

## OCB 3043: Marine Biology and Oceanography Fall 2022

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### When and where

- Lectures: \_\_\_\_\_
- Office hours: \_\_\_\_\_

### Learning materials

- Recommended Text: Levinton, J.S. Marine Biology: Function, Biodiversity, Ecology, 6th Edition
- Each lecture is posted to Canvas prior to class so it can be annotated during the lecture
- Other learning materials (e.g., required papers to read) will be posted to Canvas

### Digital resources

- In-class quizzes, mid-terms, and the final will be conducted using Canvas. Therefore, **you will need a laptop/tablet (ideally) or a smartphone during every class**. Please let me know if this is a problem for you, and we can find an alternative.
- The course will use a range of features within Canvas, so please ensure you have access via your dashboard. Please let me know if you need help using Canvas or for tutorials and support, visit <https://canvas.fiu.edu/students>.
- Please be advised that classes may be audio and visually recorded and/or subject to course capture for future access by students in this course. Your attendance/participation in this course constitutes consent to such recordings, which will only be used for educational purposes by students in the course and securely stored in University systems. If there is a concern regarding the recording and use of such recording, please contact [FERPA@fiu.edu](mailto:FERPA@fiu.edu).

### Course description and learning outcome

Oceans cover 71% (and rising) of the world, and no more than 5% of the oceans have been explored. They include wondrous creatures and provide humans with lots of benefits. However, they are threatened by a range of factors and need urgent conservation. This course is designed as an introduction to marine biology and biological oceanography for majors in Biology and Marine Biology. It will also introduce the basics of physical and biological oceanography and the biology/ecology of the major marine ecosystems. Since this is an upper-division level course, core knowledge of natural sciences is expected, and we will draw upon the primary literature published in scientific journals. Successful completion of General Biology I and II is a prerequisite.

Specifically, this course should allow you to:

1. Understand the basic physical and oceanographic processes that shape life in oceans
2. Understand the major characteristics of the key animals and plants in the oceans
3. Recognize key processes in the oceans and how they differ from terrestrial ecosystems
4. Appreciate the biology, ecology, and functioning of the major marine ecosystems
5. Consider the threats to the marine environment, and the basics of marine conservation
6. Understand how we conduct marine research and how to read and interpret research papers

### **Weekly tasks and objectives**

Regular, on-time class attendance is expected – if you don't, you will miss out on attendance points and be unable to ask questions! Please try to participate in class by asking questions. Following each lecture, you should ensure that you understand all the taught material and seek help with material you don't understand (meet with the instructor, ask questions in class, read the textbook). Some required reading of journal articles (posted to Canvas) is associated with each topic that will be highlighted in class. You should spend a reasonable amount of time revising for the mid-terms and final and seek clarification of any material you don't understand.

### **Grading**

The course will have three midterm exams (open book, multiple choice quizzes in Canvas) – these must be taken in the classroom. **\*Despite the exam being open book, you will not have time to learn the material during the exam - you should prepare for the exams as you would for a closed-book test\***. These exams are non-cumulative and cover only material since the last exam. The final exam is cumulative and covers all information from the semester (open-book, short answers, and longer essay-style questions). It counts for 30% of your final grade. Missed exams will count as zero points. Participation in the lecture will account for 10% of your grade. It will comprise being present during class and a series of Canvas quizzes offered throughout the course covering material relevant to the topic we discuss in the lecture.

There will be no make-up exams for absences or tardiness unless for university-approved excuses. Examples of university-approved excuses include documented medical emergencies, the death of immediate family members, and jury duty. Exam scores may be curved.

*Grade scale:*

A 93-100; A- 90-92; B+ 87-89; B 83-86; B- 80-82; C+ 75-79; C 70-74; D 60-69; F < 60

*Summary (students will be graded on their performance in these areas ONLY)*

Midterm 1 – 20%; Midterm 2 – 20%; Midterm – 20%; Final – 30%; Participation/attendance 10%

**Lab Sections: OCB 3043L TA: Haley Glasmann**

The associated laboratory will be a separate one-credit course led and taught by a teaching assistant. The lecture and lab sections have been designed carefully to complement one another throughout the semester; however, the lecture and lab grades will be completely independent. It is highly recommended that you take this lab section if you are interested in marine biology.

