Syllabus for Laboratory in Oceanography– Eureka Campus		
Semester & Year	**Spring 2019**	
Course ID and Section #	**OCEAN-11 E-5254 E-5255**	
Instructor's Name	**Danny O'Shea**	
Day/Time	**Tuesday, Thursday / 10:05AM - 11:30AM**	
Location	**Humanities Bldg, Room HU125**	
Number of Credits/Units	**1**	
Contact Information	*Office location*	**HU 125A**
	Office hours	**T Th 11:30AM – 12:30PM or by appointment**
	Phone number	**n/a**
	Email address	**danny-oshea@redwoods.edu**
Textbook Information	*Title & Edition*	**Laboratory in Oceanography**
	Author	**Daniel C. O'Shea**
	ISBN	**n/a**

Course Description: An exploration of the conceptual material presented in OCEAN-10. Students will acquire practical laboratory and field experience using oceanographic skills, tests, and procedures. Laboratory exercises focus on chart reading, measurements of seafloor movement, seawater chemistry, wave celerity, and microscopic analysis. Field experience includes examination of coastal geology, wave and beach processes, habitats and marine organisms. Note: This course includes field trips to various marine and coastal areas. The College does not provide transportation.

Student Learning Outcomes:

1) Use the formal methodology of the scientific method as an inquiry-based tool to critically evaluate oceanic phenomena.

2) Demonstrate the skills necessary to utilize basic instruments, tools, and tests used in oceanography.

3) Apply classification systems to organize and identify marine features and organisms.

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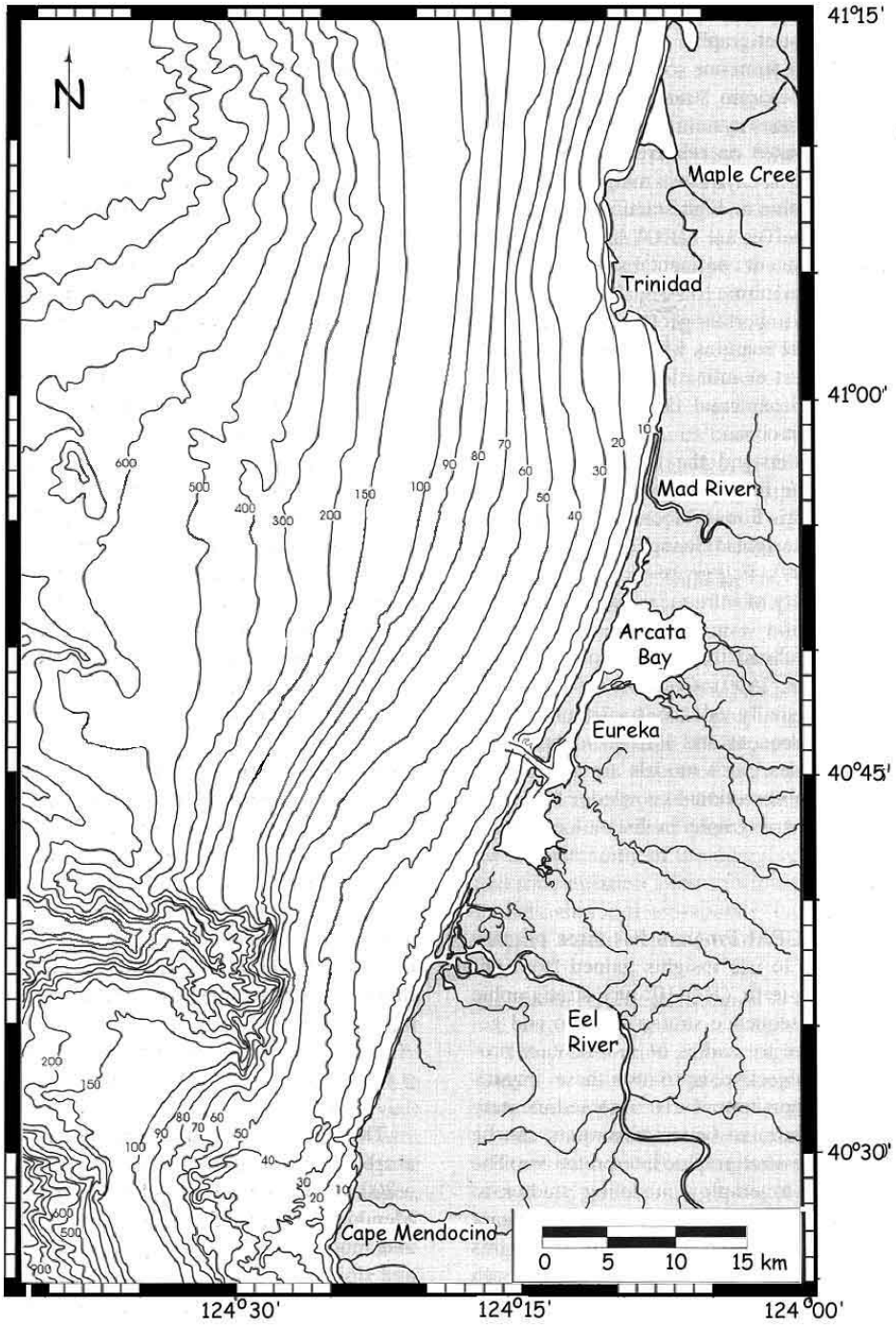
College of the Redwoods is committed to equal opportunity in employment, admission to the college, and in the conduct of all of its programs and activities.

