



Appledore Island, Isle of Shoals, Kittery, Maine
t: 603.964.9011 • shoals.lab@unh.edu • shoalsmarinelaboratory.org

Shoals Marine Laboratory
Marine Mammal Biology (BIOSM 3450/MEFB 535)
7 June – 2 July 2021

Course Syllabus and Schedule

Part I: COURSE INFORMATION

Faculty: Dr. Nadine Lysiak, Suffolk University (Boston, MA)
Email: nlysiak@suffolk.edu
Office Hours: By appointment, through Zoom

Prerequisites: Completion of first year of college
Enrollment: 18
Credit hours: 3.0 (3450) or 4.0 (535)

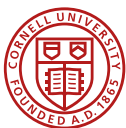
Course Description

This online course will explore the biology and conservation of the whales and seals, with a particular focus on species of the Gulf of Maine. Presentations, projects, and assignments will examine many facets of marine mammal science including: taxonomy and species diversity, morphological and physiological adaptations for life in the sea, foraging ecology and behavior, reproductive cycles, bioacoustics, conservation and health, anthropogenic interactions, and management of threatened species. Multimedia presentations of whale and seal behavior, anatomy, and physiology will simulate a hands-on approach to study marine mammals in the field. Presentations from guest scientists who are active in the research and conservation of marine mammals will supplement course activities.

Textbook & Course Materials

All course and reading materials will be provided electronically, via Canvas. For students who wish to purchase textbooks in hard copy, we will rely heavily on the following materials:

1. *An Introduction to Marine Mammal Biology & Conservation*, 1st Edition. E.C.M. Parsons (2013)
ISBN: 978-0-7637-8344-0
2. *Return to the Sea, The Life and Evolutionary Times of Marine Mammals*, A. Berta (2012)
ISBN: 978-0-5202-7057-2
3. *Deep Thinkers: Inside the Minds of Whales, Dolphins, and Porpoises*, J. Mann, ed. (2017)
ISBN: 978-0-2263-8747-5



Cornell University



**University of
New Hampshire**

Course Structure

Our online week begins on Monday and ends on Sunday. This course is designed to provide an online experience, including both **synchronous** (*things are happening live, at the same time*) and **asynchronous** (*things are happening at different times*) activities. Class sessions will be a blend of self-paced and group activities using Canvas and embedded tools. Activities will consist of multimedia presentations, readings, discussions, individual and group projects, quizzes, and reflections. The typical weekly course schedule is listed below; **synchronous activities are highlighted in red.** **Other deadlines** denote asynchronous activities.

Mondays: Weekly module opens @ 9:00 AM, all asynchronous activities available

Tuesdays: **Synchronous activity @ 7:30 PM: Shoals Live Stream ("Rock Talk")**
<https://www.shoalsmarinelaboratory.org/rock-talks>

Wednesdays: **Synchronous group work & class discussion time (10:00 AM – 12:00 PM)**
Discussion board posts (if applicable) due @ 11:59 PM

Thursdays: [optional] **Synchronous co-working time (10:00 AM – 12:00 PM)** this is a virtual, informal working or Q & A session with your peers and professor
Group assignment (if applicable) due @ 11:59 PM

Fridays: **Synchronous activity @ 10:00 AM: weekly quiz**
Individual assignment (if applicable) due @ 11:59 PM

Sundays: **Replies to discussion posts (if applicable) due @ 11:59 PM**

Note: periodically, we will have special guest speakers join the class. **Additional synchronous meetings** may be added to our schedule, depending on guest availability.

Synchronous activities will be hosted in Zoom and **asynchronous activities** and **assignments** will be completed online using Canvas. The instructor is available during business hours (Mon-Fri, 9/5; and additional times by appointment) for one-on-one Zoom meetings (a.k.a. virtual office hours) throughout the course.

