

General Science 108: Oceanography (4 credits), Winter 2021

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Zoom Meetings: Tuesday and Thursday 11:00 am - 11:50 am

CRN: 31072

### **Welcome to Oceanography!**

Oceanography is a diverse field with roots in chemistry, physics, geoscience, and biology. This course will give you an oceanic perspective of Earth and help you understand the role the oceans play in affecting humans the role humans play in affecting the oceans.

Course Goals:

- To better understand the natural world. The knowledge you build in this course will encourage you to become more curious about how the Earth works.
- To have a general knowledge of science so you can make more informed decisions as a contributing member of society.
- To develop and improve life-long skills such as problem solving, critical thinking, and communication. I hope that the skills you learn and refine in this class will carry over into your other classes and your personal life.

### **Course Description**

Introductory lab science course that examines the four major categories of oceanographic study: geological, physical, chemical and biological. Emphasizes the geological and geophysical aspects of the sea floor; physical and chemical properties of sea-water, waves, tides, ocean circulation and currents; marine ecosystems; and ocean utilization.

Prerequisite: Math 75. Counts as Physical Science Perspective for AS/OSU and Science with Lab for AAOT. The course articulates to OSU as OC 201 and counts *as a Physical Science Perspective at OSU and the Science/Math requirement for AAOT.*

### **Course Learning Outcomes**

- Describe key events in the history of science, with particular emphasis on oceanography, and their impact on society
- Describe and apply the process of scientific inquiry
- Solve scientific problems using quantitative methods
- Describe the geological characteristics of the seafloor
- Explain interactions between the physical, chemical, and biological ocean systems

## **Remote Teaching Schedule**

This term instead of doing in person lectures and labs the class is conducted online.

Tuesdays will be a normal class period on Zoom. I will lecture on the topics of the week and there will be discussion and activities to reinforce the main ideas.

Thursdays will be lab days. I give you any info you need and then put students into breakout rooms to work on the week's lab and answer questions as needed. Labs will typically take longer than the one hour period we have for class so I strongly encourage starting before Thursday's class and coming to the lab session with an idea of what you need help on.

## **Learning Resources**

- I've provided access to an [online textbook](#)
- **Moodle.** This is our online class hub: you will check grades, review syllabus and powerpoints, access video content, and submit assignments
  - You should be checking Moodle regularly throughout the week
- **Calculator.** Any type will do for this class, but only non-graphing calculators (no phones) can be used on exams.
- **Office Hours** - remote office hours are available on weekdays between 9am and 5pm by appointment - please reach out via email and we'll work out a time.

## **Grading (subject to change)**

- Midterm = 75 points
- Comprehensive Final Exam = 75 points
- Labs (15 points each) = 120 points
- Write-ups (10 points each) = 70 points
- Quizzes (10 Points each) = 80 points

**Total = 420 points**

## **Grading Scale**

A = 100-90% (420 - 378 points)

B = 89-80% (377- 336 points)

C = 79-70% (335 - 294 points)

D = 69-60% (293-252 points)

F = 59% and below (252 points and below)

**Exams:** All exams will be administered online.

**Final Exam:** This exam is comprehensive, covering Weeks 1-10

**Quizzes:** Quizzes generally close Mondays at 11:59 pm (except for Week 1 and Week 6, as indicated). Quizzes are multiple choice, scored out of 10, and you have one attempt. Quizzes are based on the 'Earth Rocks' videos for each week.

**Lab exercises:** Labs will be due each week on Thursday at 11:59 pm. Thursday's class period is primarily dedicated to working on the week's lab. I drop your lowest lab grade from your final grade.

**Weekly Schedule:**

Here is a recommended Weekly Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Complete Readings/ Watch lecture videos Quiz	Attend Class	Get started on Lab	Attend Class Complete Lab	Write-Up

**Write - Ups:** Every week you will also complete a small short-answer style assignment worth 10 pts each on what we covered that week. Write-ups are due on Friday at 11:59 pm.

\* Unless otherwise indicated all assignments are due at 11:59 pm on due date

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Dates	Week	Topics	Assignments (due dates in parentheses)
1/4 - 1/8	1.	Class Introduction, Earth History, Maps, Intro to Oceans	Assignment #1 (1/5) Quiz #1 (1/8) Lab 1 - Maps (1/8) Write-Up #1 (1/8)
1/11 - 1/15	2.	Earth Structure, Plate Tectonics	Quiz #2 (1/11) Lab 2 - Geology of the Seafloor (1/14) Write-Up #2 (1/15)
1/18 - 1/22	3.	Seafloor Provinces, Marine Sediments, Measuring the Seafloor	Quiz #3 (1/18) Lab 3 - Marine Sediments (1/21) Write-Up #3 (1/22)
1/25 - 1/29	4.	Water Chemistry, Water Properties	Quiz #4 (1/25) Lab 4 - Water Properties (1/28) Write - Up #4 (1/29)
2/1 - 2/5	5.	Coriolis Effect Atmospheric Circulation	Quiz #5 (2/1) Lab 5 - Heat Transfer (2/4) Write-Up #5 (2/5)
2/8 - 2/12	6.	Local Weather Effects Ekman Transport	<b>Midterm (2/9)</b> Quiz #6 (2/12)
2/15 - 2/19	7.	Ocean Currents, Thermohaline Circulation	Quiz #7 (2/15) Lab 6 - Ocean Circulation (2/18) Write-Up #6 (2/19)

2/22 - 2/26	8.	Ocean Waves: Wind Driven Waves, Tsunami, Tides	Quiz #8 (2/22) Lab 7 - Tsunami (2/25) Write-Up #7 (2/26)
3/1 - 3/5	9.	Marine Life, Productivity	Quiz #9 (3/1) Lab 8 - Primary Productivity (3/4) Write Up #8 (3/5)
3/8 - 3/12	10.	Climate Change and Ocean	Quiz #10 (3/8) Lab 9 - Ocean Acidification (3/11) Write Up #9 (3/12)
3/15 - 3/17		<b>Finals Week</b>	<b>Final</b>