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

Instructor: Jeremy Randolph-Flagg
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Zoom Meetings: Monday 1:00 pm - 2:20 pm
Lab (Madrone Hall 108): Wednesdays 1:00 pm - 2:50 am
CRN: 24990

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 and 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

Hybrid Teaching Schedule

This term lectures will be conducted on Zoom and labs will be in person at Madrone Hall Room 108

Mondays 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.

Wednesdays will be lab days. We will usually have a short introduction by me and then the rest of the time will be for you to work in groups on the lab assignment. I strongly encourage previewing the lab assignment before class so that you can make effective use of your time in lab

Learning Resources

- I've provided access to an online textbook
- **GS 108 Lab Manual** - available through the bookstore
- **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
- Participation (1 pt each day) = 18 pts

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 in person.

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

Quizzes: Quizzes generally close Fridays 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. Quizzes are low stakes and come before lecture each week.

Lab exercises: Labs will be due each week on Wednesday at the end of lab.

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 Thursdays at 11:59 pm.

Weekly Schedule:

Here is a recommended Weekly Schedule

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

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

Dates	Week	Topics	Assignments (due dates in parentheses)
9/27 - 10/1	1.	Class Introduction, Earth History, Maps, Intro to Oceans	Assignment #1 (9/27) Quiz #1 (10/1) Lab 1 - Maps (9/29) Write-Up #1 (10/1) Quiz #2 (10/4)
10/4 - 10/8	2.	Earth Structure, Plate Tectonics	Lab 2 - Geology of the Seafloor (10/6) Write-Up #2 (10/7) Quiz #3 (10/8)
10/11 - 10/15	3.	Seafloor Provinces, Marine Sediments, Measuring the Seafloor	Lab 3 - Marine Sediments (10/13) Write-Up #3 (10/14) Quiz #4 (10/15)
10/18 - 10/22	4.	Water Chemistry, Water Properties	Lab 4 - Water Properties (10/20) Write - Up #4 (10/21) Quiz #5 (10/22)

10/25 - 10/29	5.	Coriolis Effect Atmospheric Circulation	Lab 5 - Heat Transfer (10/27) Write-Up #5 (10/28) Quiz #6 (10/29)
11/1 - 11/5	6.	Local Weather Effects Ekman Transport	**Midterm (11/3)** Write-Up #6 (10/28) Quiz #7 (11/5)
11/8 - 11/12	7.	Ocean Currents, Thermohaline Circulation ***Veterans Day 11/11**	Lab 6 - Ocean Circulation (11/10) Write-Up #7 (11/12) Quiz #8 (11/12)
11/15 - 11/19	8.	Ocean Waves: Wind Driven Waves, Tsunami, Tides	Lab 7 - Tsunami (11/17) Write-Up #7 (11/18) Quiz #9 (11/22)
11/22 - 11/26	9.	Marine Life, Productivity	Lab 8 - Primary Productivity (11/24) Write Up #9 (11/25) Quiz #10 (11/26)
11/29 - 12/3	10.	Climate Change and Ocean	Lab 9 - Ocean Acidification (12/1) Write Up #10 (12/2)
12/6 - 12/8		**Finals Week**	**Final (12/7)**