



GEOL 115: Oceanography Syllabus – Spring 2012

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Office: Brown Hall, Room #105, phone (515) 229-5248
Office hours: M, W 4:00-5:00PM, T 10:00-11:00AM; *or by appointment*
Lectures: M, W, F 8:30AM - 9:30AM, Bloomer Auditorium (Brown #122)
Teaching instructor: Coral Carpenter, crcarp09@stlawu.edu
Help sessions: *TBA*

TEXTBOOK (REQUIRED)

Trujillo, A.P., and Thurman, H.V., 2010, *Essentials of Oceanography*, 10th edition: Pearson Prentice Hall, New Jersey, 551 p.

ON-LINE STUDY GUIDE

An Online Study Guide is available at <http://www.mygeoscience.com/>. It features chapter-specific learning objectives, on-line quizzes, critical-thinking exercises, and relevant Internet links. See the "Your Access to Success" card inside the front cover of each textbook or purchase an access code online

STUDENT ANIMATIONS CD-ROM

Every new copy of the textbook includes Student Animations CD, which contains over 30 animations to help students visualize some of the key oceanographic processes.

FREE, ON-LINE TEXT

Stewart, R.H., *Introduction to Physical Oceanography*, Texas A&M University, College Station

(http://oceanworld.tamu.edu/resources/ocng_textbook/PDF_files/book_pdf_files.html).

Tomczak, M. and Godfrey, J.S., *Regional Oceanography: An Introduction* (<http://gyre.umeoce.maine.edu/physicalocean/Tomczak/regoc/pdfversion.html>)

WWW RESOURCES (GENERAL SITES OF INTEREST)

- The National Oceanic and Atmospheric Administration (NOAA): <http://www.noaa.gov/>
- The U.S. Geological Survey Coastal and Marine Geology Program: <http://marine.usgs.gov/>
- *Ocean Planet* Exhibition by the Smithsonian Institution's National Museum of Natural History: http://seawifs.gsfc.nasa.gov/ocean_planet.html
- Woods Hole Oceanographic Institution: <http://www.whoi.edu/>

- Scripps Institution of Oceanography: <http://sio.ucsd.edu/>
- Lamont-Doherty Earth Observatory: <http://www.ldeo.columbia.edu/>

SLU ANGEL LEARNING MANAGEMENT SUITE (<https://angel.stlawu.edu>)

There is an ANGEL site for this course. It contains a variety of documents needed for this course, including lecture material, animations, videos, exercises, critical thinking assignments, online quizzes, review Q & A, examples of past exams with keys, the syllabus, various online resources, and a calendar with important course dates. Please contact Information Technology (x5770 or x5595) if you have problems accessing ANGEL.

COURSE NOTES

Each lecture has a handout that provides material essential for understanding the lecture. These handouts, along with other course materials, are available for free download at the SLU ANGEL Learning Management Suite (<https://angel.stlawu.edu>). You should download lecture handouts before the start of each class. This allows you to follow along as I tend to use lots of pictures and graphs in my PowerPoint presentations. The best strategy is to pay attention and add your own comments on the handouts as we progress. You can treat the collection of lecture handouts as an additional textbook. You should get a three-ring binder in order to keep the handouts organized.

OTHER REQUIRED MATERIALS

Students will need to download and print exercise handouts before the start of each exercise; exercises are indicated with **green print** in the course schedule. Students will also need a calculator, ruler, and protractor. You will be required to use these materials, so please plan accordingly.

COURSE DESCRIPTION

This is a broad introductory course on oceanography that explores the oceans of the world, the living organisms of the ocean, and the vast mineral wealth of the ocean floor. The course explores Oceanography through the discussion of elementary scientific concepts framed within the context of some different areas within the sciences of Geology, Biology, Chemistry and Physics. Topics include the origin of oceans; the composition and history of seawater; oceanic currents, tides, waves and beaches; the sea floor; plant and animal life in the sea; oceanic resources and food; and marine pollution.

COURSE GOALS

This course is an interdisciplinary science course covering a wide diversity of topics. The purpose is to provide you with a background information on geological, chemical, physical and biological foundations of oceanography. After having finished this course, a student should be able to understand an interdisciplinary nature of ocean sciences.

COURSE EXPECTATIONS

Attendance and active participation is required at all classes, and students are expected to be on time as a courtesy to one another. You are allowed three “cuts” or unexcused absences. Missing a fourth class will result in an automatic 20% reduction to the class

attendance component of the final course grade! Additional 20% reductions to the class attendance component of the final course grade will be incurred for each additional absence. Excused absences are for reasons beyond your control and are unavoidable, such as being hospitalized. You may need to provide documentation if asked.