### **Professional and academic integrity**

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all faculty members and students are expected to adhere to a standard of academic conduct that demonstrates respect for themselves, their students or fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct (e.g., cheating, plagiarism, academic dishonesty), they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the FIU Student Handbook under the “Academic Misconduct” section.”

FIU is committed to eliminating sexual harassment. In accordance with the FIU Faculty Senate guidelines, this syllabus includes a warning that any misconduct will be reported. FIU’s sexual harassment policy is available at: <http://www.fiu.edu/~eop/EOPSexH.pdf>

### **Syllabus Honesty Statement:**

FIU defines academic misconduct in the Student Conduct and Honor Code (Code) as, “any act or omission by a Student, which violates the concept of academic integrity and undermines the academic mission of the University in violation of the Code.” Code violations include, but are not limited to: academic dishonesty, bribery, cheating, commercial use, complicity, falsification, and plagiarism. The Code is available here: <https://studentaffairs.fiu.edu/get-support/student-conduct-and-academic-integrity/student-conduct-and-honor-code/index.php>

**Teaching schedule (please be advised that the schedule of events is subject to change)**

<b>Week</b>	<b>Date</b>	<b>Book chapters</b>	<b>Subject</b>
1a		Sounding the deep (1)	Introduction to Marine Biology and Oceanography
1b		The Chemical and Physical Environment (5), Live in a fluid medium (6)	Living in a marine environment
2a		The Oceanic Environment (2)	Oceanography I
2b		Climate oscillations and climate change (3)	Oceanography II
3a		Plankton (8)	Marine organismal diversity
3b		Benthic microorganisms, seaweeds, and seagrasses (13)	Marine organismal diversity
4a		Marine invertebrates (14)	Marine organismal diversity
4b		Marine vertebrates (9)	Marine organismal diversity
Partial Exam 1			
5a		Ecological and evolutionary principles of Marine Biology (4)	Ecological and evolutionary principles of Marine Biology
5b		The open Sea: Distribution and Adaptations (10)	Ocean processes and patterns
6a		Reproduction, dispersal, and migration (7)	Ocean processes and patterns
6b		Processes in the water column (11)	Ocean processes and patterns
7a		Productivity, food webs, and global Climate Change (12)	Ocean processes and patterns
7b		Biodiversity (20)	Ocean processes and patterns
Partial Exam 2			
8a		The tidelands: <b>Rocky shores</b> , soft-substratum Shores, Marshes, mangroves, Estuaries, and Oyster Reefs (16)	Marine ecosystem diversity and functioning
8b		The tidelands: Rocky shores, <b>soft-substratum Shores, Marshes</b> , mangroves, Estuaries, and Oyster Reefs (16) + <b>Benthic life habits (13)</b>	Marine ecosystem diversity and functioning
9a		The tidelands: Rocky shores, soft-substratum Shores, Marshes, <b>mangroves</b> , Estuaries, and Oyster Reefs (16)	Marine ecosystem diversity and functioning
10a		The tidelands: Rocky shores, soft-substratum Shores, Marshes, mangroves, <b>Estuaries, and Oyster Reefs (16)</b>	Marine ecosystem diversity and functioning

10b		The shallow coastal subtidal: <b>Sea grass beds, Rocky Reefs, Kelp Forest, and coral reefs</b> (17)	Marine ecosystem diversity and functioning
11a		The shallow coastal subtidal: <b>Sea grass beds, Rocky Reefs, Kelp Forest, and coral reefs</b> (17)	Marine ecosystem diversity and functioning
11b		The shallow coastal subtidal: <b>Sea grass beds, Rocky Reefs, Kelp Forest, and coral reefs</b> (17)	Marine ecosystem diversity and functioning
12a		Benthos from the continental shelf to the deep sea (18)	Marine ecosystem diversity and functioning
12b		Polar Marine Biology (19)	Marine ecosystem diversity and functioning
Partial exam 3			
13a		Fisheries and Food from the Ocean (21) + 20	Human impact and Ocean Conservation
13b		Environmental impacts of industrial activities and human population (22) + 20	Human impact and Ocean Conservation
Final exam			

- Changes to this schedule and other announcements regarding the course will be to FIU email addresses only
- Deadline to drop a course with a DR grade: Monday October 31st