

OCEANOGRAPHY LAB: OCEANOGRAPHY 100L

Palomar College: Spring 2010

Instructor: Mr. Al Trujillo

Tuesday Lab (Escondido)

Course Prerequisite

Prior or concurrent enrollment in Oceanography 100 (three-unit Oceanography Lecture) or equivalent. Verification of enrollment may be required.

Course Content

This lab course is an optional one-unit course that accompanies the Oceanography 100 Lecture course. Topics covered in the lab will tie in closely with topics covered in the lecture portion; thus, this course will help you to succeed in the lecture course. In fact, students who take the lecture and the lab concurrently typically receive at least a full letter grade higher in the lecture. In the lab, we will examine a wide variety of oceanographic phenomena, giving you the opportunity to analyze real oceanographic data. The course is very field-oriented, with about 40% of our time spent in the field. In addition, there are oceanography-related computer exercises, which may require you to have Internet access either at home or at any publicly available place (such as at Palomar's library).

Contact Information

Instructor's Office: EC-808C Escondido Center

Office Hours: MW 11:45-12:15; TTh 11:15-11:45; Tu 4:30-5:30; Wed 4:00-5:00 @ San Marcos Campus NS-110; Mon 8:00-9:00 am online via e-mail; and also by appt.

Office Phone: (760) 744-1150 ext. 2734

Instructor's e-mail address: atrujillo@palomar.edu

Instructor's Website: <http://daphne.palomar.edu/atrujillo/>

Course Blackboard site: <http://www.palomar.edu/blackboard/>

If you leave me a message, I will try to respond to it within 24 hours but not later than 48 hours. Please keep me informed about significant events that affect your attendance in class. I tend to work with students who keep me informed; otherwise, I'm not very forgiving about students missing important class meetings. If you need to talk to someone on the San Marcos campus when I am not around, contact the Earth, Space, and Aviation Sciences Office at (760) 744-1150 ext. 2512. Brenda, the department secretary, is on campus weekdays from 7:30 a.m. to 4:00 p.m.

Teaching Philosophy

I truly believe that each student determines his or her own grade. In reality, I'm not the main factor in the outcome of your grade—you are. I encourage you to work hard to achieve the grade that you want and to utilize me as your instructor to help facilitate your learning. This lab course (like all lab courses) is **a lot of work for one unit** but I will try my best to make the course interesting and worthwhile. I love teaching and I'm interested in helping you learn about the science of oceanography.

Lab Manual and Other Supplies

Required lab manual: *Laboratory and Field Exercises in Oceanography*, 6th Edition, Patricia Deen, Alan P. Trujillo, and Lisa D. Yon (2009).

Please note that the lab manual can only be purchased at Campus Books in San Marcos (Address: 1450 W. Mission Rd—it's just west of the San Marcos campus near the railroad tracks). Since this is a lab manual where pages will be written on and torn out, there are no used copies available. The lab manual must be brought to all class meetings—including field trips.

**Lab Manual
and Other
Supplies
(cont.)**

In the Introduction for each lab in the lab manual, there is a list of required equipment you'll need to bring to complete the lab. These are the required lab supplies that you will need during the semester:

- Lab manual
- Several #2 pencils with eraser
- Several colored pencils
- Ruler (metric system is best)
- Calculator (nothing fancy, any will do for most purposes)
- Clipboard for field trips
- Pencil sharpener (optional)

These items are available for sale at office supply stores. You may want to split the cost of these lab supplies with your lab partner(s). At the beginning of each lab, I will check to see if your group has the required lab equipment; if not, you and your group will lose points.

Attendance

Attendance is a requirement for the successful completion of this course. If you miss any classes, your grade will suffer. **ABSOLUTELY NO LATE REPORTS OR "MAKE-UPS"!** You will be allowed to attend another lab section (usually during the same week) once per semester if you obtain my approval. Even if you miss a lab, you are responsible for any missed work. Also, it is your responsibility to get any notes or assignments from another student for any missed class.

Arriving late for class will deprive you of time to complete the quiz normally given at the beginning of class.

**Adding and
Withdrawing
From the
Class**

Only students who are officially registered may participate in this class. If you are given a permission code to add this class, you must officially add the class prior to the next class meeting. If you have difficulty using the college's computerized enrollment system to add, please notify the instructor immediately. The deadline for adding any class or using a permission code to add is the end of the second week of classes. **Under no circumstance will students be allowed to add this class after the add deadline.**

Any student who misses either of the first two lab meetings will be dropped from the class if other students are wait-listed. After that time, it is the student's responsibility to initiate the procedure of withdrawing from a course by filing the proper form with administration; I will not do this for you. The instructor's signature is not required and you may withdraw through the eighth week of the semester. If you withdraw from the Oceanography 100 Lecture course at any time during the semester, you must also withdraw from this lab course.

