

Faculty of Science Course Syllabus
Department of Biology
BIOL 3063.03 / MARI 3063.03
Resource Ecology
Winter term

Instructor(s): Heike Lotze (Heike.Lotze@dal.ca), LSC 7045/47

Lectures: Two hours per week

Tutorials: Two hours per week

Course Description

This class considers the ecology, utilization, and management of natural resources in fisheries, wildlife and forest management, agriculture and aquaculture. Topics include population dynamics, community interactions, and ecosystem support of resources as well as the history of resource utilization, practices of controlling production, pests, and predators, and sustainable management strategies.

Course Prerequisites

BIOL 2060.03, MATH 1000.03 (or MATH 1215 or STAT 1060.03 or DISP)

Course Objectives/Learning Outcomes

Content:

- Define living natural resources
- Describe the history of exploitation in terrestrial, marine and freshwater living resources
- Summarize the current state of global fisheries, wildlife, forestry, agriculture and aquaculture
- Explain the fundamental principles and ethics of resource management and conservation
- Outline how to monitor and assess the distribution and abundance of resource populations
- Identify environmental factors and biological interactions that influence resource abundance
- Identify how species diversity, food-webs and ecosystems influence resource abundance
- Point out the influence of economic and social factors on natural resources
- Assess practices of controlling resource production, pests, and predators
- Point out the range of human impacts on natural resources
- Recommend management strategies that foster sustainability

Skills:

- Produce an independent project researching the biology, population status, exploitation history, management and conservation of a resource species
- Compose an oral presentation summarizing the independent research project
- Write a formal scientific briefing to inform a politician/manager about a resource species in question
- Generate a formal population/stock assessment using different population growth models and assessment methods
- Produce a stakeholder statement and defend it in a stakeholder debate

Course Materials

There is no textbook, but lectures and tutorial materials will be available on Brightspace.

Course Assessment

Component	Weight (% of final grade)	Date
Midterm exam	15%	<i>tbd (in class)</i>
Final exam	35%	<i>(Scheduled by Registrar)</i>
Assignments		
- Stakeholder debate	5%	<i>tbd (in tutorial)</i>
- Stock assessment	6%	<i>tbd (in tutorial)</i>
- Food choice	10%	<i>tbd (in tutorial)</i>
- Resource use assessment	4%	<i>tbd (in tutorial)</i>
Other course requirements		
- Oral Scientific Briefing	12.5%	<i>in tutorial, different dates for each student</i>
- Written Scientific Briefing	12.5%	<i>different dates for each student</i>

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

All assignments have a strict deadline; late assignments will get a lower mark. Missed assignments and exams will count 0%. In case of illness, a doctor's note is needed and the exam/assignment can be repeated. The content of weather-related cancelled classes will be integrated into the following lectures in abbreviated form; only topics presented and discussed in class/tutorial will be tested in exams.

Course Content

- 1 – Introduction
- 2 – Ethics of resource use
- 3 – Terrestrial mammals
- 4 – Resource management
- 5 – Whales & Whaling
- 6 – Conservation & Recovery
- 7 – Other marine mammals
- 8 – Monitoring & Assessment I
- 9 – Marine fish
- 10 – Stock assessment II
- 11 – Reptiles & Amphibians
- 12 – **MIDTERM**
- 13 – Diadromous & Freshwater fish
- 14 – Aquaculture
- 15 – Invertebrates

- 16 – Ecosystem consequences
 - 17 – Wild birds
 - 18 – Economy, Social & Market forces
 - 19 – Wild plants
 - 20 – Land-use & Habitat management
 - 21 – Forestry
 - 22 – Agriculture
 - 23 – Pest control & Pollution
 - 24 – Future of resource use
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University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of 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.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.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.

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

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

Statement: <http://www.dal.ca/cultureofrespect.html>

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 (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

https://www.dal.ca/academics/important_dates.html

University Grading Practices

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

Missed or Late Academic Requirements due to Student Absence (policy)

https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

Student Resources and Support**Advising**

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

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

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

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

Academic supports

Library: <https://libraries.dal.ca/>

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

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

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

Fair Dealing Guidelines <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

Other supports and services

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

Student Advocacy: <https://dsu.ca/dsas>

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

Safety

Biosafety: <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

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

Radiation Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

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