



Faculty of Science Course Syllabus
Department of Oceanography
Marine Management I – OCEA 4401
Fall 2023

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.

Instructor:

Ramón Filgueira, Marine Affairs Program
Room 807, LSC, Biology Wing
Email: ramon.filgueira@dal.ca; Tel: 902-414-1218

Lectures: Tuesdays and Thursdays 2:35p.m.–4:55p.m. at LSC 234

Laboratories: None

Office hours: contact ramon.filgueira@dal.ca to schedule a meeting (Office, Skype, Zoom...)

Course description

The oceans are seriously threatened – which is 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. For many the time is long past when we should be acting collectively to bring about change in human activities.

This course introduces students to the breadth of issue confronting the marine environment and the challenges facing marine managers as they attempt to ensure conflicts are minimized, benefits are achieved and 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. Clearly 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* everyday 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 issues of policy/governance/management. It challenges students to focus on *how can we best address these problems* rather than just why are these problems occurring. This is because students in marine management must be problem solvers, incorporating knowledge from a diversity of disciplines across the natural and social sciences as well as the humanities, to meet their mandate of both understanding and solving coastal and marine related problems. To put it in another way, the *science/policy interface* currently works only under few selected circumstances. There is a strong need to grow an appreciation of its virtues as well as a recognition of the new end point which is an understanding of the critical need to embrace the collected components of science and policy as a form of continuum.

This course acknowledges the important contribution of science, but it is meant to do much more than that. It tasks students to pose the question that many marine science students today are already asking, namely “*how can my scientific knowledge contribute to making better decisions about the world’s ocean?*”

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 how to better manage 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 of the issues being discussed, identifies the underlying pressures and their associated consequences, highlights the resulting impacts and makes recommendations on suitable responses.

Course Prerequisites

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

Course Objectives

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

Expected Course Outcomes

1. Students will recognize the complexity of the knowledge base required to participate in the 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-to-global levels.
3. As a core requirement for the B. Ocean Science degree (Hons, Major or Minor), the course will provide a *broadening of intellectual horizons across disciplines* that is not normally provided in undergraduate science degrees.

Required 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 do all the required readings prior to coming to class. The course material will be available to registered students on Brightspace.

Course Assessment

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 having read 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: Integrative Frameworks	15%
Assignment 5: DPSIR Application	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 will negatively affect the student's final grade.
2. Regular reading of weekly reading assignments, in advance of scheduled classes. Reading materials support actual class discussion or provide background and context for students to enable them to better participate in class discussion and to improve their critical analysis of the subject matter being discussed.
3. Students are expected to be familiar with the academic and administrative rules of the University, paying particular attention to policies regarding plagiarism and other forms of academic misconduct.

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

1. Assignments submitted late will be subject to 10% reduction per day. In case of reasonable special circumstances (e.g. technological issues, illness, extracurricular activities, etc.), an extension on the assignment may be obtained. Given the flexibility in the submission deadline for assignments, 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 directly contact the course coordinator. All reasonable circumstances (e.g. technological issues, illness, extracurricular activities, etc.) will be considered. Medical notes are not required.
3. Students are not allowed to work together on individual assignments.
4. The instructors have the right to use plagiarism software and report it to an academic integrity officer following the recommendations of the Faculty of Science.

Course content

Week # (Class #)	Topic	Instructor	Assignment deadline
1 Sep 5 (C1) Sep 7 (C2)	Introduction to the course The Anthropocene	RF RF	
2 Sep 12 (C3) Sep 14 (C4)	Problems and Solutions Marine Spatial Planning Plastics	MX TW	
3 Sep 19 (C5) Sep 21 (C6)	Problems and Solutions Science Communication The NGO perspective	JS GRB	
4 Sep 26 (C7) Sep 28 (C8)	Managing Conflicts in the Coastal Zone Marine Spatial Planning Lobster Aquaculture Interactions	JW RH	#1
5 Oct 3 (C9) Oct 5 (C10)	Managing Conflicts in the Coastal Zone Science Policy Interface Regulatory compliance	GR LLM	
6 Oct 10 (C11) Oct 12 (C12)	Informed-Based Decisions In need for data! Carrying Capacity Modelling	RF RF	#2
7 Oct 17 (C13) Oct 19 (C14)	Informed-Based Decisions Coastal Monitoring Program Understanding Social Conflicts (Debate)	DD/NT RF	
8 Oct 24 (C15) Oct 26 (C16)	Integrative Frameworks Social Ecological Systems DPSIR and PESTE	RF RF	#3
9 Oct 30 (C17) Nov 2 (C18)	Integrative Frameworks ES and SESF Framework Discussion	RF RF	
10 Nov 7 (C19) Nov 9 (C20)	DPSIR case-study: Shipping Drivers Risk	RF RF	#4
11	<i>Fall study break (no class)</i>		
12 Nov 21 (C21) Nov 23 (C22)	DPSIR case-study: Shipping Actions DPSIR	RF RF	
13 Nov 28 (C22) Nov 30 (C23)	What is a Marine Manager? Final paper tutorial	AV RF	
Dec 5			#5

MX: Maxine Westhead (Director, Marine Affairs Program), TW: Tony Walker (Professor, School for Resource and Environmental Studies), JS: Janet Stalker (Communications consultant); GRB: Genevieve Renaud-Byrne (Marine Scientist, The Elkhorn Marine Conservancy, EMC); JW: Jenny Weitzman (Research Scientist, Centre for Marine Applied Research (CMAR)); RH: Ryan Horricks (Research Scientist, CMAR); GR: Gregor Reid (Director, CMAR); LLM: Leah Lewis-McCrea (Research Manager, CMAR); DD: Danielle Dempsey (Research Scientist, CMAR); NT: Nicole Torrie (Field Technician and Data Analyst, CMAR); AV: Alexandra Vance (Whale Sanctuary Project)

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/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.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.

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

South House Sexual and Gender Resource Centre: <https://southhousehalifax.ca/about/>

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>