Course Requirements

- Computer, tablet, or other electronic device
- Reliable internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas & email
- Supported, updated web browsers (Firefox, Chrome, or Safari)
- External webcam or internal video and audio capabilities
- Nice to have: printer, if you prefer to have readings in hard copy
- Backup plan if technology fails

Course participants are provided with a module outline and are given a number of opportunities to engage and participate in the activities outlined in each weekly lesson. **You will learn best when keeping pace with the class, following the course/module outlines, and completing the necessary readings and assignments by the designated due date.** It is recommended that you log into the course *at least 5 times* during the week. Assignments are generally due on Wednesdays and Sundays and quizzes are administered on Fridays. Some modules include an additional group or individual assignment – which are due on Thursdays (group work) or Fridays (individual work). Be sure to read your email for up-to-date announcements and changes that need to be made to the schedule.

Level of Technical Skill Expected/Required

Participants should be able to navigate the Canvas learning management system (LMS) and the internet, watch online videos, and upload items such as images and documents. The Orientation to the Course video will offer guidelines for navigating the course. (See technical assistance below for more information.)

Technical Assistance

If you need technical assistance at any time during the course, or to report a problem with Canvas you can:

- Visit the [Canvas Getting Started Guide](#)
- Contact the [UNH IT Service Desk](#)

PART II: COURSE GOALS

Upon completing this course, students will understand:

- 1) The characteristics of marine mammals, specifically how they are uniquely adapted for life in the ocean.
- 2) The prevailing research methods and technologies used to study marine mammals, through a critical examination of scientific literature
- 3) The ecological role(s), biotic, and abiotic interactions of marine mammals in aquatic ecosystems
- 4) The history of human-marine mammal interactions, and how this legacy informs modern-day conservation and management of threatened populations
- 5) The social perceptions of direct human interaction(s) with marine mammals are rapidly evolving

PART III: CONTENT OVERVIEW

Module	Topic	LEARNING OBJECTIVES Upon completion, participants should be able to:
	Pre-Course Orientation	<ul style="list-style-type: none">- Judge their readiness for taking an online course- Access online learning materials- Form a virtual learning community- Identify some of the challenges and opportunities associated with online learning
1 Week 1	Where are we? Introduction to the Gulf of Maine & Isles of Shoals	<ol style="list-style-type: none">1. Differentiate the ocean circulation patterns in the Gulf of Maine2. Compare major zones of the coastal ocean and intertidal ecosystems3. Identify common taxonomic groups and their roles in a marine food web4. Summarize the human history of Appledore Island and the Isles of Shoals
2 Week 1	What is a marine mammal?	<ol style="list-style-type: none">5. Distinguish the evolutionary history of the three marine mammal groups6. Explain the general characteristics of the three marine mammal groups7. Recall the taxonomy of marine mammal Orders, Suborders, & Families8. Communicate facts about one unique species of marine mammal to their peers
3 Week 2	How are marine mammals uniquely adapted for life in the ocean?	<ol style="list-style-type: none">9. Associate the physical characteristics of the ocean to specific marine mammal adaptations10. Discuss the external and internal anatomy of one marine mammal group11. Recognize the adaptation to the organ systems of marine mammals, distinguishing them from other terrestrial mammals12. Explain how each group of marine mammals locomotes13. Differentiate the processes of heat and water balance in marine mammals
4 Week 2	What "extreme" physiologies have evolved in marine mammals?	<ol style="list-style-type: none">14. Associate extreme diving ability of marine mammals to cardiovascular system adaptations15. Contrast the mechanisms for sound production and reception in marine mammals16. Differentiate the structure and function of tonal vs. impulsive vocalizations17. Identify features of organisms with high cognitive function18. Critique the hypothesis that some marine mammal species have self-awareness
5 Week 3	Ocean farmers and ecosystem sentinels: the ecological roles of marine mammals	<ol style="list-style-type: none">19. Compare the methods of marine mammal population monitoring & behavioral studies20. Analyze photographs of whales and seals related to population monitoring21. Identify the generalized cycles of whale and seal reproductive cycles22. Explain the social structure in representative marine mammal populations23. Differentiate the foraging strategies in various groups of marine mammals

