

Faculty of Science Course Syllabus**Department of *Biology******MARI 3090******Marine Mammalogy******Winter 2017*****Instructor(s):** Hal Whitehead/Tonya Wimmer / Damian LidgardHal.Whitehead@dal.ca / twimmer@dal.ca / dlidgard@dal.ca**Lectures:** MWF 435-525pm

Location: LSC 242

Laboratories: N/A**Tutorials:** N/A

Submit course syllabus to your Depart office for posting on the Dept website prior to the start of term
Submit requests for final exam exemptions to the Dean's office at least 2 weeks prior to the start of term

The following information should be included, as a minimum, in every course syllabus.

Course Description

The course will examine the characteristics that mammals brought with them when they returned to the ocean, the evolution of the different groups of marine mammals, some of their special adaptations, the roles of marine mammals in oceanic ecosystems and general principles of marine mammal population biology. Students will use information on the biology of marine mammals to explore conservation/management issues.

Course Prerequisites

BIOL 2060.03 (or BIOA 3001.03)

Course Objectives/Learning Outcomes

Student learning outcomes that are covered by this course.

1. Describe the differences and similarities between marine and terrestrial mammals and their relative ecological importance (1, 2, 4, 5; tagwords: adaptation, animal, Animal Behaviour, biodiversity, diversity, terrestrial, vertebrate, marine mammals, communities, connectivity, ecosystems, populations, conservation, taxonomy, Natural Selection, niche, ecology, food webs, habitat, function, conservation, management)
2. Understand the origins, taxonomic diversity, structure and ecological importance of the marine mammal orders and families (1, 2, 4; tagwords: adaptation, animal, Animal Behaviour, biodiversity, Fossil Record/Paleontology, evolution, diversity, vertebrate, marine mammals, communities, connectivity, ecosystems, populations, conservation, taxonomy, Natural Selection, niche, ecology, food webs, habitat, function, conservation, management)



3. Recall the general biology of marine mammal taxa (tagwords: adaptation, animal, Animal Behaviour, biodiversity, marine mammals, communities, connectivity, ecosystems, populations, conservation, taxonomy, Natural Selection, niche, ecology, food webs, habitat)
4. Understand the meaning of life history and the life history characteristics of cetaceans and pinniped and the factors that shape their evolution (1, 2, 8; tagwords: adaptation, animal, Animal Behaviour, Fossil Record/Paleontology, marine mammals, sexual selection, reproduction, life history, populations, ecology, function, conservation, physiology, morphology, Field Methods, observation, sampling, surveys)
5. Understand how marine mammal abundance is measured and the significance of life history parameters in population dynamics and have a basic understanding of the factors which contribute to the formation of new colonies (1, 7, 8; tagwords: animal, Animal Behaviour, marine mammals, Sexual selection, reproduction, life history, populations, ecology, hormones, Field Methods, observation, sampling, surveys)
6. Understand how social systems have evolved, the types of social systems in marine mammals and the evolution of mating strategies as an example of a social system Describe the influence of social structure on vocal categories (1, 2, 4; tagwords: animal, Animal Behaviour, anthropogenic impact, marine mammals, field methods, observation, sampling, surveys, Sexual selection, reproduction, life history, populations, ecology, communities, connectivity, ecosystems, populations, conservation)
7. Basic understanding of sound propagation in water, fundamental sound component analysis (e.g. amplitude, frequency), sound production and receiving mechanisms in various marine mammal taxa and the impacts harmful sound can have on populations (3, 5, 7, 9; tagwords: adaptation, animal, Animal Behaviour, anthropogenic impact, biotechniques, marine mammals, conservation, physiology, morphology, function, disturbance, human impacts, conservation, management)
8. Basic understanding of optimal foraging theory, the pros and cons of dietary techniques for estimating diet and the importance of the development of new technologies (1, 2, 4; tagwords: adaptation, animal, Animal Behaviour, biotechniques, marine mammals, Field Methods, observation, sampling, surveys, communities, ecosystem, food web, populations, Physiology, morphology, function)
9. Being aware that science, law and politics play an important role in the conservation and management of marine mammals, threats they face and mitigation options (3, 5, 7, 9; tagwords: animal, Animal Behaviour, anthropogenic impact, marine mammals, conservation, ecology, populations, communities, disturbance, human impacts, conservation, management, historical background, sustainability, extinction)
10. Basic understanding of the concepts and role genetics plays in conservation of marine mammals (1, 2, 4; tagwords: adaptation, animal, Animal Behaviour, anthropogenic impact, biodiversity, biotechniques, Genetics, heredity, phylogeny, forensics, conservation, DNA, Field Methods, sampling, pedigree, evolution, reproduction,

conservation, diversity, molecular evolution, marine mammals, field Methods, observation, sampling, surveys)

11. Understanding the evolutionary physiological adaptations in marine mammals to adapt to diving, cold and swimming (1, 2, 4; tagwords: adaptation, animal, Animal Behaviour, anthropogenic impact, marine mammals, physiology, morphology, function)
12. Evaluate scientific data, opinions and theories with respect to a scientific or conservation questions (6, 10; tagwords: data interpretation, scientific writing, report, observations, science communication, marine mammals)

Course Materials

No supplementary materials

Course Assessment

Include dates and times for all tests, quizzes and exams, including lab exams. If appropriate, include due dates for assignments.

NOTE: An exemption is required if you are not planning to hold a final exam scheduled by the Registrar's Office for the final exam period. Submit your syllabus along with your request (**and reason for the request**) to the Assistant Dean (scieasst@dal.ca) at least 2 weeks prior to the start of classes.

Component	Weight (% of final grade)	Date
Midterm exam	20%	February 17 th
Final exam	20%	In Class, April 10 th
Paper Outline	10%	January 25 th
Final paper	30%	March 1 st
Presentation	15%	March 31 st – April 7 th
Participation	5%	March 31 st – April 7 th

Other course requirements

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 must be submitted to BBlearn (as a PDF) by 4:30 p.m. on the due date. If the assignment is late, you should hand it in to either professor or a teaching assistant during class, or put in professor's

mailbox in the Biology Department office. 10% will be taken off for each day late until the assignment is handed back in class, after which a 0 will be given (except for legitimate medical reasons, with note from doctor). If you're not going to be able to hand in assignment on the day it's due or attend an exam, email or call one of the professors immediately prior to the deadline/exam date to make alternative arrangements (if excuse is valid). A doctor's note must be presented as soon as you return to class. If you are late and hand your assignment into one of our mailboxes, be sure to have someone in the main Biology office stamp your assignment with the date and time.

Course Content

Introduction to assignments & marine mammals
Diversity, Ecology, Conservation and Biology of Marine Mammals
Species specific content
Marine Mammal necropsy

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

COPYRIGHT

All members of the Dalhousie community are expected to comply with their obligations under Canadian copyright law. Dalhousie copyright policies and guidelines, including our Fair Dealing Guidelines, are available at <http://www.dal.ca/dept/copyrightoffice.html>. Copyright questions should be directed to the Copyright Office at copyright.office@dal.ca.

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