Disabilities

If you have a disability that requires some accommodation, please speak with me and provide documentation within the first two weeks of class. Reasonable accommodation will be made.

**Lab
Procedures:
Before the
Lab**

To enable you to complete the lab within the 3-hour lab period, you must prepare for the lab before coming to class. This means that you **MUST** read the introductory reading for the designated lab in the lab manual. If you do not do this, you will not be able to finish the lab within the 3-hour lab period. Preparation before coming to class is essential!

**Lab
Procedures:
During the
Lab**

At the beginning of each laboratory session, there will be either a 10-point quiz covering the material from last week's lab or a field trip report due (worth 10 points). Then, the schedule for the following weeks will be clarified and important announcements will be made. A brief introduction to the lab by the instructor will help to explain some of the activities that you will complete in the lab. Also, tips and helpful hints to assist you in completing the lab exercise will be discussed. Then you can begin the lab exercise. You must work with lab partners in groups of two or three (not any larger groups, please).

All exercises must be done neatly and legibly in pencil. Basic algebra knowledge is essential: be sure to **show your work** when ANY mathematical computation is required. You will find that your lecture notes and lecture book will be invaluable resources to you in the lab. You shouldn't leave the lab with any wrong answers to the questions from the lab exercise. A lab teaching assistant (TA) will be available to help in the lab on an occasional basis. The lab TA and I are not here to simply give out correct answers; rather, our job is to *help you figure out the answers for yourself*. There might not always be a single "right" answer to a question—it may be how one views the question and interprets the data that's important in arriving at an answer. Don't be afraid to do interpretation but remember that you'll need to justify your answer!

All the lab exercises are lengthy but if you have prepared well and have come to work hard in lab, you will be able to finish the lab within the 3-hour lab period (including a short break). I will mark off points if you are taking too long to complete the lab due to not following directions, goofing off in lab, or because of your lack of preparation.

**Lab
Procedures:
Checking Out**

When your group has completed the lab exercise in class, you must check out with the instructor before leaving. You will be assigned 10 points for the work done in lab if it is satisfactory. Points will be deducted for incomplete or unsatisfactory work. Generally, if you have prepared for the exercise, follow directions in the lab, and are honestly working hard to learn the material, you will be able to finish the lab within the 3-hour lab period. If you finish early and your work has been checked off, you are free to leave

**Cell Phone
Usage**

Please turn off your cell phone or other electronic device before you arrive in class; otherwise, if it rings or is used during class time (other than as a calculator), it becomes my property for an undetermined period of time. Also, use of cell phones and other electronic devices are prohibited during all field trips.

**Food in the
Lab**

I don't mind if you bring in a drink or a light snack to eat during the lab but not a whole meal. You'll have too many other things to do in here besides eat food. Please clean up after yourself or I will revoke this policy. There will not be an official break during the lab but you can take a short break at any time. Also, if you socialize with your lab partners too much during lab time, you won't be able to finish the lab in the 3-hour lab period.

**Field Trip
Procedures
and Fees**

For the field trips, we will meet in the field at a designated time instead of meeting in class. Some flexibility in meeting times is essential so that we can meet during the times of good low tides. All field trips start in the field and end in the field. Consult the lab manual for locations and meeting times. Each field trip will last for approximately 2 hours in the field (except for the Dana Point Boat Trip, which is longer).

The field trips are opportunities to apply some of your knowledge and to observe

oceanographic phenomena in action. Come prepared to work (not surf or peoplewatch), take notes (some students bring a camera to document the field trip sites), and to learn (that's the whole idea!). Although no students have been seriously injured on any field trip in the past, there is always the potential of being injured while in the field. Please act responsibly and obey the instructor at all times. School policy prohibits firearms, illegal drugs, or alcohol on any field trip.

Note that there are these costs involved for the field trips:

- Oceanographic Boat Cruise \$40.00
- The Birch Aquarium at Scripps (class discount price) 7.00
- Your own transportation (car-pooling recommended, approximately 400 miles round-trip for all field trips)

The fee for the Oceanographic Boat Cruise is payable at the Cashier's Office, room A-2 or at PCEC Admissions. To accommodate your schedule, you may sign up for any of the scheduled boat trip dates on a first-come, first-served basis, starting around the middle of the semester (more information will be available later).

For the Birch Aquarium at Scripps, you will need to enter the aquarium through the education entrance, where the discounted admission price can be paid on-site.

