

**COURSE SYLLABUS  
BIOLOGY OF MARINE MAMMALS  
OCB-4303**

**GENERAL INFORMATION**

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**PROFESSOR INFORMATION**



**Instructor:** Dr. Jeremy Kiszka      **Phone:** (305) 919-4104

**Office:** Biscayne Bay  
Campus, Marine  
Science Building  
(room 250 D)

**Office Hours:** By appointment      **Email:** jkiszka@fiu.edu

**COURSE DESCRIPTION AND PURPOSE**

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This course will provide an understanding of a charismatic group of species, i.e. marine mammals (cetaceans, pinnipeds, sirenians, sea otters and polar bear), including evolutionary biology, physiology (locomotion, diving, thermoregulation, osmoregulation), ecology (foraging/feeding behavior, distribution and habitat use), conservation and management. This course is an important upper division offering for Biology and Marine Biology majors. For Biology, it is one of the few courses that fills the Organismal Diversity category of required courses.

**COURSE OBJECTIVES**

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The goals of this course are to provide a broad overview on the biology of marine mammals. Students will understand the evolution and systematics of this group as well as gain a functional knowledge of their anatomy and physiology. They will also learn about the behavior, ecology and population biology of marine mammals and understand the relevant theoretical underpinnings of these disciplines. The broader outcome of this course will be training student to read, interpret and synthesize scientific literature on specific topics.

**MAJOR & CURRICULUM OBJECTIVES TARGETED**

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There are no listed Major & Curriculum Objectives targeted by this particular course. Should you have any questions, please contact the professor.

**TEACHING METHODOLOGY**

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This is an online course in which all of the instructional materials and activities are delivered through Canvas, and/or other internet-based media. Should you have any questions, please contact the professor.

## IMPORTANT INFORMATION

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### POLICIES

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Please review the [FIU policies page](#) as it contains essential information regarding guidelines relevant to all courses at FIU and additional information on the standards for acceptable netiquette important for online courses.

### TECHNICAL REQUIREMENTS/SKILLS

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One of the greatest barriers to taking an online course is a lack of basic computer literacy. By computer literacy we mean being able to manage and organize computer files efficiently, and learning to use your computer's operating system and software quickly and easily. Keep in mind that this is not a computer literacy course; but students enrolled in online courses are expected to have moderate proficiency using a computer. Please go to the "[What's Required](#)" page to find out more information on this subject.

Please visit our [technical requirements page](#) for additional information.

### ACCESSIBILITY AND ACCOMMODATION

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The Disability Resource Center collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The DRC provides FIU students with disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact the Center at 305-348-3532 or visit them at the Graham Center GC 190.

Please visit our [ADA Compliance](#) webpage for information about accessibility involving the tools used in this course.

Please visit [Blackboard's Commitment Accessibility](#) webpage for more information.

For additional assistance please contact FIU's [Disability Resource Center](#).

### COURSE PREREQUISITES

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This course has prerequisites: BSC 1010 and 1011 and PCB 3043 or OCB 3043.

Review the [course catalog page](#) for prerequisites information.

### PROCTORED EXAM POLICY

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This course does not require any on-campus or proctored exams.

Through a careful examination of this syllabus, it is the student's responsibility to determine whether this online course requires proctored exams. Please visit our [Proctored Exam Resources](#) webpage for important information concerning proctored exams, proctoring centers, and important forms.

## TEXTBOOK

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No textbook required.

## EXPECTATIONS OF THIS COURSE

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This is an online course, which means all of the course work will be conducted online. Expectations for performance in an online course are the same for a traditional course. In fact, online courses require a degree of self-motivation, self-discipline, and technology skills which can make these courses more demanding for some students.

### Students are expected to:

- Review the how to get started information located in the course content
- Take the practice quiz to ensure that your computer is compatible with Canvas
- Read all lectures (including videos) and read all references that are provided (it will be useful for the final exam)
- Review and follow the course calendar
- Submit assignments by the corresponding deadline

Class Materials Location: there will be detailed documents available in Canvas for each assignment, such as essays and quizzes. Since these materials will always be available to you, you are responsible for them.

## COURSE DETAILS

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### COURSE COMMUNICATION

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Communication in this course will take place via **Messages**.

Messages is a private and secure text-based communication system which occurs within a course among its Course members. Users must log on to Canvas to send, receive, or read messages. The Messages tool is located on the Course Menu, on the left side of the course webpage. It is recommended that students check their messages routinely to ensure up-to-date communication.

Visit our [Writing Resources webpage](#) for more information on professional writing and technical communication skills.

