#### General Science 108: Oceanography (4 credits), Spring 2019

Instructor: Jeremy Randolph-Flagg

Office: NA

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Zoom Labs - Wednesday 11:30 am - 1:30 pm

Zoom ‘Office Hours’ - Monday 11:30 am - 1:30 pm

CRN: 41494

**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

**Learning Resources**

* **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.
  + **Note - Textbook is recommended not required**
* **GS108 Course packet**, by Deron Carter. Please bring to class with you **every day**.
* **Moodle.** This is our online class hub: you will check grades, review syllabus and powerpoints, access video content, and submit assignments.
* **Calculator.** Any type will do for this class, but only non-graphing calculators (no phones) can be used on exams.
* **Office Hours.** I’ll be available every Monday between 11:30 and 1:30 for virtual office hours

**Grading (subject to change)**

* 2 Tests (50 points each)= 100 points
* Comprehensive Final Exam = 75 points
* Labs (10 points each) = 80 points
* Write-ups (10 points each) = 70 points
* Quizzes (10 Points each) = 80 points

**Total = 405 points**

**Grading Scale**

A = 100-90% (405 - 364 points)

B = 89-80% (363- 324 points)

C = 79-70% (323 - 283 points)

D = 69-60% (282-243 points)

F = 59% and below (242 points and below)

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

**Final Exam**: This exam is comprehensive, covering Weeks 1 - 9.

**Quizzes**: Quizzes generally close Mondays at 11:59 pm (except for Week 1, Week 4 & Week 8 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 non-test week you will also complete a small short-answer style assignment worth 10 pts 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 Wednesday at midnight - I will hold a Zoom meeting every Wednesday at 11:30 am to assist with the lab - if you want to join but can’t make the 11:30 Zoom meeting email me directly and I’ll find another time.

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| **Dates** | **Week** | **Topics** | **Assignments (due dates in parentheses)**  Unless otherwise indicated all assignments are due at 11:59 pm on due date |
| 4/6 - 4/10 | 1. | Class Introduction, Earth History, Maps, Intro to Oceans | Quiz #1 (4/10)  Write-Up #1 (4/10)  Lab 1 - Maps (4/10) |
| 4/13 - 4/17 | 2. | Earth Structure, Plate Tectonics | Quiz #2 (4/13)  Lab 2 - Geology of the Seafloor (4/15)  Write-Up #2(4/17) |
| 4/20 - 4/24 | 3. | Seafloor Provinces, Marine Sediments, Measuring the Seafloor | Quiz #3 (4/20)  Lab 3 - Marine Sediments (4/22)  Write - Up #3 (4/24) |
| 4/27 - 5/1 | 4. | Water Chemistry, Water Properties, | **Test #1 - Covers week 1-3 (4/27)**  Quiz #4 (4/29)  Lab 4 - Water Properties\* (4/29) |
| 5/4 - 5/8 | 5. | Atmospheric Circulation,  Coriolis Effect | Quiz #5 (5/4)  Lab 5 - Heat Transfer (5/6)  Write - Up #4 (5/8) |
| 5/11 - 5/15 | 6. | Ocean Currents, Thermohaline Circulation | Quiz #6 (5/11)  Lab 6 - Ocean Circulation (5/13)  Write-Up #5 (5/15) |
| 5/18 - 5/22 | 7. | Ocean Waves: Wind Driven Waves, Tsunami, Tides | Quiz #7 (5/18)  Lab 7 - Tsunami (5/20)  Write-Up #6 (5/22) |
| 5/25 - 5/29 | 8. | Marine Life, Productivity | **Test #2 -** **Covers weeks 4 - 7 (5/25)**  Quiz #8 (5/27)  Lab 8 - Primary Productivity (5/27) |
| 6/1 - 6/5 | 9. | Climate Change and Ocean | Quiz #9 (6/1)  Lab 9 - Ocean Acidification (6/3)  Write - Up # 7 (6/5) |
|  | 10. | **Final Exam** |  |