Syllabus for EEOB 3194:
Introduction to Marine Biology

Last updated: March 26, 2026

Basic course information:

- Instructor: Dr. Elizabeth Santos
- Instructor email: **santos.323@osu.edu**
    - Email is my preferred means of communication
    - Class-wide announcements will be sent through Announcements tool in CarmenCanvas
- Monday/Wednesday/Friday 12:45-1:35 pm (50 minutes)
- Biological Sciences Building 668
- Course period: 12 January – 5 May 2026 (16 weeks)
- 3 credit hours
- Course is classified as "Undergraduate Group Studies"

Office hours:

- Take place 2-3 pm in Aronoff 108 Monday/Wednesday
- Drop-ins welcome, no appointment needed
- Meet in person or virtually via Zoom (standing link on CarmenCanvas)
- Office hours are time I set aside to meet with students in my class. Students can meet with me about course content, concerns, or their education in general.
- Students who can't make this time can email me for an appointment

Learning Goals:

This course is broken up into four units: (1) The ocean environment, (2) Evolution of marine organisms, (3) Marine ecosystems, and (4) Humans and the ocean.

By the end of this course, you will be able to:

1. Conceptualize how and why marine environments differ from terrestrial or freshwater environments
2. Recognize different types of marine ecosystems and their unique origins, inhabitants, and ecosystem services
3. Become familiar with the origins of different marine organisms and the ecological relationships among them
4. Appreciate the ecosystem services marine environments provide humans in all parts of the world
5. Understand the anthropogenic threats to marine environments and potential impacts on human populations
6. Become familiar with ways humans have interacted with and studied marine ecosystems over history and today

Attendance:

- ***Attendance is mandatory and part of your grade.*** I will track attendance using TopHat poll questions during lecture.
- You do not need perfect attendance to earn 100% in this grade category. I will drop three lecture's worth of attendance for all students to accommodate planned travel or unforeseen circumstances.
- Electronic devices are encouraged during lecture provided they aren't used in a manner that detracts from learning (yours or other students'). If used in such a manner I will ask you to put them away for the duration of class.

Required readings and paper discussions:

I will provide free PDFs of any required readings on CarmenCanvas. There is no required textbook to purchase.

One goal of this class is to become familiar with the practice of modern marine biology. To accomplish this, we will have regularly scheduled in-class discussions of primary scientific literature. I will assign one paper per discussion, which will be made available on Canvas the week prior.

Grading:

- Grades are determined by: 40% exams, 50% take-home assignments, 10% attendance & participation.
- ***Exams*** (total 40%). I will give five mini-exams throughout the semester. They are each worth 10% of your grade. I will drop your lowest score.

- ***Take-home assignments*** (total 50%. Five assignments at 7%/12%/12%/12%/7% of class grade respectively, in that order). Assignments will involve a mix of writing, personal reflection, and deeper research into specific topics. They will involve specific prompts. At least one will involve group work.
- ***Participation*** (10%). Based on attendance. I will take attendance using TopHat.
- I will not grade based on curves (i.e. I do not limit the number of A's, B's, etc)
- I will not give extra credit
- Expect that grades will be assigned on this scale:

Final Grade	Percentage
A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D+	67-69%
D	60-66%
E	Less than 60%

Exams:

- I will give five mini-exams throughout the semester. These are longer than a quiz but shorter than a typical midterm.
- You are allowed to bring one 8.5 x 11-inch sheet of paper with notes (front and back). Notes can be handwritten or typed.
- Electronic devices are banned during exams unless necessary for accommodation, with advance permission
- I will drop your single lowest score across the five exams
- There is no final exam for this class.
- Exams will not be cumulative
- Exams will cover any topics presented or discussed during lecture time over a set period (stated in course schedule below)
- I will offer make-up exams if you cannot make a scheduled exam. Make-up exams will take place during office hours.

Late Assignments:

I will allow you to turn in take-home assignments late, but with reductions in grade. I will remove 5% off your assignment grade per day past the due date, with a total reduction of 50%.

AI Policy:

Use of AI tools, including generative AI like Copilot, is permitted in this class under certain circumstances. Ultimately, you are responsible for the work you turn in to be graded, whether AI was used or not. In other words, if you choose to use AI tools you are responsible for using them ethically and for judging the quality of the outputs. No AI tool is a substitute for your own personal interests, memories, life experiences, and reflections.

Permitted:

- Using AI as a starting point to brainstorm ideas for take-home assignments or to discover new information or sources that might be helpful
- Inputting your own written take-home work into an AI tool to proofread and catch grammatical errors
- Using AI tools as directed in one or more take-home assignments

Not permitted:

- Using AI to generate text responses to take-home assignments and turning in the output to be graded as your own work (even after editing the output before turning in). This will be considered academic misconduct.

See resources on AI use here: https://teaching.resources.osu.edu/teaching-topics/ai-considerations-teaching-learning

Additional Statements

Statements visible at the link below apply to all courses at Ohio State and give policies regarding academic misconduct, religious accommodations, disability accommodations, grievances, harassment and discrimination:

https://ugeducation.osu.edu/academics/syllabus-policies-statements/standard-syllabus-statements

Disability Accommodations:

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including

mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. You are also welcome to register with Student Life Disability Services to establish reasonable accommodations. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu

Students are not obligated to reveal their disabilities or the nature of their limitations to their instructors. Students must register with Disability Services to request accommodations in the classroom. I will strive to maintain student's confidentiality about health or disabilities.

