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

Instructor: Deron Carter

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Office hours: M 1:30-3:00, T 10-11, W 1:30-3:00, Th 10-11, or by appointment

CRN: 41972

Class meeting times: Monday and Wednesday 12:00-1:20, Friday 12:00-1:50, in MH 114

**Welcome to Oceanography!**

Oceanography is an incredibly 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 to society.
* To develop and improve life-long skills such as problem solving, critical thinking, oral communication, and group work. 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 there 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 older edition is OK!), Pearson publishing. A copy is available at the LBCC library for 2-hour checkout.
* **GS108 Course packet**, by Deron Carter. Please bring to class with you everyday.
* **Moodle.** This is our online class hub: you will check grades, review syllabus and powerpoints, and submit some assignments.
* **Calculator.** Any type will do for this class, but only non-graphing calculators (no phones) can be used on exams. I will provide a set for exams.

**Grading (subject to change)**

* 2 Exams (100 points each) = 200 points
* Comprehensive Final Exam = 150 points
* Labs (including field trip)(10 points each) = 90 points
* Reading Quizzes (10 points each) = 70 points
* Homework (5 points each) = 30 points
* In-class reflections (1 point each) = 15 points

**Total = 555 points**

**Grading Scale**

A = 100-90% (555-500 points)

B = 89-80% (499-444 points)

C = 79-70% (443-388 points)

D = 69-60% (387-333 points)

F = 59% and below (332 points and below)

**Exams:** The two exams will be administered as a 2-stage “pyramid” tests. You will have a set period of time to take the exam, turn it in, then retake the exam with a group of students in the class (graded 85% for the "solo" effort and 15% for the "group" effort). Your group score cannot lower your grade. If you know you will be absent on an exam day let me know ahead of time to schedule a make up. Once exams are returned they cannot be made up.

**Final Exam**: This exam is comprehensive and will be completed individually; no “pyramid” format.

**Lab exercises:** Labs take place on Friday. Please be sure to bring your lab manual with you. Labs are designed to be completed in groups, but you must submit your answers in your own words, numbers, etc. Late assignments are not accepted, but your lowest lab score is dropped.

**Field Trip**: On the May 25 lab session,we will have a field trip during class time on to the OSU Marine Geology Repository to view sediment cores collected from around the world. The facility is located in Corvallis, and you will need to arrange transportation to it. You will write and submit a short reflection about your experience there.

**Reading Quizzes.** Much of class will be devoted to discussion and active learning. To make this work everyone must be prepared when coming to class, so it is important that everyone read the assigned readings before we discuss them. I provide reading guides on our Moodle site to help you focus on what is important in the text. You may use your Reading Guides during the quiz and the quiz will cover just the information in the Reading Guides. You may not use your books or class notes on the quizzes. There are no make ups, but your lowest quiz is dropped. **Reading guides must be printed from Moodle and completed in your own hand writing.** Please see me with any concerns.

**Homework.** On non-reading quiz days you will have a short homework assignment due at the beginning of class. These assignments give you an opportunity to interact with oceanography outside of class. All assignments are posted on Moodle. These assignments are graded on a completion basis, and late assignments are not accepted, but I drop your lowest homework.

**Reflections.** On non-lab and exam days we will use the last five minutes of class for you to reflect on what you have learned, and address parts of the material that are still “muddy” to you. You will record these reflections on an index card or piece of paper. Each is worth 1 point.

### Campus Resources

Many resources such as the Library, Student Help Desk (for computers and software) Learning Center, the Writing Desk, and Family Connections, are available to you as a student. They are described on the LBCC website.

Any student who has difficulty affording groceries or food, or who lacks a safe and stable place to live, is urged to contact a **Student Resource Navigator in the Single Stop Office (T-112):** Amanda Stanley, stanlea@linnbenton.edu, 541-917-4877. The navigator can connect students to resources. Furthermore, please talk with your instructor if you are comfortable doing so. This will enable them to provide any resources that they may have.

