# Geology 155 - Oceanography Laboratory

**Winter Quarter 2016** (12797, SEC 07) **Instructor**: Sonjia Leyva

**Hours**: Th 1:15 PM - 2:55PM  **Office:** Bios 125, 323-343-2149

**Room**: BIOS 119  **Office Hours:** TTh 11:00 – 11:20 AM

 **Webpage:** <http://geophile.net/> **Email:** sleyva@calstatela.edu

### Course Description:

### This lab class is the second portion of the Geol 155 Oceanography class. The laboratory requirement is met through 100 minutes of in-class instruction and two field trips: a 4 hour cruise on the Yellowfin oceanographic vessel and a 4 hour trip to a local beach. Fulfills 4 units in the B2 Block of the GE Requirements

### Course Objectives:

### This course is structured around an oceanographic cruise on our Research Vessel Yellowfin. In class we will learn about the bathymetry and features of the seafloor, the physical and chemical properties of water, the various types of marine sediments, and development of beaches and their response to human activity. On the cruise you will work with the instruments that oceanographers use to gather their data and you will take and record data readings. After the cruise is over and we are back in the classroom, we will work together with the collected data to interpret it and to help you gain a better understanding of how the oceanographers use the data to evaluate the nature, condition, and workings of the ocean.

Text & Materials:

1. Geol 155 Lab Oceanography Laboratory Manual, by Sonjia Leyva, available in the CSULA bookstore.
2. Color pencils (not crayons or markers)
3. Ruler (combination metric/standard scale)
4. Stapler to staple lab activities together prior to handing in



Schedule

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| --- | --- | --- | --- | --- | --- |
| **Week** | **Date** | **Quiz #** | **Topic** | **Assignment** | **Week Due** |
| 1 | 01/07 | 1 | Introduction & Bathymetry | Ex. 1 & 2  | 2 |
| 2 | 01/14 | 2 | Bathymetry | Ex. 3, 4, & 5  | 3 |
| 3 | 01/21 | 3 | Light Penetration | Ex. 6 | 4 |
| 4 | 01/28 | 4 | Sea Water Chemistry | Ex. 7  | 5 |
| 5 | 02/03 | - | Midterm  |
| 6 | 02/06 |  | Boat Trip 8 am – 12 pm | Field Trip Guides | 6 |
| 02/11 | 5 | Boat Trip Data Analysis  | Field Trip Guides | 7 |
| 7 | 02/18 | 6 | Coastal Processes(Last day to turn in extra credit emergency kits)  | Ex. 9 | 8 |
| 8 | 02/20 | - | Beach Trip  | Field Trip Guides | 8 |
| 02/25 | 7 | Beach Trip Data Analysis | Ex. 8 | 9 |
| 9 | 03/03 | 8 | Sediments | Ex. 8 | 10 |
| 10 | 03/10 | - | Final Exam |  |

Want to get a good grade? Here’s how:

1. Attend every class.
2. Take notes and review them after class and before exams.
3. Read your textbook / do the assignments
4. Turn in all work on time
5. Ask questions.
6. **Plan on spending one hour of studying for every unit you are taking. So a two unit class requires 2 hours of studying!**

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| --- | --- | --- |
| **Cheating and plagiarizing will not be tolerated.** |  | **ANYONE caught cheating or plagiarizing an assignment will receive an “F” in the class. NO EXCEPTIONS.** |

