

Marine Science 100L, 21403: Oceanography Laboratory, Fall 2009
Orange Coast College
Tuesdays, 2:20 – 5:30 pm, Lewis 104

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Course Description

Oceanography Lab is a basic introductory laboratory class designed to supplement the Marine Science 100: Oceanography lecture class. In this class you will receive an orientation to marine science research processes, techniques, equipment, instruments, institutions, and training/education centers. The class will include investigations of: physical and chemical properties of the sea; conditions of the air/sea/land interface; review of biological taxonomy & classification; study of longitude, latitude, navigation; and ocean basin biography and geology. We will examine phytoplankton and zooplankton. The class will include an oceanographic research cruise, a field study of an estuary, and scientific investigation of the many special adaptations of marine mammals. Three hours & 10 minutes lab per week for sixteen weeks. A transfer course. Not offered in credit/no-credit option.

This course is intended for students who, while enrolled in or after completing Marine Science 100: Oceanography, wish to learn much more about oceanography, both worldwide and off Southern California and Orange County, and have hands-on experience with marine animals, plants, charts, instruments, sediments, and both physical & chemical processes. Students who would like to investigate careers in oceanography also find this class interesting and informative.

Course Requirements

Prerequisites: Concurrent enrollment or completion of Marine Science 100: Oceanography at Orange Coast College with a grade “C” or better.

Required Text: Marine Science 100L: Lab Manual, 17th Ed. Available in the OCC Bookstore.

Lab Manual Pre-lab Papers: Before each lab (except lab #1 – Marine Science Research) you will find a “Prelab” form in the lab manual. You are to answer all of the questions on the prelab form (IN DARK BLUE OR BLACK INK ONLY!) And in your own words (DO NOT COPY FROM OTHER STUDENTS PAPERS!) and be ready to turn this in when you arrive at class the day a specific lab is due to be considered. These will be graded (3 points each) and returned to you the following week. All of the answers to the question on the prelab are in the lab exercise – some however must be reasoned out on your part! *These will not be accepted late (under any circumstances!) and there are no make-ups on this, and they cannot be turned in during any other lab or lecture class meeting.* We expect you to keep the graded, returned prelabs, record your score and keep a running tally of the points you have earned.

Lab Manual Exercises Write-ups and Critical Thinking Pages: At the end of each set of lab instructions you will find a set of pages we call the “Lab Exercise Write-up and Critical Thinking Pages” (abbreviated here as WUCT). We expect you to find answers to all of the questions in each lab exercise

during and after each class and fill in the correct answers in the Lab Exercise Write-up form (you are welcome to study with others and discuss answers outside of class, but you are not to copy other students answers onto your lab exercise). We expect you to do all of your own writing. If you do not find answers to all of the questions asked in the lab exercises then you are not arriving at class fully prepared and you are not actively seeking out answers during and after the lab is completed.

At the end of each lab exercise you will find two pages of blank (lined) paper titled: Critical Thinking Pages. This is where you are to evaluate and interpret each lab exercise. We expect to read your critical thinking about each lab exercise. We do not wish to read a list of all the things you did, we are not that interested in whether you enjoyed this lab or not; and we definitely do not want to read about your opinion of this class, the instructor, the student teaching assistants, and these methodologies for critical thinking and learning. *We do want to read your analysis and interpretation of how this lab exercise and the elements within it relate to the real world ocean that you are or have learned about in Marine Science 100: Oceanography Lecture class. If you do not understand these instructions we expect you to ask the student teaching assistants or the instructor for more information on this.*

The Lab Exercise Write-ups and Critical Thinking Pages are to be stapled together (in page order and separate from the prelab), before you come to class, and turned in at the beginning of the next class meeting after each lab is completed. These are worth 8 points each toward your final grade. *They will not be accepted late and there is no make-up opportunity.* All of your writing in the lab exercise write-ups and critical thinking pages must be in dark blue or black ink – no pencil – and must be neat, legible, spelled correctly, punctuated, and written in full sentences. If you cannot write clearly then print or type up your answers and paste them into the lab exercise. It is permissible to make drawings in colored pencil. These will be returned to you after they are graded and recorded and we expect you to hold on to them.