Academic misconduct policy:

Examples of academic misconduct as it relates to this class include (but are not limited to):

- Using AI tools to generate responses to take-home assignments (even if you edit before turning in)
- Copying text from other sources and including in your written assignments without crediting the source (even if you edit before turning in)
- Using electronic devices during exams without advance permission from instructor
- Sharing information with other students during exams
- Turning in work generated by other students as your own
- Having another student respond to TopHat poll questions on your behalf

The consequences for these actions include a "0" grade on the assignment in question, and potentially an "E" grade for the entire course. If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct.

It is possible to commit plagiarism unintentionally. Students are responsible for viewing these Ohio State resources for how to define and avoid plagiarism:

https://library.osu.edu/copyright/plagiarism

https://ati.osu.edu/node/939/avoiding-plagiarism

https://cstw.osu.edu/sites/default/files/2020-07/plagiarism_1.pdf

Course schedule:

Schedule is subject to change, keep track of announcements using CarmenCanvas

Lecture date	In-class	Take-home assignments	Exams
Unit 1: The ocean environment. Why water is a special substance, structure of the world's oceans, basics of physical, chemical and biological oceanography, and how plate tectonics provide case studies into the 'rules' of oceanography.			
Week 1			
Monday Jan 12 2026	Lecture 1- Ocean literacy		
Wednesday Jan 14	Lecture 2- Abiotic pt 1 (Water molecule)	Introduce #1 Core memory of the ocean	
Friday Jan 16	Lecture 3- Abiotic pt 2 (Abiotic gradients)		
Week 2			
Monday Jan. 19th	*No class- MLK Day*		
Wednesday Jan 21	Lecture 4- Abiotic pt 3 (Currents)	**#1 Due** Introduce #2 Coastal cities	
Friday Jan 23	Lecture 5- Biological Oceanography pt 1 (Primary productivity)		
Week 3			
Monday Jan 26	Lecture 6- Biological Oceanography pt 2 (Nutrients)		
Wednesday Jan 28	Lecture 7- Plate tectonics		
Friday Jan 30	**Paper discussion**		
Week 4			
Monday Feb 2	Review		
Wednesday Feb 4			**Exam 1:** covers lectures 1-7 and paper
Unit 2: Evolution of marine organisms. Lectures combine organismal biology, phylogenetics, paleontology, and ecology to establish a framework for thinking about marine biodiversity.			
Friday Feb 6	Lecture 8- Tree thinking and LUCA		
Week 5			
Monday Feb 9	Lecture 9- Cambrian Explosion & Paleozoic Era	**#2 Due** Introduce #3 Aquarium webcams	
Wednesday Feb 11	Lecture 10- Mesozoic Era		
Friday Feb 13	**Paper discussion**		

Week 6			
Monday Feb 16	Lecture 11- Cenozoic Era		
Wednesday Feb 18	Lecture 12- Marine amniote adaptations		
Friday Feb 20	Guest Lecture: Isabel Pen		
Week 7			
Monday Feb 23	REVIEW		
Wednesday Feb 25			**Exam 2:** covers lectures 8-12 and paper
Unit 3: Marine ecosystems. The unique ecology, evolution and biodiversity of marine environments from tide pools, kelp forests, coral reefs, the open ocean, deep sea and ice-covered polar seas.			
Friday Feb 27	Lecture 13- USA coastlines	**#3 Due**	
Week 8			
Monday Mar 2	Lecture 14- Species interactions		
Wednesday Mar 4	Lecture 15- Coral reefs pt 1		
Friday Mar 6	**Paper discussion**		
Week 9			
Monday Mar 9	Lecture 16- Coral reefs pt 2		
Wednesday Mar 11	Work on take-home #4 in class	Introduce #4: Make-an-organism (group project)	
Friday Mar 13			**Exam 3:** covers lectures 13-16 & paper
Week 10: ***Spring Break March 16th – 20th***			
No class			
Week 11			
Monday Mar 23	Lecture 17- Open ocean & deep pelagic		
Wednesday Mar 25	Lecture 18- Deep sea pt 1		
Friday Mar 27	**Paper discussion**		
Week 12			
Monday Mar 30	Take-home #4 group presentations	**#4 presentations due**	
Wednesday Apr 1	Take-home #4 reflection and wrap-up	**#4 reflection due**	
Friday Apr 3	Lecture 19- Deep sea pt 2		
Week 13			
Monday Apr 6	Lecture 20- Polar ecosystems		
Friday Apr 10	Review		
Wednesday Apr 8			**Exam 4:** covers

			lectures 17-20 & paper
Unit 4: Humans and the ocean. How humans past and present rely on the oceans and anthropogenic threats facing marine environments, including the "Big 5 threats" (exploitation, climate change, habitat destruction, pollution, invasive species).			
Week 14			
Monday Apr 13	Lecture 21- Harvestable resources	Introduce #5 marine-derived resources	
Wednesday Apr 15	Lecture 22- Ecosystem services		
Friday Apr 17	Lecture 23- Big 5 threats pt 1		
Week 15			
Monday Apr 20	Lecture 24- Big 5 threats pt 2		
Wednesday Apr 22	Lecture 25- Marine conservation & restoration		
Friday Apr 24	**Paper discussion**		
Week 16			
Monday April 27		**#5 Due** by class time	**Exam 5:** covers lectures 21-25 & paper

There are no classes or exams during Finals week (April 29th–May 5th)