### DISCUSSION FORUMS

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Keep in mind that your discussion forum postings will likely be seen by other members of the course. Care should be taken when determining what to post.

## ASSESSMENTS

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In order to mitigate any issues with your computer and online assessments, it is very important that you take the "Practice Quiz" from each computer you will be using to take your graded quizzes and exams. It is your responsibility to make sure your computer meets the minimum [hardware requirements](#).

Assessments in this course are not compatible with mobile devices and should not be taken through a mobile phone or a tablet. If you need further assistance please contact [FIU Online Support Services](#).

- There will be two quizzes and one final exam.
- The first quiz will be available during Week 11 and the second quiz will be available during Week 13. The final exam will be available during final exams week.
- Specific dates and details will be available in the Assessments page in Canvas, accessible through the course menu.

Please note that the following information only applies if your course requires the use of the Respondus LockDown Browser to take assessments.

- Review the [Respondus LockDown Browser Instructions](#) on how to install, access your assessments and view your grades.
- After installing the browser, please take the Practice Quiz to familiarize yourself with the testing environment and to ensure that you have downloaded the Respondus Lockdown Browser correctly.

## ASSIGNMENTS

There will be three cyber essays and one midterm paper.

### **Cyber essay:**

- Essays will be due on Sundays at midnight.
- Each essay is worth 5%, for a total of 20% of the final course grade.
- For all essays, you must use Times New Roman, 12-point font.
- Please note the length of each essay and the number of references required for each, as they are not all the same.
- Essays should be submitted through the Assignment Dropbox page in Canvas, accessible through the course menu.

Topic	Details	Due Date
<p>What are the drivers of the decline of the vaquita (<i>Phocoena sinus</i>) in the Gulf of California? What are the management actions being currently undertaken to save this species?</p>	<ul style="list-style-type: none"> <li>• Between 15 and 20 lines (not sentences)</li> <li>• Supported by up to 3 peer-reviewed scientific publications (cite references in the text and list them at the end of your essay)</li> <li>• <u>Tip</u>: use Google Scholar to find references! Same for the other essays and the midterm!</li> </ul>	<p>September 2<sup>nd</sup>, 11:59pm</p>
<p>The common dolphin (<i>Delphinus delphis</i>) was an abundant cetacean species in some areas of the Eastern Mediterranean, particularly in the Ionian Sea. What are the factors that have caused the decline of this species? Based on scientific papers (including the last reading assignment you had), why do you think the common dolphin was more susceptible to decline than other species of cetaceans from this region, such as the bottlenose dolphin? You need to make sure you review a number of scientific papers to find the answer to this question!</p>	<ul style="list-style-type: none"> <li>• Between 20 and 25 lines (not sentences)</li> <li>• Use only scientific papers as references (up to 4).</li> </ul>	<p>October 21<sup>st</sup>, 11:59pm</p>
<p>Drones (Unmanned Aerial Vehicles) have a wide range of applications, including for wildlife population assessments. How drones could be used to study marine mammals? Give several examples from the scientific literature.</p>	<ul style="list-style-type: none"> <li>• Between 15 and 25 lines (not sentences)</li> <li>• Supported by up to 3 peer-reviewed scientific publications (cite references in the text and list them at the end of your essay)</li> </ul>	<p>November 25<sup>th</sup>, 11:59pm</p>

### Midterm Paper:

- The midterm paper will be a review that you will have to write.
- The midterm paper is worth 30% of the final course grade.
- The paper will have to be consistently structured, not more or less than 2 pages, single-spaced, Times New Roman 12-point font.
- You have to pick one of the following topics to write about:
  1. **Ecological roles and importance of marine mammals in aquatic ecosystems**
  2. **Biological and operational interactions between marine mammals and global fisheries**
- Up to 20 references (book chapters, scientific papers only) can be used, not less than 12. They have to be cited in the text and should be listed in alphabetical order at the end of the paper (be consistent). All your statements should be supported by references! You can cite a paper on multiple occasions.
- The paper should be turned in through the Turnitin link found in the Assignment Dropbox page.

- Review the detailed Turnitin Instructions on how to submit your assignments and how to review the Grademark comments (feedback) from your professor.

The midterm paper is due on **October 7<sup>th</sup> by 11:59pm**

**IMPORTANT:**

- Please note than late assignments will not be accepted (few exceptions)
- Essays will have to be submitted through the assignment Drop box and the mid-term paper will have to be submitted in Turnitin
- Review the detailed [Turnitin instructions](#) on how to submit your assignments and how to review the Grademark comments (feedback) from your professor.