Requirements

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| *Class Attendance***:**  Students are expected to attend each laboratory period and to arrive on time. The laboratory period will start with a brief discussion on the techniques and concepts needed for the day's laboratory assignment. Since it will not be possible to go over these materials more than once during the laboratory period, it is necessary for students to arrive on time. It will be difficult to make up missed laboratory periods. However, if you miss a laboratory period of valid reasons (illness, etc.), it will up to you to make arrangements to complete the lab exercise. Student who are unable to provide proof of a valid absence will not be excused and will not be allowed to turn in/make up the lab.  |
| *Field Trips: Attending both field trips is an absolute requirement*. What we learn in class is geared to what we will observe during the field trip. Missing either or both field trips will result in your grade dropping by one full letter grade (ie, A 🡪 B). Students are required to complete and sign a waiver before attending the field trip. The waiver is required prior to the trip |
| *Lab Assignments* – Students will participate in a variety of laboratory experiments/exercises designed to introduce you to various aspects of Geology. The assignments will be due the following week at the beginning of class. Students are encouraged to work together in completing the laboratory work. However, each student should be sure to understand the techniques and concepts involved because midterm and final exam test problems will be very similar to laboratory problems. * **Labs are due the following week**
* **Labs MUST have all pages stapled together in order to be accepted.**
* **Late submissions will not be accepted**.
* **Students with unexcused absences will not be allowed to make up the missed work**.
* **Failure to make-up the laboratory activity within two weeks of the original date will result in the missed exam counting in as a zero.**
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| *Exams* **–** Two equally weighted exams are scheduled for the course: one midterm and one final. Each exam counts 100 points. Make-up exams will be given only to those who can verify a valid excuse for missing an exam. The make-up will be given at a time that is mutually agreeable to both the student and myself, but must be arranged prior to the initial exam. **Failure to take the make-up exam within two weeks of the original exam date will result in the missed exam counting in as a zero.** In addition, the exam question sheet must be returned to me after the exam and after the exam review. Failure to do so will result in a ten (10) point reduction in the student's grade for that exam. |
| *Weekly Quizzes* **–** The first 10 minutes of each lab period will be devoted to a short 10 point quiz which will cover what we will be doing in lab that day. **It is therefore important to come to lab on time.** Students arriving late but before the end of the quiz will be allowed to take the quiz, but must stop with everyone else. Students arriving after the end of the quiz will not be allowed to take it.  |

**Methods Of Evaluation**

Total possible class points will come from the following assignments:

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| --- | --- | --- | --- | --- |
|  | **Assignment** | **Points Possible** | **Total Points** | **% of grade** |
| Labs | 15 -40 points per lab | 200 | 33% |
| Field Trips | 50 points each | 100 | 17% |
| Exams | 100 points each | 200 | 33% |
| Weekly Quizzes | 15 points each | 80 | 13% |
| Attendance | 2 points/day | 20 | 3% |
|  |  | **600** | **100%** |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Grade** | **Total Points** | **Points applied to lecture grade (100% = 25 points)** |
| A = >90% | > 540 points | 22.5 - 25.0 points |
| B = 80-89% | 480 – 539.9 points | 20.0 - 22.5 points |
| C = 70-79% | 420 – 479.9 points | 17.5 - 20.0 points |
| D = 60-69% | 360 – 419.9 points | 15.0 - 17.5 points |
| F =< 60% | <360 points | < 15 points |

You may do up to 20 points of extra credit work to raise your total points earned. Your grade is based on your percentage score out of 600 points. Grades will be assigned using + and - (i.e., B+, B or B-). **All extra credit with the exception of the EQ kit is due the last day of class - not the day of the final!**

YOUR LAB GRADE IS WORTH ONE QUARTER (25%) AND YOUR LECTURE GRADE IS WORTH THREE QUARTERS (75%) OF YOUR OVERALL GENERAL GEOLOGY GRADE.

# Geol 155 Field Trips

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| --- | --- |
| BOAT TRIP | BEACH TRIP |
| **When**: Saturday, February 6th, 8:00 to ~12:00 pm**NOTE: The boat will leave PROMPTLY at 8 am. We will not wait for late students.** | **When**: Saturday February 20th, 10:00 am to 2:00 pm**NOTE: Parking is $1/hour! We will be there around 4 hours, so plan on paying between $4 -$5 for parking.**  |
| **Where**: Southern California Marine Institute820 South Seaside Ave., Terminal Island, CA 90731Phone: (310) 519-3172 Fax: (310) 519-1054 | **Where**: Cabrillo Marine Aquarium - 3720 Stephen White DriveSan Pedro, California USA 90731(310) 548-7562 FAX (310) 548-2649 |
| **What to bring:** * Yourself (no guests)
* the Cruise data sheets
* Pencils
* Water, munchies
* Dress for the weather: Jeans, a t-shirt, sturdy sneakers, sunglasses, sunscreen, a rain jacket (if there's a chance of rain), a hat, a daypack to put it all in.
* A camera
* An extra pair of glasses in case yours goes overboard, or your contacts start to bother you
 | **What to bring:** * Yourself (no guests)
* Cabrillo Beach Trip Worksheets
* $4 - $5 for parking
* A bag of empty aluminum (soda) cans OR a $5 donation for the museum
* Pencils
* Water, munchies
* Dress for the weather: Jeans or shorts; t-shirt; sandals or flip-flops are fine, otherwise sneakers; sunglasses and sunscreen; a jacket; a hat; and a daypack to put it all in.
* A camera
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| **What NOT to bring:*** A bad attitude (leave it at home)
* Illegal stuff (use your imagination)
* Children, pets, significant others

