General Science 108: Oceanography (4 credits), Summer 2020

Instructor: Jeremy Randolph-Flagg
Office: NA
Email: randolj@linnbenton.edu
Zoom Meetings - Mon - Thursday 10 am

- Monday and Wednesday will be lecture focused, Tuesday and Thursday will be lab focused

CRN: 15881

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

Summer Term (5 weeks)

The fact that this class is being taught in a five week term means that the **pace and therefore the weekly workload will be twice that of a normal 10 week class**. That means two labs, two quizzes, and two write ups will be due most week

Remote Teaching Schedule

This term instead of doing in person lectures and labs the class is of course conducted online. We will continue to follow a Monday - Thursday - schedule with opportunities to meet with other students four days a week

Mondays and Wednesdays will be conducted as instruction days. Much of the instruction will consist of pre-recorded lecture videos that will be uploaded at least a week in advance. I will also hold Zoom Sessions on Mondays and Wednesdays where I will supplement the existing video content, and answer student questions. These Zoom sessions will be recorded and uploaded to moodle afterwards.

Tuesdays and Thursdays will be conducted as an open lab help session via Zoom. The link to access this Zoom session is on our Moodle page.

Learning Resources

- **Textbook is recommended not required**
  - **Textbook:** Essentials of Oceanography by Trujillo and Thompson (12th edition, but other edition is OK!), Pearson publishing. A copy is available at the LBCC library for 2-hour checkout.
  - I've also 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 every weekday
- **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.

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 1-5

Quizzes: Quizzes generally close Mondays and Wednesdays at 11:59 pm (except for Week 1, 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.

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

Lab exercises: Labs will be due each week on Tuesday and Thursday at 11:59 pm - I will hold a Zoom meeting every Tuesday and Thursday at 10:00 am to explain and assist with the Lab. **Lab exercises are designed to be done collaboratively and will be very hard to do on your own.** I will record these meetings and post them on Moodle.

Dates	Week	Topics	Assignments (due dates in parentheses) Unless otherwise indicated all assignments are due at 11:59 pm on due date
6/29 - 6/30	1a.	Class Introduction, Earth History, Maps, Intro to Oceans	Quiz #1 (6/30) Lab 1 - Maps (6/30)
7/1 - 7/3	1b.	Earth Structure, Plate Tectonics	Quiz #2 (7/1) Lab 2 - Geology of the Seafloor (7/2) Write-Ups #1 & #2 (7/3)
7/6 - 7/7	2a.	Seafloor Provinces, Marine Sediments, Measuring the Seafloor	Quiz #3 (7/6) Lab 3 - Marine Sediments (7/7)
7/8 - 7/10	2b.	Water Chemistry, Water Properties,	Quiz #4 (7/8) Lab 4 - Water Properties* (7/9) Write - Up #3 & #4 (7/10)
7/13 - 7/14	3a.	Atmospheric Circulation, Coriolis Effect	**Midterm (7/13)** Quiz #5 (7/14) Lab 5 - Heat Transfer (7/14)

7/15 - 7/17	3b.	Ocean Currents, Thermohaline Circulation	Quiz #6 (7/15) Lab 6 - Ocean Circulation (7/16) Write-Up #5 & #6 (7/17)
7/20 - 7/21	4a.	Ocean Waves: Wind Driven Waves, Tsunami, Tides	Quiz #7 (7/20) Lab 7 - Tsunami (7/20)
7/22 - 7/24	4b.	Marine Life, Productivity	Quiz #8 (7/22) Lab 8 - Primary Productivity (7/23) Write Up #7 & #8 (7/24)
7/27 - 7/28	5a.	Climate Change and Ocean	Quiz #9 (7/27) Lab 9 - Ocean Acidification (7/28)
7/29 - 7/30	5b.	**Final Exam**	Will be posted Wednesday (7/29) 8:00 am Due Tuesday (7/30) 11:59 pm