

**BIO 240A – Introduction to Marine Mammals  
Fall 2019 Syllabus**

**Instructor Information**

**Instructor:** Dr. Nadine Lysiak

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**Phone:** 617-305-6352

**Office:** Samia Academic Building [20 Somerset], Room 627

**Office Hours:** Wednesdays 2:30-4:30 PM, or by appointment

**Course Information**

**Meetings:** Wednesdays, 5:30-8:30 PM

**Location:** Samia Academic Center, Room 217

**Catalog Description:** This course explores the biology and natural history of marine mammals, including cetaceans, pinnipeds, and sirenians, with a particular focus on species endemic to the North Atlantic. Topics include evolution, anatomy, physiology, behavior, ecology, field identification, the history of whaling and sealing, and contemporary management and conservation issues. Hands-on activities include a whale watch in Massachusetts Bay.

**Suffolk Prerequisites:** BIO-111, BIO-L111, BIO-114, and BIO-L114

**MSC Prerequisites:** 1 year of college biology

**Credit Hours:** 4.0

*This course follows the Federal Government's Credit Hour definition. For more information regarding the definition, please see the Suffolk University Syllabus webpage:*

*[www.suffolk.edu/syllabus](http://www.suffolk.edu/syllabus).*

To complete this course, students will need to dedicate, at a minimum, the following amount of time to the listed activities:

<b>Assignment/Activity</b>	<b>Engagement Estimate</b>	<b>Engagement Hours</b>
Secondary Source Reading	8 minutes x 321 pages	43
Primary Source Reading	10 minutes x 130 pages	37
Reviewing Lecture Notes	30 pages/lecture x 10 lectures x 5 minutes/page	25
Species Presentation Assignment	8 hours	8
Research Proposal Assignment	10 hours	10
Case Studies Assignment	8 hours	8
Exam Preparations	8 hours x 2 exams	16
Whale Watch Field Trip	4 hours	4
Class Attendance	3 hours x 12 weeks	36

**Total:**

**187 engagement hours**

### Textbook/Course Materials

Students are welcome to purchase course text as a reference book, but electronic copies of required reading will be provided at no cost via the course website. In addition to the textbook listed below, primary research literature will be posted on the course website. Students should be prepared to discuss these readings in class. For success in lecture, please read the assigned text *BEFORE* you come to class, and be prepared with questions for class if you do not understand concepts covered in the text.

**Textbook:** *An Introduction to Marine Mammal Biology & Conservation*, 1<sup>st</sup> Edition. E.C.M. Parsons (2013) ISBN: 978-0-7637-8344-0

**Course Website:** Google Drive, look for an invitation from instructor via email

### Poll Everywhere

We will be using the Poll Everywhere classroom response system ([www.polleverywhere.com](http://www.polleverywhere.com)). You will be able to submit answers to in-class questions using smartphones, tablets, laptops, or through text message.

### Course Goals & Learning Objectives

GOALS	OBJECTIVES	ASSESSMENTS
Upon successful completion of this course, students should be able to know/understand:	Upon successful completion of this course, students should be able to:	How the student will be assessed on these learning objectives:
<b>Understand the diversity of marine mammal species found on Earth</b>	<ul style="list-style-type: none"> <li>Differentiate between various species and their distribution patterns</li> <li>Explain the major characteristics of each of three orders of marine mammals</li> </ul>	Exams, assignments, in class questions
<b>Understand the evolutionary history of three orders of marine mammals</b>	<ul style="list-style-type: none"> <li>Explain evolutionary trends from ancestral to derived species</li> <li>Appraise the anatomical constraints acquired from ancestral species</li> </ul>	Exams, assignments, in class questions
<b>Know the convergent adaptations that marine mammals have evolved to survive in aquatic habitats</b>	<ul style="list-style-type: none"> <li>Assess the characteristics that have evolved as marine mammal species colonized ocean habitats</li> <li>Discriminate between adaptations of semi- or fully-aquatic marine mammals</li> </ul>	Exams, assignments, in class questions

