

BI150 – Ocean Planet: A User’s Guide

Professor Michelle Wood – miche@uoregon.edu
475 Onyx Bridge -- Office Hours : Wed 2-4 PM and by appointment

GTF: Marco Coralles – marcoc@uoregon.edu
Office Hours: Tues – 2-4PM, Onyx Bridge 360

4 Credit Hours, “Lecture” 10-11:20 MW, Lillis 111
“Discussion” - 9, 10, 11AM, Tues, Huestis 129

Earth is a planet of water – 71% of the surface of the earth is covered with an ocean of salt water that is, on average, 3500 meters deep. Throughout this vast fluid environment are an incredible array of organisms, swimming, floating, burrowing, breathing, and making their way as part of the biggest ecosystem on the planet. Few people get to see very much of this amazing realm, but our human species is totally dependent on the oxygen produced by the microscopic plants of the ocean, the way the ocean stores and transports heat and affects climate, produces food, and allows for transport of goods and services around the globe. In this class, we use resources that any citizen can understand and interpret to develop your appreciation for the diversity and beauty of the ocean, and of the way that science can be helpful to long-term protection of the ocean. I hope, by the end of the course, you are a fan of the ocean and a willing participant in efforts to learn more about the ocean, and ways it can be restored and sustained.

LEARNING OBJECTIVES– by the end of the term, the successful student should be able to:

- 1) Describe the basic features of ocean ecosystems and major ecological challenges that face the marine environment.
- 2) Explain and apply at least three systems for classifying marine organisms to representative species. These are – systems based on 1) motility and habitat (plankton, nekton, benthos, and related terms), 2) systems based on food web dynamics (e.g. herbivore, primary producer, detritivore), and 3) systems based on taxonomy and relatedness (e.g. species, genus, etc.)
- 3) Understand key defining features of major taxonomic groups of marine invertebrates, marine mammals, and fish (bony fish vs. cartilaginous fish).
- 4) Recognize common organisms from the Oregon intertidal and be able to create natural history ‘stories’ about them that incorporate knowledge of their basic biology.
- 5) Be proficient enough with the use of tide tables to be able to plan a trip to the coast for clamming, fishing, or tide pooling. Be able to adapt what you have learned about Oregon tide tables to tides in other parts of the world.
- 6) Be able to explain the phenomenon of intertidal zonation and predict animals that should be easily seen at low tide on any given day, providing a tide table is available.
- 7) Be able to make informed choices about activities that affect the ocean, including consumption of seafood.
- 8) Explain how science is used in several specific examples of social issues where policy and marine science intersect.
- 9) Be able to make scientific predictions and describe the results of hypotheses you have tested.

- 10) Recognize the difference between a scientific question, a scientific hypothesis, and a policy question or proposal.

Participation and Workload: This class involves a normal workload that requires you to spend about eight or nine hours per week actively working on the class, reading papers and working on assignments. There are online lab modules and we will discuss material in the MW 'lecture' class as well as the 'discussion' sections. There is much research now that shows people learn and retain more if they are asked to speak and think during class, and not listen to a professor talking for most of the 'lecture' so be prepared to PARTICIPATE. We will take roll, or collect assignments during the term and accumulate participation points; your final participation score will be based on the percentage of the total awarded that you earned. These cannot be made up or turned in early or late; "you must be present to win"; but each person starts out with a 'free' 2% of the total points to allow some leeway in case of emergency. These will be added to your personal total at the end of the term and serve as XC for those who don't miss any assignments. iClickers will be used to help generate discussion and gauge student progress, not to grade performance.

Field Trips: You are required to go on one of the two Saturday field trips. They are all-day (7AM_6PM, approximately) field trips. Together we will explore Oregon's wonderful coast. The first is Feb. 4 to the South Coast, and the Oregon Institute of Marine Biology and Charleston Marine Life Center; the second is to Seal Rock Reserve and the Oregon Coast Aquarium on March 4. Sign up for the field trip of your choice in discussion during Week 2. You will need to have weather-appropriate clothing and be prepared to hike on somewhat uneven surfaces for part of each field trip. Students for whom this may be a problem should bring this to the attention of the instructors.

Course Grade: Participation (including film assignments) 20%, Midterms 30%, Final 15%, Field Trip 10%, Discussion 25%

Grading Policy: The course grade includes several components to allow you to show your engagement in the course and what you have learned in a variety of ways. Writing assignments, discussion reports, participation and preparation assignments, and field trip reports will be graded using a High Pass- A, Pass- B, Low Pass- C, and No Pass -D or F.); this translate to 95, 85, 75 and 65, <60% of the assigned points for the work of A, B, C, D, F, respectively; A+ (100%) is assigned by instructor discretion for exceptional work. Late work is subject to significant penalties and cannot be turned in after grades are assigned to the rest of the class. "High Pass" work always shows evidence of editing and includes a fairly high information content that links ideas in the work to course topics and reflects individual initiative to go beyond the basic assignment. "Pass" work shows evidence of extra effort but may not rise to the level of an "A" effort in one or more areas. "Low Pass" work has major deficiencies in several areas but the student had made an effort and mastered the basics of the assignment. "No Pass" work that earns 65% credit represents some effort, is acceptable in at least one area, but deficient in others. "Low Pass" work earns some credit, but <60% either because no aspect of the work rises to acceptable levels, major portions of the assignment are missing, or, despite some small aspect being acceptable, most of the work is extraordinarily subpar. Writing Assignments (only writing assignments) can be revised and turned in for regrading. Exams will be graded on a 'normal' 100 pt. scale with letter grades assigned. If you are happy with the average of your first two mid-terms, you can use that

grade for the final. The final is comprehensive so if you miss one mid-term, plan to take the final. No makeups for mid-terms.

Academic Integrity: Ideas and creative expression are the cornerstone of the intellectual life of the University. Plagiarism and other forms of dishonesty in the academic endeavor are thus contrary to the goals of the University and an enlightened life, just as personal integrity, collaboration and honest sharing of ideas (with credit given where it is due) is part of the path to new knowledge and a just society. Students are expected to adhere to University policy on academic misconduct and are responsible for consulting with the instructors if they have any questions about proper procedures for attribution, cooperative projects, or other acts that might be construed as plagiarism or other forms of misconduct. See guidelines at conduct.uoregon.edu and information on plagiarism at <http://library.uoregon.edu/guides/plagiarism/students/index.html>

Inclusivity and Accessibility: Freedom of academic inquiry, equity among all of our diverse array of students, and responsiveness to individual needs so that everyone is able to perform at their best is a core value for the UO and the Ocean Planet Team. Accommodations for documented disabilities will be made most easily if you let us know as soon as possible what accommodations are needed; please provide letters from the Accessible Education Center (<https://aec.uoregon.edu>) as soon as possible. If you have other needs, documented or not, please let me know and I will do my best to accommodate you. While we cannot all totally understand each other's personal experiences, we can all work to eradicate discrimination and we can all share and benefit from each other's perspectives with respect and generosity. Courtesy and thoughtfulness will enrich our journey together this term, and are expected from everyone.

TEXTBOOKS:

Required:

BI150-Ocean Planet – Readings from Castro & Huber – UO Bookstore

Whelks to Whales – R. M. Harbo – UO Bookstore

Marine Biology: A Very Short Introduction – Philip. V. Mladenov - online Amazon

SimULINK Voucher or online purchase of SimBio Virtual Labs - details for purchase will be provided in class.

Additional Readings will be posted on Canvas.