LBCC is committed to inclusiveness and equal access to higher education. If you have approved accommodations through the **Center for Accessibility Resources (CFAR)** and would like to use your accommodations in this class, please talk to your instructor as soon as possible to discuss your needs. If you believe you may need accommodation but are not yet registered with CFAR, please visit the CFAR website at www.linnbenton.edu/cfar for steps on how to apply for services or call 541-917-4789.

**Statement of Inclusion**

To promote academic excellence and learning environments that encourage multiple perspectives and the free exchange of ideas, all courses at LBCC will provide students the opportunity to interact with values, opinions, and/or beliefs different than their own in safe, positive and nurturing learning environments. LBCC is committed to producing culturally literate individuals capable of interacting, collaborating and problem-solving in an ever-changing community and diverse workforce. LBCC is an equal opportunity educator and employer.

**Your responsibilities:**

1. A huge amount of the learning in this course happens in real time, during class. Come ready to participate and work. Long lectures will be rare occurrences in this class, so you should be prepared to be active throughout the class.

2. If you absolutely MUST be absent, please let me know ahead of time. You may or may not be able to make up the work done in class.

3. I expect you to check the Moodle website regularly to stay updated with current class information and due dates.

4. Respect your instructors and your classmates, and we will return the favor. Respect includes creating an environment conducive to learning, which means being on time, staying for the entire class, turning off cell phones, listening, and contributing.

5. **Honor Code Considerations:** This class is highly collaborative; however, there are expectations for individual work as well. If it is ever unclear to you, please ask. Any cheating, plagiarism, etc., may result in a zero and possible recommendation to the administration for further consequences.

**My responsibility:**

I am here to help you learn. I want each and every student to succeed in this class. Only you can do the learning, but expect me to be available for help during class and office hours and to facilitate the learning process.

***A FINAL NOTE:*** I sincerely believe that each of us can be a resource in this course. I hope you will ask questions, initiate discussion, and take an active part in the class and your learning. In this way, I think we will all learn more! ***Thanks, Deron***

COURSE SCHEDULE (subject to change):

**Due dates in bold face**

|  |  |  |  |
| --- | --- | --- | --- |
| Week and Reading | Monday | Wednesday | Friday |
| 1  Syllabus  Appendix 3: p. 560-563 | NO CLASS  LBCC in service | Class introductions | Lab: Maps |
| 2  Ch. 1 and 2 | **Reading Quiz 1**  Forming Earth and the oceans  Plate tectonics | **Homework 1**  Plate boundaries | Lab: Geology of the seafloor |
| 3  Ch. 3 and 4 | **Reading Quiz 2**  Seafloor features and hydrothermal vents | **Homework 2**  Marine sediments | Lab: Marine sediments |
| 4  Ch. 5 | **EXAM 1**  Covers weeks 1-3 | **Reading Quiz 3**  Water and seawater | Lab: Water properties |
| 5  Ch. 6 | **Reading Quiz 4**  Atmospheric circulation and the oceans | **Homework 3**  Hurricanes | Lab: Coriolis effect |
| 6  Ch. 7 | **Reading Quiz 5**  Ocean circulation | **Homework 4**  El Nino Southern Oscillation | Lab: Ocean circulation |
| 7  Ch. 8, 9, 10 | **Reading Quiz 6**  Coasts, waves, tides | **Homework 5**  Coasts, waves, tides | Lab: Tsunami |
| 8  Ch 12.: p. 375-383  Ch 13: p. 403-424 | **EXAM 2**  Covers weeks 1-7 | **Reading Quiz 7**  Marine life and productivity | Lab: Primary productivity |
| 9  Ch. 16  Review p. 156-158 | NO CLASS  MEMORIAL DAY | **Homework 6**  Climate change and ocean acidification | **Field Trip to OSU Marine Geology Repository** |
| 10  Ch 15: p. 493-500  Ch. 13: p. 424-430 | **Reading Quiz 8**  Coral reefs, food webs, and energy transfer | **Homework 7**  Pressures on marine ecosystems | **Field Trip Reflection due**  Lab: Ocean acidification |
| Final  6/11 | **FINAL EXAM**  **Covers weeks 1-10**  1:00-2:50 pm  MH 108 |  |  |