6 Week 4	It's complicated: the past, present, and future of human-marine mammal interactions.	24. Discuss historical and modern examples of direct harvest on global marine mammal populations 25. Identify and explain the three laws that protect marine mammals along the US coastline 26. Explain the primary sources of anthropogenic mortality to marine mammals around the world 27. Investigate a conservation issue and propose a solution(s) for a specific marine mammal population
7 Week 4	Marine mammals ashore: why do some leave the ocean?	28. Categorize different types of marine mammal stranding events 29. Explain the significance of stranding response and diagnostic necropsy to marine mammal science 30. Evaluate the ethical positions related to marine mammal captivity

PART IV: COURSE COMPONENTS

Strategies for Success

Log into Canvas each Monday to **read through the list** of resources and activities associated with the weekly Module(s). **Set a weekly schedule** so that you are prepared to do readings before discussions, respond and reply to discussion questions and complete other activities by the due date. Post questions regarding schedule, deadlines, discussions, or assignments to the public **Q & A Forum**, so that all students can benefit from seeing the answer to your question.

Discussion Board Questions

There will be at least one discussion question related to the assigned readings for most Modules. Participants will post their answers to the discussion question by 11:59 PM on Wednesday and respond to your peers by Sunday, 11:59 PM. Be sure to look at the specific directions for each discussion question. It is wise to log into the course at least 5 times a week so that you **remain actively engaged** with the new material as frequent interaction with the course materials will help you retain what you are learning. Be sure to abide by the [Netiquette guidelines](#) when participating in this online course.

Discussion Board Guidelines

The Discussion Board questions provide you with an opportunity to illustrate what you have learned as a result of assigned readings, practical experiences, and research. Here are some guidelines that are designed to help you get the most out of this learning experience:

1. Before posting your initial answer to the Discussion Forum, be sure to read and reflect on all of the material assigned. When appropriate, be sure to read prior posts before adding your response.
2. Your responses should reflect both what you have learned presently and in the past.
3. When responding to your peers' posts, you may agree, disagree, expand upon for further clarification and/or bring up additional points. Responses are typically a minimum of 3 sentences, relate to the post, and relate to the topic under study. Please avoid responses such as "I agree" or "me, too;" rather, be sure to add to the conversation.
4. Always reread your response to be sure it is respectful and clear similar to the way you would when writing an email. Avoid using sarcasm, as its use can easily be misunderstood as rudeness.
5. Please model professionalism by using proper grammar and punctuation. You may find it helpful to **write your response in a word processing document and then copy it to the discussion forum**. This is a good practice to keep a back-up of your work, in case of errors during submission.

Discussion Board Rubric

The following rubric is offered as a guideline so that participants understand expectations for the discussion board. In order to earn 5 points (the maximum) for the discussion board assignment, see the grading criteria indicated to the right of the number. Note that this rubric *assumes that you will proofread your work as well as use appropriate citations*. If you have questions about this rubric, be sure to place them in the **Q & A Forum**.

Points	Interpretation	Grading Criteria
5	Exemplary (A)	Clearly demonstrates a connection between theory and practice; aware of needs of the community; frequently attempted to motivate the group discussion; presented creative approaches to the topic; prompted further discussion of topic by relating to real life experiences bringing in additional resources; offered at least 1 substantial responses to peers; answered all questions posed to own posting in a timely manner.
4	Above Average (B)	Partially demonstrated a connection between theory and practice; positively interacted with members of the online community; prompts further discussion by relating to real life experiences bringing in additional resources; offered at least 1 substantial responses to peers; answered all the questions posed to own postings in a timely manner.
3	Average (C)	Attempted to demonstrate a connection between theory and practice; positively interacted with members of the online community; offered at least 1 substantial response to peers.
2	Minimal (D)	Post had little or no evidence that learning took place as a result of this exercise; writing is based on personal opinion without reference to authorities in the field; demonstrated a misunderstanding of the connection between theory and practice
0	No Contribution (F)	
-1	APA Citations	References are not properly formatted in APA style
-1	Proofreading	Spelling, grammar, and punctuation errors indicate lack of proofreading.