Geol150fieldtrip.png | **What NOT to bring:*** A bad attitude (leave it at home)
* Illegal stuff (use your imagination)
* Children, pets, significant others
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IMPORTANT POLICIES (a.k.a. the “fine print”)

*Statement of Reasonable Accommodation:*

* The Department of Geological Sciences faculty members fully support the Americans with Disabilities Act (ADA). The members of the faculty will provide reasonable accommodation to any student with a disability who is registered with the Office of Students with Disabilities (OSD) who needs and requests accommodation. The faculty may wish to contact the OSD to verify the presence of a disability and confirm that accommodation is necessary. The OSD will arrange and provide for the accommodation.
* Reasonable accommodation may involve allowing a student to use an interpreter, note taker, or reader; accommodation may be needed during class sessions and for administration of examinations. The intent of the ADA in requiring consideration of reasonable accommodation is not to give a particular student an unfair advantage over other students, but simply to allow a student with disability to have an equal opportunity to be successful.

*Student Conduct:*

* Student conduct is viewed as a serious matter by the faculty members of the Department of Geological Sciences. The Department faculty members assume that all students will conduct themselves as mature citizens of the campus community and will conduct themselves in a manner congruent with university policies and regulations. Inappropriate conduct is subject to discipline as provided for in Title 5, California Code of Regulations (see student conduct: rights and responsibilities, and student discipline, CSULA General Catalog). Academic honesty is expected of all students in the Department, in accordance with University policy. There are established university reporting procedures if a student is suspected of committing an academically dishonest act.
* The University has a clearly defined policy on Academic Honesty. This policy will be enforced in this class. **Cheating and plagiarizing will not be tolerated.** Students caught plagiarizing and/or cheating will be subject to the consequences and set forth in the University Catalog, Appendix D - Academic Honesty. You can access it online at: <http://catalog.calstatela.edu>
* **Cheating and plagiarizing will not be tolerated.**

*Make-up exams:*

* Make-up exams will be given only to those who can verify a valid excuse for missing a quiz. The make-up will given at a time that is mutually agreeable to both the student and myself. **Failure to take the make-up exam within two weeks of the original exam date will result in the missed exam counting in as a zero.**

*Grading:*

* University policy allows a grade of incomplete to be given only to those who have been sick, injured, or have a similar valid excuse. A grade of “incomplete” will not be given after poor performance in the course.
* If you are repeating any Cal State L.A. course in order to remove a D or an F from your transcript, you must file an **academic renewal petition** in Administration 101 no later than the last day to add a class. Instructions for doing this may be found under **"Academic Renewal"** in your Schedule of Classes.
* University policy requires that all students shall be graded in *exactly* the same fashion. What does this mean? You may not ask for extra assignments or to repeat an exam to improve your grade, or additional assignments after the course is completed.

**Avoid the hassles.**Take the Writing Proficiency Examination (WPE) after you have completed your English Composition and prior to the completion of 135 units in order to avoid a registration hold. The dates for the WPE are published in the Schedule of Classes. Enroll by registering in UNIV 400 and paying the exam fee.

Extra Credit

You have the opportunity to earn extra credit in any of my classes if you wish. All work, with the exception of the emergency kits, must be turned in by the end of the class period before the final exam. You may earn up to 20 points of extra credit by doing any combination of the following assignments listed below.

