy/governance/management issues. It challenges students to focus on _how to best address these problems rather than just why they occur_.

This is because students in marine management must be problem solvers, incorporating knowledge from a diversity of disciplines across the natural and social sciences and the humanities to meet their mandate of understanding and solving coastal and marine-related problems. In other words, the _science/policy interface_ currently works only under a few selected circumstances. There is a strong need to grow an appreciation of its virtues and a recognition of the new endpoint, which is an understanding of the critical need to embrace the collected components of science and policy as a form of the continuum.

This course acknowledges the important contribution of science, but it is meant to do much more than that. It tasks students with asking the question that many marine science students today are already asking: _"How can my scientific knowledge contribute to making better decisions about the world's oceans?"_

Given the diversity of management issues confronting the coastal and ocean environment, this course will be taught by instructors spanning the natural and social sciences disciplines, all of whom have a practitioner and interdisciplinary approach to learning and scholarship. Its focus will be on better managing these issues by drawing on the available and appropriate contribution from these different yet complementary sources of knowledge. To do so, the course content is structured around a framework that sets the context for each issue being discussed, identifies the underlying pressures and their associated consequences, highlights the resulting impacts, and makes recommendations for sustainable responses.

Course Prerequisites

OCEA 2000.06 (or OCEA 2001.03/2002.03). Restricted to 4th year students.

Course Exclusions

N/A

Student Resources

Contact ramon.filgueira@dal.ca to schedule a meeting (office, Zoom, Teams…, etc.). Below is a list of available resources.

Course Structure

**Course Delivery**: In person
**Lectures**: Mondays and Wednesdays, 4:05p.m.–5:25p.m. at LSC C214
**Laboratories and Tutorials**: _N/A_

Course Materials

There is no required text for this course. A list of required readings for each class will be provided, and students are expected to complete all the required readings before coming to class. The course material will be available to registered students on Brightspace.

Assessment

Assignments

Course evaluation will be based upon five reflective assignments (specific guidance on each assignment will be provided during class and uploaded to Brightspace) and in-class participation demonstrating evidence of reading assigned readings before class. As a fourth-year course based on a broad survey of the integrated nature of Marine Management, this course will not have a final exam scheduled by the Registrar.

Component	Weight (% of final grade)
In-class participation	5%
Assignment 1: Problems and Solutions	15%
Assignment 2: Managing Conflicts	15%
Assignment 3: Informed-Based Decisions	15%
Assignment 4: Co-management	15%
Assignment 5: Integrative Frameworks	35%

Other course requirements

1. Students will be expected to attend all classes and participate actively throughout the course. Non-attendance of a class will result in a substantial knowledge gap for the student concerned and negatively affect the student's final grade.
2. Read weekly reading assignments in advance of scheduled classes. Reading materials support actual class discussions or provide background and context for students, enabling them to participate better in class discussions and improve their critical analysis of the subject matter being discussed.
3. Students are expected to be familiar with the university's academic and administrative rules, paying particular attention to policies regarding plagiarism and other forms of academic misconduct.

Conversion of numerical grades to final letter grades follows the
Dalhousie Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (0-49)
A- (80-84)	B- (70-72)	C- (55-59)	

Course Policies on Missed or Late Academic Requirements

1. Assignments submitted late will be subject to 10% reduction per day. In case of reasonable exceptional circumstances (e.g. technological issues, illness, extracurricular activities, etc.), an extension on the assignment may be obtained.

Given the flexibility in the assignment submission deadline, no alternative evaluation is offered. Note that there is no final exam in this course.

2. Students can use the Student Declaration of Absence form for late or missed requirements (Brightspace) or contact the course coordinator directly. All reasonable circumstances (e.g. technological issues, illness, extracurricular activities, etc.) will be considered. Medical notes are not required.

Course Policies related to Academic Integrity

1. Students are not allowed to work together on individual assignments.
2. Instructors have the right to use plagiarism software and report it to an academic integrity officer, following the recommendations of the Faculty of Science.
3. This is a writing course, and one of the learning objectives is to improve students' writing. Therefore, students are expected not to use generative AI and large language models (e.g., ChatGPT).

Learning Objectives

Course Objectives

1. To introduce Ocean Science students to a survey of contemporary marine management issues and the importance of an _interdisciplinary approach_ to understanding and addressing this issue.
2. To provide Ocean Science students with a course specifically designed to challenge their views on the current paradigm, which sees science and policy as two disconnected components of the decision-making process.
3. To demonstrate the importance of the role of science and scientists in changing human behaviour.

Expected Course Outcomes

1. Students will recognize the complexity of the knowledge base required to participate in understanding and solving issues confronting the marine environment.
2. Students will be capable of explaining the relevance of science in shaping policy-level decisions at local and global levels.
3. As a core requirement for the B. Ocean Science degree (Hons, Major or Minor), the course will broaden intellectual horizons across disciplines not typically provided in undergraduate science degrees.