Deliverables & Grading

Quizzes (30%): Four quizzes will be given during the course, on **Fridays at 10:00 AM**. The content of each quiz is inclusive of that week's learning Module(s).

Discussion Board (15%): See above for specific information about the discussion board.

Group Projects (25%): Synchronous class sessions to facilitate group work will run on **Wednesdays from 10:00 AM – 12:00 PM**. Depending on the Module, some group work will produce a final product or assignment – due on **Thursdays at 11:59 PM**. Students are expected to work together to meet for additional synchronous sessions if necessary to complete an assignment.

Individual Projects (30%): Some Modules will include individual assignments, which are due on **Fridays at 11:59 PM**. These might include written assignments, short video presentations, or data analysis products. Specific instructions will be found in the related Modules.

Letter grades will be calculated according to the following scale:

Name:	Range:				
A	100 %	to 94.0%	C	< 77.0 %	to 74.0%
A-	< 94.0 %	to 90.0%	C-	< 74.0 %	to 70.0%
B+	< 90.0 %	to 87.0%	D+	< 70.0 %	to 67.0%
B	< 87.0 %	to 84.0%	D	< 67.0 %	to 64.0%
B-	< 84.0 %	to 80.0%	D-	< 64.0 %	to 60.0%
C+	< 80.0 %	to 77.0%	F	< 60.0 %	to 0.0%

PART V: COURSE POLICIES

Attendance & Participation

To get the most out of this learning experience, **attend** all online sessions as listed on the course schedule. Attendance at class meetings and participation in activities is essential for success of the online experience. **Participate** in online discussions. It is the best way to get the most out of the experience.

Communication

Be sure to check your email on a daily basis. Course announcements are routed to your email, they are used as a way to communicate news, updates, and changes in a timely manner. Questions about the course should be communicated through the **Q & A Forum**.

Turning in Assignments

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed.

Assignments submitted by the given deadline will receive full credit. Please contact the instructor before the due date if you are requesting an extension.

Expectations, Conduct, Academic Integrity, & Accommodations

Students are responsible for fully understanding all of the information presented in this syllabus. If there are any questions regarding this information, it is the student's responsibility to bring it to the instructor's attention. In addition, students are responsible for participating in all activities associated with this course and completing all assignments. Students are responsible for asking questions anytime they need clarification (remember, there is no such thing as a bad question).

Every student is responsible for their own behavior- specifically in being respectful and collegial to other students and with instructors. Students are responsible for fully understanding and adhering all of the information presented in the SML Appledore Handbook (http://www.sml.cornell.edu/sml_forms.html)

1. *Personal Technology*. Do not use cell phones or similar devices during synchronous course activities.
2. *Transmission of Course Materials*. Students are not authorized to replicate, reproduce, copy or transmit lectures and course materials presented, or derivative materials including class notes, for sale or free distribution to others without written consent of the instructors who are the original source of the materials.
3. *Academic Integrity*. Any work submitted must be your own. Uncredited use of another person's words, data or images is considered plagiarism, a serious violation of the Code, whether the material comes from another student, a web site, or a published paper. Students must adhere to Cornell's and UNH's Policy for Academic Honesty/Plagiarism and Discrimination
 - i. Cornell: <http://cuinfo.cornell.edu/aic.cfm>
 - ii. UNH: <http://www.unh.edu/vpsas/handbook/welcome-university-new-hampshire>
4. *Disabilities & ADA Accommodation*: Students with a disability must contact Cornell's (420 CCC building; 607-254-4545) or UNH's Student Disability Services (<http://www.unh.edu/disabilityservices>) prior to start of class for confidential discussion of needs and for registration to verify eligibility for academic accommodations. No retroactive accommodations can be made.
5. *Mental Health*: Shoals Marine Laboratory cares about you and your well-being. If you experience unusual personal or academic stress during the course or need to talk with someone about a personal problem, seek support from your instructor or the Shoals Academic Coordinator as soon as possible.

Important Note: Any adjustments made to the course outline will be made to benefit learning. Such changes will be posted in Canvas and clearly noted in the course Announcement section or through your email.