1. (*1 point each*) Do one of the following activities from Center for Microbial Oceanography: Research and Education (C-MORE) website:
	1. Take the [Microbe Personality Quiz](http://cmore.soest.hawaii.edu/education/kidskorner/microbe_quiz.htm) to learn more about the microbes that live in the ocean. Copy/paste what microbe you are in an email and send it to me OR print out the page showing what microbe you are and hand it to me during class. (http://cmore.soest.hawaii.edu/education/kidskorner/microbe\_quiz.htm)
	2. Do the [Microbial Oceanography Word Search](http://cmore.soest.hawaii.edu/education/kidskorner/wordsearch.htm) to learn more about the microbes that live in the ocean. Then, print out the completed word search and hand it to me during class. (http://cmore.soest.hawaii.edu/education/kidskorner/wordsearch.htm)
	3. Are you smarter than a microbe? [Test Your Microbe IQ!](http://cmore.soest.hawaii.edu/education/iq/index.htm) At the end, either print out your score and hand it to me during class, or copy/paste it in an email and send it to me. Don’t forget to enter the drawing for a chance to win a plush microbe. (http://cmore.soest.hawaii.edu/education/iq/index.htm)
2. (*5 points*) In essay format, discuss three ways that you can help clean up the oceans or coasts.
	1. The ONLY item at the top of your paper should be your name.
	2. Paper should be 1 to 2 pages, typed, 1.5 spacing, standard margins and fonts and concise.
	3. The quality of your English composition is important. Don't forget to use correct essay form - Intro paragraph with thesis statement, three examples, and conclusion paragraph.
	4. Please remember that I am concerned about the environment. I do not want plastic covers, extra cover pages, or any other type of binder.
3. (*15 points*) Find 3 articles that deal with geological issues and write a summary of each article. Combine the 3 summaries into a paper that is no more than 2 pages long. Articles may be found in the Los Angeles Times, Discover Magazine, Newsweek, Time Magazine, California Geology (in the Library), etc. Provide your opinion or analysis.
	1. The ONLY item at the top of your paper should be your name.
	2. Paper should be 1 to 2 pages, typed, 1.5 spacing, standard margins and fonts and concise.
	3. The quality of your English composition is important. Don't forget to use correct essay form - Intro paragraph with thesis statement, three examples, and conclusion paragraph.
	4. A **bibliography** and **copies of your articles** are required as well.
	5. Please remember that I am concerned about the environment. I do not want plastic covers, extra cover pages, or any other type of binder.
4. (*10 points*) Do one of the Virtual Classware assignments located at [**http://www.sciencecourseware.com/**](http://www.sciencecourseware.com/). Click on "[**Geology Labs Online**](http://www.sciencecourseware.com/GLOL/)" and choose one of the activities listed below. Upon completion of the assignment, you will be awarded a certificate that you will need to print out and turn in.
	1. You may do more than one of the exercises, but they must be two DIFFERENT activities: Virtual Earthquake, Virtual river (River Discharge), Virtual river (River Flooding), Virtual Seismologist, Virtual Radiochronologist (isochron), Virtual Radiochronologist (radiocarbon) or Virtual Climatologist
	2. Your name MUST be on the certificate. No exceptions.

See other side!

1. (*15 points*) Create a [**mini-emergency kit**](http://www.geophile.net/ExtraCredit/Mini%20Earthquake%20Kit.pdf)! You must show me the completed kit and a list of the items inside. You must have EVERYTHING that is on the list - no exceptions!
	1. YOU MUST INCLUDE THE LIST WITH YOUR KIT! Here's a list (<http://www.geophile.net/ExtraCredit/Mini%20Earthquake%20Kit.pdf>) of required items.
	2. Bring the kit to my office during office hours BEFORE the date specified on your syllabus
	3. Hand-written lists are not acceptable.
	4. ALL KITS ARE DUE THE 7TH WEEK OF CLASSES (see syllabus for the date). NO EXCEPTIONS!
2. (*15 points*) Create at Disaster Plan for your home.
	1. Use [this template](http://www.geophile.net/ExtraCredit/ExtraCredit_EmergencyPlan_template.docx) (http://www.geophile.net/ExtraCredit/ExtraCredit\_EmergencyPlan\_template.docx) to complete this report.
	2. Visit the My Hazards Awareness Map Web site (<http://myhazards.calema.ca.gov/Default.aspx>). Put in your home address in the search bar at the top of the page, then click “Map Search”. The program will then look up your address and determine if it is in a hazard zone.
	3. Create an Emergency Disaster Plan for yourself and your family. This plan should be tailored to you and your family’s needs and should be for any type of emergency. Items to include are:
	* A map of your house (or apartment) showing the location of major utilities (gas, water, etc.), escape route & earthquake supplies and potential hazards (heavy furniture, bookcases, large windows or mirrors, etc.). This map may be hand-drawn
	* An evacuation plan – how are you going to exit your home, where are you going to meet, etc.
	* A list of household members (Identify anyone with impairments or who may need help evacuating), including contact phone numbers.
	* The name and phone number of an out-of-state contact
	* Go to the Be Red Cross Ready site at:  [http://arcbrcr.org/](%20http%3A/arcbrcr.org/). On the “Create Your Own Emergency Preparedness Kit” page, fill out all of the information for YOUR family, then click “calculate” This will show you how much of each supply you will need for your family. Then click on the “click here to send your customized emergency preparedness list”. Fill out the required information and email the list to yourself. Include this list in your report.