Course Content

Week # (Class #)	Topic	Instructor	Assignment deadline
1 Sep 4 (C1)	Introduction to the course	RF	
2 Sep 9 (C2) Sep 11 (C3)	**Problems and Solutions** The Anthropocene Alkalinity Enhancement	 RF WB	
3 Sep 16 (C4) Sep 18 (C5)	**Problems and Solutions** Fisheries Management Marine Conservation	 MB MW	
4 Sep 23 (C6) Sep 25 (C7)	**Informed-Based Decisions** Aquaculture: In need for data! Carrying Capacity Modelling	 RF RF	 #1
5 Sep 30 Oct 2(C8)	**Informed-Based Decisions** *National Day for Truth and Reconciliation* Understanding Social Conflicts (Debate)	 RF	
6 Oct 7 (C9) Oct 9 (C10)	**Managing Conflicts in the Coastal Zone** The Science Policy Interface Regulatory compliance	 GR LLM	 #2
7 Oct 14 Oct 16 (C11)	**Managing Conflicts in the Coastal Zone** *Thanksgiving* Marine Spatial Planning	 JW	
8 Oct 21 (C12) Oct 23 (C13)	**Co-management**	 RC RC	 #3
9 Oct 28 (C14) Oct 30 (C15)	**Co-management**	 RC RC	
10 Nov 4 (C16) Nov 6 (C17)	**Integrative Frameworks** Social Ecological Systems DPSIR and PESTE	 RF RF	 #4
11	*Fall study break (no class)*		
12 Nov 18 (C18) Nov 20 (C19)	**Integrative Frameworks** ES and SESF Framework Discussion	 RF RF	
13 Nov 25 (C20) Nov 27 (C21)	**DPSIR case-study: Shipping** Drivers Risk	 RF RF	
14 Dec 2 (C22) Dec 3 (C23) Dec 4 (C24)	**DPSIR case-study: Shipping** Actions DPSIR Final paper tutorial	 RF RF RF	
Dec 9			#5

WB: Will Burt (Planetary Technologies), MB: Megan Bailey (Associate professor, Marine Affairs Program (MAP)), MW: Maxine Westhead (Director, Marine Affairs Program), GR: Gregor Reid (Director, Centre for Marine Applied Research (CMAR)), LLM: Leah Lewis-McCrea (Research Manager, CMAR), JW: Jenny Weitzman (Research Scientist, Centre for Marine Applied Research (CMAR)), RC: Rachael Cadman (Assistant professor, MAP)

University Policies and Statements

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit or e-mail the Indigenous Student Centre at 1321 Edward St or elders@dal.ca. Additional information regarding the Indigenous Student Centre can be found at: https://www.dal.ca/campus_life/communities/indigenous.html

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." Additional internationalization information can be found at: https://www.dal.ca/about-dal/internationalization.html

Academic Integrity

At Dalhousie University, we are guided in all our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. Additional academic integrity information can be found at: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion, please contact the Student Accessibility Centre (https://www.dal.ca/campus_life/academic-support/accessibility.html) for all courses offered by Dalhousie with the exception of Truro. For courses offered by the Faculty of Agriculture, please contact the Student Success Centre in Truro (https://www.dal.ca/about-dal/agricultural-campus/student-success-centre.html)

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). Additional diversity and inclusion information can be found at: http://www.dal.ca/cultureofrespect.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner - perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. The full Code of Student Conduct can be found at: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information regarding the Fair Dealing Policy can be found at:

https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. Additional information regarding Originality Checking Software can be found at: https://www.dal.ca/about/leadership-governance/academic-integrity/faculty-resources/ouriginal-plagiarism-detection.html

Student Use of Course Materials

Course materials are designed for use as part of this course at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading to a commercial third-party website) may lead to a violation of Copyright law.

DALHOUSIE UNIVERSITY

Faculty of Science

Student Resources and Support

University Policies and Programs

Important Dates in the Academic Year (including add/drop dates):
http://www.dal.ca/academics/important_dates.html

Classroom Recording Protocol:
https://www.dal.ca/dept/university_secretariat/policies/academic/classroom-recording-protocol.html

Dalhousie Grading Practices Policies:
https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Grade Appeal Process: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

Sexualized Violence Policy: https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html

Scent-Free Program: https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html

Learning and Support Resources

General Academic Support – Advising (Halifax): https://www.dal.ca/campus_life/academic-support/advising.html

General Academic Support – Advising (Truro): https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising.html

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness.html

On Track (helps you transition into university, and supports you through your first year at Dalhousie and beyond): https://www.dal.ca/campus_life/academic-support/On-track.html

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Indigenous Connection: https://www.dal.ca/about-dal/indigenous-connection.html

Elders-in-Residence (The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit the office in the Indigenous Student Centre or contact the program at elders@dal.ca or 902-494-6803:
https://cdn.dal.ca/content/dam/dalhousie/pdf/academics/UG/indigenous-studies/Elder-Protocol-July2018.pdf

Black Student Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre.html

LGBTQ2SIA+ Collaborative: https://www.dal.ca/dept/vpei/edia/education/community-specific-spaces/LGBTQ2SIA-collaborative.html

Dalhousie Libraries: http://libraries.dal.ca/

Copyright Office: https://libraries.dal.ca/services/copyright-office.html

Dalhousie Student Advocacy Services: https://www.dsu.ca/dsas?rq=student%20advocacy

Dalhousie Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Human Rights and Equity Services: https://www.dal.ca/dept/hres.html

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Faculty of Science Advising Support: https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html

Safety

Biosafety: http://www.dal.ca/dept/safety/programs-services/biosafety.html

Chemical Safety: https://www.dal.ca/dept/safety/programs-services/chemical-safety.html

Radiation Safety: http://www.dal.ca/dept/safety/programs-services/radiation-safety.html

Laser Safety: https://www.dal.ca/dept/safety/programs-services/radiation-safety/laser-safety.html