<p><b>Understand the factors that influence the distribution of marine mammal species</b></p>	<ul style="list-style-type: none"> <li>• Evaluate the physical factors of the marine environment that impact marine food webs</li> <li>• Assess how predator and prey populations influence each other</li> <li>• Appraise the factors that influence and regulate population size</li> <li>• Assess the trophic structure of various marine systems</li> </ul>	<p>Exams, assignments, in class questions</p>
<p><b>Know the major threats that commonly affect marine mammal species around the world</b></p>	<ul style="list-style-type: none"> <li>• Differentiate between natural and anthropogenic disturbances (threats) to marine mammal populations</li> <li>• Assess where and why conservation gaps exist</li> <li>• Compare management strategies for species that are protected by multiple nations</li> </ul>	<p>Exams, assignments, in class questions, group discussion</p>
<p><b>Know the laws and regulation that govern marine mammal conservation and management in the US</b></p>	<ul style="list-style-type: none"> <li>• Evaluate the anthropogenic threats to marine mammals in the context of existing US environmental law</li> <li>• Understand how these laws are affected in modern times within the US political system</li> </ul>	<p>Exams, assignments, in class questions, group discussion</p>
<p><b>Understand the techniques and technologies commonly used to study marine mammals</b></p>	<ul style="list-style-type: none"> <li>• Examine the types of tissues that can be collected from marine mammals for analysis</li> <li>• Differentiate between types of analysis of marine mammal tissue based on research objectives</li> <li>• Assess the utility of telemetry and video technology to monitor marine mammal populations</li> </ul>	<p>Exams, assignments, research proposal</p>
<p><b>Understand how to use the scientific method to better understand a marine mammal species</b></p>	<ul style="list-style-type: none"> <li>• Practice making observations and formulating questions</li> <li>• Learn how to read and interpret primary literature, including figures and tables</li> <li>• Synthesize ideas through writing activities</li> </ul>	<p>Exams, assignments, research proposal</p>

## Assessments

Students will be evaluated in the following areas: Attendance & Participation (24%), Exams (32%), Assignments (24%), Research Proposal (20%)

**Attendance (12%) & Participation (12%):** You are expected to attend class. 12% of your grade will solely be based upon the percentage of days you attend class. Poll Everywhere records your attendance daily. You are expected to respond to in-class questions through Poll Everywhere. These questions include both open ended discussion and multiple choice questions.

**Exams (32% total):** You will be given 2 lecture exams. Each of these exams is worth 16% of your grade. As illustrated by the course schedule, each exam will cover 4-6 chapters of material. As such, you can expect to study at least 8 hours total for each exam, in addition to normal class readings. There is occasional extra credit offered on exams.

**Assignments (24% total):** You will complete three major assignments during the semester, each worth 8% of your grade.

**1) Species Fact Sheet:** each student will randomly select a species to investigate further. They will create a 1-page Fact Sheet that gives important information about habitat, diet, threats, and interesting facts about their species. Students will give short oral “speed talks” about their species.

**2) Case Study Assignment:** You will watch a series of marine mammal documentaries and complete a written assignment to synthesize what you learned in the films.

**3) Ethics Group Debate:** Students will be broken up into groups and assigned “roles” in a debate about an ethical question in marine mammal science (i.e., whaling, captivity, etc). Students will be assigned a person to play in the debate and they must then research this person and develop arguments and evidence to compel a point of view.

**Research Proposal (20%):** Each student will formulate a research question of their choosing and develop a written research proposal that they could submit to a funding agency. The research proposal will give information on the background of the species or system that is to be investigated, clearly outline the research question and plan of study, explain technology to be used, outline a plan for data analysis, and provide context for the broader significance of the work.

## Grading

Your grades will be calculated according to the scale at right:

All assignments and written work are due at **5:30 PM** on the stated deadline. Assignments will be accepted in hard copy or electronically via email to [nlysiak@suffolk.edu](mailto:nlysiak@suffolk.edu). All files for email submission should be named as follows: *LastName\_FirstName\_AssignmentName.extension*  
For Example: **Lysiak\_Nadine\_VideoAssignment.docx (or .pdf, .doc)**

Late submissions will be **penalized**. For every 12 hours that an assignment is late, 10% will be deducted from your final grade on that item.

