

## Syllabus

# Introduction to Oceanography



### Course Intro and Objectives

This course is designed for upper-division undergraduates and new graduate students in meteorology, ocean engineering, and oceanography. After reading this book, it is expected that students will be able to describe physical processes influencing the ocean and coastal regions: the interaction of the ocean with the atmosphere, and the distribution of oceanic winds, currents, heat fluxes, and water masses.

In this course you will learn to:

- Describe the theories of the origin of the earth, atmosphere, and oceans
- Describe the development of ocean knowledge from early voyages to modern times
- Describe the theory and features of plate tectonics
- Identify the major features of ocean basins
- Recognize different ocean sediments, their characteristics and origins
- Identify the chemical and physical characteristics of sea water
- Explain how Earth's atmosphere oceans circulate and influence each other
- Compare density and surface currents and identify the factors that affect each
- Understand the formation and behavior of waves
- Explain the formation of tides and identify factors that affect the tidal cycle
- Describe the general characteristics of coastlines and coastal processes
- Identify the factors that influence organisms and productivity in the ocean
- Describe the general characteristics of life in the water

- Describe the general characteristics of life on the sea floor
- Identify and consider possible solutions to the environmental issues of the oceans

### Delivery Format

Blended. Partly online, partly onsite, partly offsite (field trips). Lectures are delivered online via video. Live class sessions are reserved for active lab work. Online activities include group field trip logging and discussions, quizzes, and homework assignments.

### Textbook

Introduction to Physical Oceanography by Robert Stewart of Texas A & M University | NASA

Cost: Free

URL: [oercommons.org/courses/dr-robert-stewarts-physical-oceanography-class-page](https://oercommons.org/courses/dr-robert-stewarts-physical-oceanography-class-page)

### Required Work

#### Readings and Videos

Each week you will be expected to read the assigned chapter(s) or article(s) listed in the online course modules. There are also two hours of video lecture for you to watch each week. These are online so you can watch (and rewatch) them at your convenience.

#### Lab Work

We'll be doing lab work and Q&A in our live face-to-face meetings.

#### Quizzes

Each week you are required to take a quiz specifically on the readings for the week. These are timed and randomized, but you have 2 attempts. However, your first quiz attempt **must** be complete before we meet f2f.

#### Field Trips

We will be going on 5 field trips during the semester. These happen on Friday mornings. I will begin each site visit with a short lecture that introduces you to the particular environment and connects it to previous lessons.

You will be working on discovering and logging your field trip work as described in the online course Field Trip assignments.

#### Paper

Each of you will write a report or essay based on one of your experiences in the field. You'll write two drafts of this paper and participate in a peer review process. This is described in the online course.

**Exams**

Oh no! You have two exams, a midterm and a final. Don't worry: if you've been reading, studying, watching the lectures, and taking the quizzes you should be well prepared. Both exams are comprehensive, so practice those quizzes!

These exams are online, but must be taken at a secure, proctored location such as the Campus Testing Center.

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