**GRADING**

Course Requirements	Number of Items	Weight
Quizzes	2	10%
Cyber essays	4	20%
Midterm paper	1	30%
Final exam	1	40%
<b>Total</b>	<b>8</b>	<b>100%</b>

Letter Grade	Range (%)	Letter Grade	Range (%)	Letter Grade	Range (%)
A	Above 93	B-	81-83	D+	67-70
A-	91-92	C+	77-80	D	64-66
B+	87-90	C	74-76	D-	61-63
B	84-86	C-	71-73	F	< 61

## COURSE CALENDAR

### WEEKLY SCHEDULE

Date	Tasks
Week 1 Aug. 20-26	<p><b>Activities:</b> Course introduction and objectives. Diversity and zoogeography of marine mammals.</p> <p><b>Tasks and assignments:</b> Read Lecture 1 (including videos) Read paper#1 by Pyenson and Vermeij (2016)</p> <p><b><u>Complete practice quiz</u></b></p>
Week 2 Aug. 27 - Sept. 2	<p><b>Activities:</b> Evolution of marine mammals: focus on pinnipeds and cetaceans.</p> <p><b>Tasks and assignments:</b> Read Lecture 2 (including videos) Assignment#1: Cyber Essay 1 (see details in the Assignment section). Essay due for <b>September 2<sup>nd</sup>, 11:59pm</b></p>
Week 3 Sept. 3-9	<p><b>Activities:</b> Structure, locomotion, thermoregulation, osmoregulation and sensory systems in marine mammals.</p> <p><b>Tasks and assignments:</b> Read Lecture 3 (including videos)</p>
Week 4 Sept. 10-16	<p><b>Activities:</b> Sound production of marine mammals and echolocation.</p> <p><b>Tasks and assignments:</b> Read Lecture 4 (including videos) Read paper#2 by Visseur <i>et al.</i> (2016)</p>
Week 5 Sept. 17-23	<p><b>Activities:</b> Diving in marine mammals.</p> <p><b>Tasks and assignments:</b> Read Lecture 5 (including videos)</p>

Week 6  
Sept. 24-30

**Activities:**

Marine mammal feeding mechanisms and diet, foraging strategies and tactics.

**Tasks and assignments:**

Read Lecture 6 (including videos)  
Read paper#3 by Kiszka *et al.* (2015)

Week 7  
Oct. 1-7

**Activities:**

Predators and predation risk.

**Tasks and assignments:**

Read Lecture 7 (including videos)  
**Midterm paper due!** Essay due for **October 7<sup>th</sup>, 11:59pm**

Week 8  
Oct. 8-14

**Activities:**

Habitat use and preferences of marine mammals.

**Tasks and assignments:**

Read Lecture 8 (including videos)  
Read paper#4 by Heithaus *et al.* (2008)

Week 9  
Oct. 15-21

**Activities:**

Optimal diving and energetics.

**Tasks and assignments:**

Read Lecture 9 (including videos)  
Read paper#5 by Spitz *et al.* (2012)  
Assignment#2: Cyber Essay 3 (see details in the Assignment section). Essay due for **October 21<sup>th</sup>, 11:59pm**

Week 10  
Oct. 22-28

**Activities:**

Reproductive cycles of marine mammals.

**Tasks and assignments:**

Read Lecture 10 (including videos)

Week 11  
Oct. 29 - Nov. 4

**Activities:**

Life history and mating patterns of marine mammals.

**Tasks and assignments:**

Read Lecture 11 (including videos)

Take Quiz#1 (available all week until **November 4<sup>th</sup>, 11:59pm**)

Week 12  
Nov. 5-11

**Activities:**

Social structure and behavior.

**Tasks and assignments:**

Read Lecture 12 (including videos)

Read paper#6 by Gero *et al.* (2016)

Week 13  
Nov. 12-18

**Activities:**

Population biology and genetics.

**Tasks and assignments:**

Read Lecture 13 (including videos)

Take Quiz#2 (available all week until **November 18<sup>th</sup>, 11:59pm**)

Week 14  
Nov. 19-25

**Activities:**

Conservation and management of marine mammal populations.

**Tasks and assignments:**

Read Lecture 14 (including videos)

Assignment#3: Cyber Essay 4 (see details in the Assignment section). Essay due for **November 25<sup>th</sup>, 11:59pm**

Week 15  
Nov. 26 - Dec.2

***Finals week review of all lectures. Extra credit option (TBA)***

Week 16  
Dec. 3-8

***Finals week – Take Final Exam by December 8<sup>th</sup>, 11:59pm***