Quizzes: There will be *at least* 12 quizzes (20 points each) given throughout semester (i.e., almost every class), typically administered at the beginning of class. If more than 12 quizzes are given, only your 12 best quizzes will count toward your final grade. *Make-up quizzes are not permitted.* Quizzes are the largest component of your lab grade, so be prepared. They will cover information and reading from the previous week(s). All answers to quiz questions must be written legibly in blue or black ink, with correct spelling, and in full sentences for credit. Quizzes will be returned the following week for you to review and record your scores, but will be recollected and kept by the instructor.

Attendance: Attendance is mandatory. Attendance is taken every day near the beginning of class. You will be considered absent if you are not present while attendance is taken. We drop persistent non-attendees (3 or more absences) and people who keep coming in late to class. Do not make any other plans during this sixteen-week semester for the hours, days, and weeks that our class meets.

Class Preparation and Appropriate Lab Attire: Because this is a scientific research lab and you will be working with chemicals, glassware, live organisms, and instruments, you must, each day the class meets, wear what we consider appropriate attire; these include closed toe and heel shoes, jeans or long pants, tee-shirt, sweat shirt, regular shirt or blouse. Do not show up to class in shorts, tank-tops, cut-offs, swim suits, sandals, or barefoot as you will be instructed to leave class and therefore miss quizzes and other credit. No food or beverages are allowed in the lab but you can bring plastic bottles of drinking water into class.

Always bring a black or blue pen, pencil, your lab manual, and a notebook with paper to write on each time the class meets. Cell phones must be turned off when you enter the classroom, as a courtesy to your classmates. Always enter and leave class through the front door. Also, do not bring skateboards or bicycles to this class or leave them at the door.

Your Instructor and You: If during the semester you have a question or concern regarding this class, I invite you to come see me in person after class or by appointment.

Field Trips: There will be at least three field trips during the semester. You are expected to attend each trip as a part of your course of instruction. If you miss a field trip you are still responsible for all of the information gathered or covered during that field trip. We expect you to begin now (today!) preparing for these field trips. Talk to your boss, relatives, friends, etc... so that you are available and have transportation when the field trips are scheduled. Make no other plans and be sure to tell your other teachers about the field trips. They will also get a note from me prior to the trip, explaining your involvement. You will be provided maps to the field trip sites but it is your responsibility to get there on your own, on time, and prepared.

Final Grades: This class is only offered for grades, there is no credit/no credit option. The final grade for this class is based on the total number of points you earn on quizzes, pre-labs, lab exercise write-ups and critical thinking pages, and Instructor Evaluation Credit (a somewhat more subjective evaluation by the student teaching assistants and myself based on our assessment of your overall effort, attendance, involvement with the class, cooperation, and commitment to the class – see below).

Assignments	#	Pts each	Total pts
Lab exercise write ups and critical thinking	13	8	104
Quizzes	12	20	240
Pre-labs	12	3	36
Instructor evaluation credit	1	50	50
Total			430

You can estimate your grade using the following curve:

Letter Grade	Percentage	Total pts
A	88 – 100 %	378 - 430
B	78 – 87 %	335 - 377
C	68 – 77 %	292 – 334
D	58 – 67 %	249 - 291
F	0 – 57 %	0 - 248

Academic Honesty and Civility: I expect and require you to exhibit academic honesty when you take quizzes or complete pre-labs and lab exercise write-ups and critical thinking page assignment. What that means is that you do not cheat in any way. You do not ask other students for answers, give other students answers, or copy answers off other students papers. Also, you do not use crib (cheat) sheets, notes, or anything else during a test that gives you an unfair advantage over other students. Also, I expect you to inform me or the course assistant immediately of the identity of any student you know to be practicing academic dishonesty in this class. Students violating academic honesty in my class will be dealt with forthrightly and to the highest degree allowable under existing O.C.C. policy. Specifically, this means in lab that you do not copy other students' work (for instance you are to never copy another students critical thinking pages).

I also require that you practice civility and courteousness in my class to your fellow students, the student teaching assistants, and myself. I do not condone and will not tolerate foul language and inappropriate behavior by students that I deem disruptive to the order and progress of the class.