Laboratory in Oceanography
OCEAN-11 E-5254 E-5255
College of the Redwoods
Spring 2019



Syllabus
Instructor Danny O'Shea

OCEAN-11 E-5254 E-5255	**Spring 2019**	**TTh 10:05AM - 11:40AM**
Laboratory in Oceanography	**Danny O'Shea**	**Room HU 125**
Office HU 125A	**e-mail: danny-oshea@redwoods.edu**	

Course Description: Oceanography 11 a one-unit laboratory course that augments the conceptual material presented in the Introduction to Oceanography (OCEAN-10) course. Students will acquire practical laboratory and field experience in many oceanographic skills, tests, and procedures. Laboratory exercises will focus on chart reading and navigational skills, basic measurements of seawater chemistry, and other processes. Field experience will include examinations of coastal geology, wave and beach processes, and marine organisms and habitats.

Syllabus

Week	Day-Month	Laboratory	Topics
1	22 - Jan 24 - Jan	1) Latitude, Longitude & Time	Nautical Charts
2	29 - Jan 31 - Jan	2) Coastal Geology & South Humboldt Bay	* Field Trip: Table Bluff: Beach Survey
3	5 – Feb 7 - Feb	3) Plate Tectonics Magnetic Reversals	*Hookton Sl Sampling Plate Tectonics
4	12 – Feb 14 - Feb	4) Coastal Marine Sediments	*Hookton Sl Sampling Grain Size Analysis
5	19 - Feb 21 - Feb	5) Salinity Temperature & Density	*Hookton Sl Sampling T – S Diagrams
6	21 - Feb 23 - Feb	6) Marine Weather	*Hookton Sl Sampling Marine Weather Charts
7	26 - Feb 28 - Feb	7) Water Masses & Ocean Circulation	*Hookton Sl Sampling Water Stratification
8	5 - Mar 7 - Mar	8) Ocean Waves	*Hookton Sl Sampling Ocean Wave Prediction
9	12 - Mar 14 - Mar	9) Tsunami	*Hookton Sl Sampling Tsunami Travel Time
10	19 - Mar 21 - Mar	Spring Break	No Lab
11	26 - Mar 28 - Mar	10) Seiche	*Hookton Sl Sampling Tides
12	2 - Apr 4 - Apr	10) Tides and Amphidromes	*Field Trip to Arcata Marsh
13	9 - Apr 11 - Apr	11) Estuaries	*Hookton Sl Sampling Phytoplankton
14	16 - Apr 18 - Apr	12) Primary Producers	*Hookton Sl Sampling Zooplankton
15	23 - Apr 25 - Apr	13) Zooplankton and Benthos	*Hookton Sl Sampling Ocean Animals
16	30 - Apr 2 - May	14) Marine Adaptations	*Hookton Sl Sampling
17	7 – May 9 - May	Final Project	Poster Presentation *Field Trip: South Jetty