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**Grade Ranges**

Percentage Range (%)	Letter Grade
93-100	A
90-92	A-
86-89	B+
83-85	B
80-82	B-
76-79	C+
73-75	C
70-72	C-
66-69	D+
63-65	D
60-62	D-
Below 60	F

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**Course Policies**

*\*\*Members of the class will work with the professor to draft an agreement of course behavioral expectations and community values. This policy will be distributed to students via email as an addendum to this syllabus.*

**Suffolk University Syllabus Policies**

This this course adheres to policies and procedures that apply to all Suffolk courses with regard to disability accommodation, academic misconduct, academic grievance, attendance, and credit hour compliance. The university policies can be found here: [www.suffolk.edu/syllabus](http://www.suffolk.edu/syllabus).

**Marine Studies Consortium Policies**

All students are expected to follow the stated honor code of their home university. Any instances of academic dishonesty or plagiarism will be prosecuted according to university protocol. Any students with disability accommodations should identify themselves to the professor at the first course meeting.

**Course Cancellations**

Class will not meet on **November 13**.

Students are expected to make up the missed time to ensure that the class meets federal government credit hour requirements. To make up that time, you will watch a series of documentary films about marine mammals [a.k.a. Case Studies] and complete a written assignment that summarizes these films. Please see the Course Schedule section below with details regarding assignments that are scheduled for days on which class will be cancelled.

In the event that the university cancels classes, such as for severe weather, students are expected to continue with readings as originally scheduled. Any assignments scheduled during

those missed classes, such as an exam or paper, are due at the next class meeting unless other instructions are posted at the course website or communicated via email.

### Student Resources

The university provides a range of academic, counseling, medical and administrative student support services. To learn more, explore this webpage: [www.suffolk.edu/syllabus](http://www.suffolk.edu/syllabus)

### Course Schedule

The schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better student learning.

Week & Date	Topic	Reading Assignment/Other Assignment
1 – Sept 4	Introduction, Species Diversity, & Evolution	Ch 1 & 2 Introduce Species Fact Sheet
2 – Sept 11	Anatomy & Physiology I- Skeletons & Locomotion	Ch 4 <b>Species Fact Sheet Due</b>
3 – Sept 18	Anatomy & Physiology II – Organ Systems & Diving	Ch 4
4 – Sept 25	Sound Production, Reception, & Communication	Ch 5
5 – Oct 2	<b>Exam #1</b>	
6 – Oct 9	Foraging Ecology & Behavior I – Baleen & Toothed Whales	Ch 10-12
7 – Oct 16	Foraging Ecology & Behavior II – Pinnipeds, Otters, & Manatees	Ch 6 - 9
8 – Oct 23	Reproduction & Behavior	Ch 6-12
9 – Oct 30	Techniques in Marine Mammal Research	Appendix Introduce Research Proposal
10 – Nov 6	Human Interactions, Conservation & Management	Ch 13, 15, 16, 17 Introduce Ethics Group Debate
11 – Nov 13	Case Studies <b>No Class Meets @ Suffolk</b>	Watch videos and complete Case Studies Assignment
12 – Nov 20	Marine Mammal Harvests, Ethics Group Debate & Discussion	Ch 14, 15, 16 <b>Case Study Assignment Due</b> <b>Ethics Debate Assignment Due</b>
13 – Nov 27	<b>Thanksgiving Holiday – No class</b>	
14 – Dec 4	<b>Exam #2</b>	<b>Research Proposal Due</b>

**Course Policies – Syllabus Addendum**

The following course policies were developed collaboratively by students and instructor on 09/04/19.

- Come to class prepared in order to be able to participate
- “Speak up” (embolden yourself to share your ideas with the class)
- “Just ask” (don’t be embarrassed to ask questions when they occur)
- Avoid disruptions: talking loudly with your neighbor is distracting to others
- Limit technology use to class-related activities
- Step outside the classroom to use your phone/text
- Silence cell phones while in class