Tentative Class Schedule (subject to change)

week	date	exercise #	topic	assignments due
1	Sep 1	1	Marine Science Research, 1	syllabus chit
2	Sep 8	1	Marine Science Research, 2	
3	Sep 15	2	Marine Charts	exer. 1 WUCT, exer. 2 pre-lab
4	Sep 22	3	Bathymetry	exer. 2 WUCT, exer. 3 pre-lab
5	Sep 29	4	Sediments	exer. 3 WUCT, exer. 4 pre-lab
6	Oct 6	5	Water Chemistry, 1	exer. 4 WUCT, exer. 5 pre-lab
7	Oct 13	6	Water Chemistry, 2	exer. 5 WUCT, exer. 6 pre-lab
8	Oct 20	7	Waves & Tides	exer. 6 WUCT, exer. 7 pre-lab
9	Oct 27	8	Plankton, 1	exer. 7 WUCT, exer. 8 pre-lab
10	Nov 3	8	Plankton, 2	
11	Nov 10	10	Fish & Invertebrates	exer. 8 WUCT, exer. 10 pre-lab
12	Nov 17	9	Long Beach Aquarium*	exer. 10 WUCT, exer. 9 pre-lab
13	Nov 24	11	Marine Institute Oceanographic Cruise**	exer. 9 WUCT, exer. 11 pre-lab
14	Dec 1	12	Estuarine & Salt Marsh Ecosystem***	exer. 11 WUCT, exer. 12 pre-lab
15	Dec 8	13	Marine Mammals	exer. 12 WUCT, exer. 13 pre-lab
16	Dec 15			exer. 13 WUCT

* Class meets at Long Beach Aquarium (see map to aquarium in your lab manual). Wait outside the aquarium for arrival of the instructor and the teaching assistants, where assignments will be collected.

** Class will meet at OCC, board a bus and ride to the side of the Oceanographic Cruise ship's departure site. It is your job to be early arriving at OCC. Come prepared to get wet and experience cold conditions: dress appropriately! You may wish to also prepare for possibly getting seasick. You are responsible for buying and using your own seasickness medicine.

*** Class will meet at the Peter and Mary Muth Interpretive Center in Upper Newport Bay. Students must supply their own transportation to and from the field trip site - it is highly recommended that you carpool. See the map to the field trip site in the Lab Manual. Assignments will be collected on site, followed by a tour of the Interpretive Center and a 45 minute nature walk. In addition to good footwear, you should also bring binoculars, your backpack and a clipboard.

Marine Science 100L Class Information Sheet Chit

This page must be filled out, signed, dated, and turned in to the instructor or the course assistant by the end of the first class meeting. On the back of this chit please write a essay describing yourself, describe any ocean background you have, and any specific oceanographic interests you might have.

key instructions	initial here
1. The instructor expects you to be in class at every class meeting and to arrive early. No absences! Attendance is taken each day the class meets and you are expected to be in class for each attendance.	_____
2. The instructor requires that you dress in appropriate attire in lab class as defined previously in the syllabus and that you not bring food or beverage into Lewis Center Rm 104. You are also expected to turn off all cell phones & pagers during class. No skateboards or bicycles are allowed in class or just outside the door.	_____
3. Pre-labs (3 pts) are due before each lab starts, Lab Exercise Write-Ups and Critical Thinking pages (8 pts) are due following each lab at next lab class meeting, at the beginning of class. No late papers will be accepted either in lab class or in any other lab class and there are no make-ups. A quiz (20 pts) follows each lab and there are no make-up quizzes. All writing for this class must be in DARK BLUE OR BLACK INK – NO PENCIL! Instructor Evaluation Credit (50 pts) is also part of your total grade, based on criteria discussed in the syllabus.	_____
4. The instructor requires you to be civil & courteous to other students in class, the student teaching assistants, & the instructor. The instructor requires that you always exhibit academic honesty in this class as defined in the course syllabus.	_____

I have received the syllabus for the Marine Science 100L Oceanography Lab class and have had the opportunity to read them. I have also had the opportunity to ask the instructor questions about this syllabus and I have reviewed the key instructions.

sign here

date

print your name here

student I.D. #