*** Indicates Field Trip. Be prepared for outdoor conditions such as sun, wind and rain.**

Office Hours: Tuesday 11:30AM – 12:30PM or by appointment. Room 125A.
The best way to contact me is via e-mail at: danny-oshea@redwoods.edu

Course Learning Outcomes

1. Use the formal methodology of the scientific method as an inquiry-based tool to critically evaluate oceanic phenomena.
2. Demonstrate the skills necessary to utilize basic instruments, tools, and tests used in oceanography.
3. Apply classification systems to organize and identify marine features and organisms.

Grading:

Your performance on: the weekly laboratories, and field trips, group poster and presentation and lab participation determine the grade you receive. There are 1000 points available and grades are assigned by the percentage of total points as follows:

1000 - 900=A | 899 - 800=B | 799 - 700=C | 699 - 600=D | <599=F

Grading Summary:	**Points**
➢ Laboratories	600 (40 pts each lab)
➢ Lab notes	200 (25 pts each entry)
➢ Poster and Presentation	200
Total Points:	**1,000**

Oceanography -11/ Laboratory in Oceanography augments the Ocean-10 course, and culminates with a poster and presentation of the real-time oceanographic data collected during the semester. The oceanographic observations are derived form a variety of sources currently available for the Humboldt County coastline. The laboratory develops skills reading charts, using digital data loggers, collecting field observations, and interpreting laboratory and microscope data to evaluate and produce the final product. A primary goal of this class is to produce, as a group, a final project in the form of a poster that describing the region, the general oceanography setting, the type of substrates (mud, sand, rock), the influence of physical forces (winds, waves, currents,…) on water quality (temp, salinity, clarity), and the succession of the phyto- and zooplankton during the semester. The project will be worked on during the lab along with a series of demonstrations (labs) designed to help visualize some of the complex processes seen in the field. The product will be designed, written and completed by the students with assistance from the faculty and staff at College of the Redwoods.

Field sampling will take place each week with trips to Hookton Slough to collect water quality data, note oceanographic observations and collect plankton samples. You will need a journal to record your observations, insights and ideas from each field trip, and to contribute to the final project. Your notebook will record the basic observations, winds, temperatures, floods, etc. that occur during the semester and be part of your final grade. This data set will be summarized and put together by you toward the end of the semester.

Grading is based on lab attendance, field trip participation, lab notebook and your contribution to the final poster project. In order to successfully complete the lab work you will need a notebook, calculator, ruler, and writing supplies with an optional set of colored pencils (I have some). You will need to bring appropriate clothing for protection from Sun, Wind, and Rain during the field trips to South Humboldt Bay Area.

The following is a list of parameters to be included as part of the final poster.

1) Topographic and Bathymetric Profiles of the coastal hills, bay and ocean
2) Environmental description of the bay, sand spit, sea cliffs, and coastal seafloor
3) Beach survey the South Spit of Humboldt Bay 2 separate times in several locations
4) A plot of the tides and rainfall runoff and the water clarity of the South Humboldt Bay
5) Time series of the temperature, salinity, Secci depth
6) Observations of sea state conditions and the marine weather
7) Collection and identification of plankton samples
8) Observation of abundance and change of migratory fish, mammals, birds.

The poster will be a compilation of the field data, observations, events, and collected during the semester. The final product is a group effort, however, the grading will be based on the contribution of each individual. There are several components need to be included and so there is ample opportunity to contribute to the final poster. Some of the primary components that will go into the poster are: **Title, Figures, Graphs, Illustrations, Figure captions, Poster Layout, Data processing, Research, References,** and **Final Production.**

Faculty Initiated Drop

If you miss more than 3 laboratory meetings over the course of the semester you will be dropped from this lab. If you have to miss a lab, please let me know a day before the lab.

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