**Field Trip
Cancellation
Policy**

If the weather looks threatening on a day that is scheduled for a field trip, you may want to check with me before going out to the meeting location. Generally, the weather has to be *really* bad for the field trip to be canceled (like roads washed away due to flooding or a water spout sighted offshore by the National Weather Service). If it is raining, we will probably go on the field trip anyway. On the day of the field trip, I will make a determination at least 2 hours before lab start time and leave a message on my voice mail (see phone number above). If the field trip is canceled, we will meet in class and do an alternate lab instead. Note that slight adjustments to the schedule (next page) may be made as weather, new developments, or other necessity requires.

**Academic
Dishonesty**

You are expected to act honorably and in accordance with the Palomar College Student Code of Conduct (see the Palomar College Student Handbook). Cheating of any type will not be tolerated. If you cheat on any quiz or assignment, you will be given 0 points for that quiz or assignment and you will also be expelled from class. Further, the incident will be reported to the Department Chair, Dean of Sciences, and the Director of Student Affairs.

Course Schedule: *Tuesday lab (PCEC)*

Semester Week Number	Calendar Date	Topic	Page Number	
1	January 19	Introduction to Marine Charts	3	
2	January 26	Imaging the Sea Floor	13	
3	February 2	Plate Tectonics and Sea Floor Features	27	
4	February 9	<i>Field Trip:</i> Case Study: Batiquitos Lagoon, Carlsbad ¹	187	
5	February 16	Marine Sediments	43	
6	February 23	Properties of Sea Water ³	65	
7	March 2	<i>Field Trip:</i> Coastal Cliff Erosion, Del Mar and Solana Beach ¹	175	
8	March 9	Global Winds and Ocean Currents	79	
9	March 16	El Niño–Southern Oscillation (ENSO)	95	
★ ★ ★ ★ ★ ★ ★ ★ Spring Break: No classes this week! ★ ★ ★ ★ ★ ★ ★ ★				
10	March 30	Investigating Ocean Waves	109	
11	April 6	Tides and Tidal Charts	125	
12	April 13	Coastal Navigation	157	
13	YOU MUST ATTEND ONE OF THE FOLLOWING BOAT TRIPS: Tuesday April 20, Thursday April 22, or Saturday April 24 The Ocean Institute Floating Lab, Dana Point Harbor ^{2,3} (Boat trips are 12:30 p.m.–4:30 p.m., except Sat. 9:00 a.m.–1:00 p.m.)		225	
14	April 27	Coastlines	143	
15	May 4	<i>Field Trip:</i> Case Study: Aqua Hedionda Lagoon ²	197	
16	May 11	<i>Field Trip:</i> The Birch Aquarium at Scripps, La Jolla ²	233	
17	FINAL EXAM WEEK: No class meeting			
¹ These field trips require a report due the following week. ² These field trips require a worksheet to be submitted at the end of the field trip. ³ These labs/field trips require that flat-soled, closed-toed shoes be worn in order to participate.				

Extra Credit There is no extra credit offered in this course.

Point Totals and Grading

The lowest of your lab scores will be dropped (which may represent an absence) in computing final grades as follows:

Assignment	Points
16 lab sessions @ 10 points each	160
2 field trip reports @ 10 points each	20
3 field trip worksheets @ 10 points each	30
6 quizzes @ 10 points each	60
Participation/lab procedures	20
SUBTOTAL	290
<i>Lowest lab (possible 20 points)</i>	<i>-20</i>
TOTAL POSSIBLE (subject to change)	270

Adjustments may be made to the point totals above as necessary. Note that one lab can be dropped without it adversely affecting your grade EXCEPT FOR the Oceanographic Boat Cruise (you must attend this field trip or your grade will automatically be lowered by at least one full grade!).

Participation/lab procedure points will be deducted for any of the following reasons: excessive tardiness, excessive absences, failure to bring the required lab equipment, verbatim copying of lab answers, plagiarism, not showing your work, not following procedures, lab work done in pen, inappropriate behavior or malicious conduct in the lab, or any other reason that the instructor sees fit.

Final grades will be assigned based on these cutoff percentages:

A = 93%
B = 87%
C = 80%
D = 70%
F = below 70%

I know that this grading scale seems quite high but the majority of the points (over half) are given just for showing up and doing the lab exercises in class (which is easy!). My experience has been that this is a fair grading scheme and I commonly give out a lot of A's and B's. I don't have a problem giving out a lot of high grades, as long as students are willing to work for them.

And Finally...

Don't hesitate to contact me to discuss any questions you may have about the course.

Welcome aboard!