# Geology 155 - Oceanography Lecture

**Fall Quarter 2015** (92745, SEC 02) **Instructor**: Sonjia Leyva

**Hours**: Th 9:50AM - 11:05AM  **Office:** Bios 125, 323-343-2149

**Room**: SH 246  **Office Hours:** TTh 9:00 – 9:30 AM

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### Course Description:

### Geology 155 is an introductory oceanography course designed to provide students with the knowledge of some of the basic fundamentals and concepts of oceanography, familiarize you with scientific methods and terminology, and provide a basic understanding of how the earth works. Whatever profession or vocation you choose, as a citizen and a voter you will have to make decisions concerning problems either directly or indirectly related to the earth sciences, and the oceans in particular.

### This lecture class is the first portion of the Geology 155 Oceanography class. Students MUST enroll in the laboratory portion of this class. YOUR LAB GRADE IS WORTH ONE QUARTER (25%) AND YOUR LECTURE GRADE IS WORTH THREE QUARTERS (75%) OF YOUR OVERALL GENERAL GEOLOGY GRADE.

**Plan on spending one hour of studying for every unit you are taking. So a four unit class requires 4 hours of studying!**

### Lecture 3 hours, Laboratory 3 Hours. Fulfills 4 units in the B2 Block of the GE Requirements

### Course Objectives:

Upon successful completion of this course, the student will be able to:

* Explain the fundamental differences between continents and ocean basins, and explain how ocean basins originate, develop and are destroyed on the basis of plate tectonic models.
* Know the physiographic subdivisions of the ocean basins and how the characteristics of each are related to plate tectonic, depositional and erosive processes.
* Know the chemical composition and range of physical properties of seawater and those processes that regulate it.
* Explain how horizontal oceanic circulates affects vertical circulation.
* Understand the coupling between atmospheric and oceanic circulation with respect to wind-driven and geostrophic currents.
* Explain how waves originate, propagate, and refract and reflect on coastlines to produce longshore currents, littoral drift and depositional-erosion features.
* Explain how man's engineering structures can impact natural balanced coastal processes.
* Explain how marine sediments are classified and which chemical and physical principles determine their distribution.

Text & Materials:

* Enrollment in this class in Moodle
* Textbook: Essentials of Oceanography, 11/e, by Trujillo & Thurman (ISBN: 9780321814050)
* Geol 155 Lecture Notes, available in the bookstore
* Handouts, activities, videos, etc.

Schedule

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| **Week** |  | **Topic** | **On-Line Quiz** | **Dates Available** | | |
| 1 | 9/24 | Introduction, Origins | **-** | **-** | | |
| 1 | 9/29 | Origins | #1 | 9/28 | - | 10/4 |
| 10/1 | Plate Tectonics |
| 2 | 10/6 | Plate Tectonics | #2 | 10/5 | - | 10/11 |
| 10/8 | Plate Tectonics |
| 3 | 10/13 | Plate Tectonics | #3 | 10/12 | - | 10/18 |
| 10/15 | Features of the Seafloor |
| 4 | 10/20 | Marine Sediments | #4 | 10/19 | - | 10/25 |
| 10/22 | Marine Sediments |
| 5 | 10/27 | **MIDTERM EXAM** | #5 | 10/26 | - | 11/1 |
| 10/29 | Video: Tsunami, Killer Wave |
| 6 | 11/3 | Seawater | #6 | 11/2 | - | 11/8 |
| 11/5 | Seawater |
| 7 | 11/10 | Atmospheric Circulation | #7 | 11/9 | - | 11/15 |
| 11/12 | Atmospheric Circulation  **(Last day to turn in extra credit emergency kits)** |
| 8 | 11/17 | Oceanic Circulation | #8 | 11/16 | - | 11/22 |
| 11/19 | Oceanic Circulation |
| 9 | 11/24 | Waves | #9 | 11/23 | - | 11/29 |
| 11/26 | **Thanksgiving - Campus Closed** |
| 10 | 12/1 | Coastal Processes **(Last day to turn in extra credit)** | #10 | 11/30 | - | 12/6 |
| 12/3 | Coastal Processes |
| 11 | **12/10** | Final Exam 10:45-1:15 p.m. | **-** | **-** | | |

Requirements

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| *Class Attendance***:**  Students are expected to attend each class session and to arrive on time. It will be difficult to make up missed class sessions. However, if you miss a class session of valid reasons (illness), it will up to you to make arrangements to complete the activity. Students who miss a class due to an unexcused absence will NOT be allowed to make up the work. Make-up assignments will be given only to those who can verify a valid excuse for missing the assignment. The make-up assignment will be given at a time that is mutually agreeable to both the student and me. Failure to take the make-up assignment within one week of the original assignment date OR before the last week of class will result in the missed exam//assignment counting in as a zero. All proof of excused absences MUST be shown PRIOR to the student making up the assignment/exam, and MUST be BEFORE the last day of class. Students may be dismissed for 10 hours of absence. If you drop the class you must do so officially or you may receive an “F”. |
| *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* **–** Students are required to log onto Moodle and take a weekly quiz. Each quiz will be worth 10 points and will be based upon the online reading assignments listed in Moodle. Students may access the quiz anytime from 8 am Monday through midnight Sunday. Students may take the quiz only once. Students who do not take the quiz during the allowed time will not be allowed to make up the quiz unless they have an excused absence. No exceptions! |

**Methods Of Evaluation**

Total possible class points will come from the following assignments:

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|  | **Assignment** | **Points Possible** | **Total Points** | **% of grade** |
| **Exams** | 2 @ 50 points each | 100 | 25% |
| **Quizzes** | 10 @ 10 points each | 200 | 50% |
| **Lab Grade** | 100 points total | 100 | 25% |
|  | **Total** | **400** | **100%** |

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| Your grade in this class is based upon the points YOU earn through completing assignments, quizzes, assignments, and exams. Nothing in this class is curved. Your grade is based upon your performance. Your final grade in this class is based on your percentage score out of 400 points. See the table to the right.  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!** By doing extra credit you agree that you will NOT ask to have your grade “bumped up” at the end of the quarter. | A = > 90% | > 360.0 points |
| B = 80 - 89% | 320.0 - 359.9 points |
| C = 70 - 79% | 280.0 - 319.9 points |
| D = 60 - 69% | 240.0 - 279.9 points |
| F = < 60% | < 300.0 points |
|  |  |

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

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.** |

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:/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.