Reading assignments should be completed prior to class, and corresponding on-line quizzes taken on ANGEL.

COURSE SCHEDULE

(May be subject to modification as the semester progresses to allow the most effective completion of all in-class activities). Readings are from Trujillo and Thurman.

WEEK #	DATE	DAY	LECTURE TOPIC	READINGS
1	1/23/2012	M	Introduction	Preface & Introduction
	1/25/2012	W	Introduction to Planet Earth	Ch. 1
	1/27/2012	F	Introduction to Data Analysis	Ex. 1
2	1/30/2012	M	Plate Tectonics & Ocean Floor	Ch. 2
	2/1/2012	W		
	2/3/2012	F	Marine Charts	Ex. 2
3	2/6/2012	M	Marine Provinces	Ch. 3
	2/8/2012	W		
	2/10/2012	F	Seawater temperature, salinity & density	Ex. 3
4	2/13/2012	M	Marine Sediments	Ch. 4
	2/15/2012	W		
	2/17/2012	F	IN-SEMESTER EXAM #1	Revisit Ch. 1-4
5	2/20/2012	M	Water & Seawater	Ch. 5
	2/22/2012	W		
	2/24/2012	F	Exam #1 Review	
6	2/27/2012	M	Air-Sea Interaction	Ch. 6
	2/29/2012	W		
	3/2/2012	F	Ocean Leadership Distinguished Speaker: Steve Pekar	Have questions ready!
7	3/5/2012	M	Ocean Circulation	Ch. 7
	3/7/2012	W		
	3/9/2012	F	No classes. Instructor on the Bahamas teaching a field course.	
8	3/12/2012	M	Spring Break All Week!	
	3/14/2012	W		
	3/16/2012	F		
9	3/19/2012	M	Waves & Water Dynamics	Ch. 8
	3/21/2012	W		
	3/23/2012	F	IN-SEMESTER EXAM #2	Revisit Ch. 5-7
10	3/26/2012	M	Tides	Ch. 9
	3/28/2012	W		
	3/30/2012	F	Exam #2 Review	
11	4/2/2012	M	The Coast: Beaches and Shoreline	Ch. 10

	4/4/2012	W	Processes	
	4/6/2012	F	IN-SEMESTER EXAM #3	Revisit Ch. 8-10
12	4/9/2012	M	The Coastal Ocean	Ch. 11
	4/11/2012	W		
	4/13/2012	F	Exam #3 Review	
13	4/16/2012	M	Marine Life & the Marine Environment	Ch. 12
	4/18/2012	W		
	4/20/2012	F	Waves at Sea	Ex. 4
14	4/23/2012	M	<i>No classes. Instructor at AAPG Meeting in Long Beach.</i>	
	4/25/2012	W		
	4/27/2012	F	Biological Productivity & Energy Transfer	Ch. 13
15	4/30/2012	M	IN-SEMESTER EXAM #4	Revisit Ch. 11-13
	5/2/2012	W	Animals of the Pelagic Environment	Ch. 14, 15
	5/4/2012	F	Animals of the Benthic Environment	
16	5/9/2012	W	FINAL EXAM	All Chapters

CHANGE OF SYLLABUS AND CLASS SCHEDULE, POP-QUIZZES, UNSCHEDULED ASSIGNMENTS

The instructor reserves the right to modify the syllabus and class schedule at any time during the semester. Students will be notified of such changes in a timely manner. The instructor also reserves the right to administer pop-quizzes and assign unscheduled homework and/or class assignments at any time. All students will be responsible for completing this work and it will comprise part of the final class grade.

GRADING

The final grade will be determined based on the following: 4 in-semester exams 40% (lowest exam score dropped), final exam 20%, assignments 20%, on-line quizzes 15%, and class attendance 5%. The exam content will focus largely on the lecture notes and any sections recommended directly from the textbook. The lowest exam score will be dropped, but no make-up tests will be allowed. The final exam is comprehensive and will contain material covered from all parts of the course.

On-line quizzes need to be taken before their due dates (see Calendar). Each assessment consists of 12 questions (true/false, multiple choice and/or word analysis) related to reading assignments, i.e., chapter readings in your textbook. I have prepared a set of 15 online quizzes that will be submitted, administered and graded online by using the ANGEL software. This eliminates needless waste of paper, and makes your assignments slightly more enjoyable for both of us. Each assessment can be taken only once, and is time limited to 30 minutes. Students missing a quiz will receive an automatic 0 (zero) on the quiz missed. Note that there are 15 on-line quizzes, and the lowest quiz score will be dropped.

The assignments will relate to topics covered in class and consist of (i) in-class exercises, and (ii) critical thinking exercises to be completed outside of normal class time.

Final grade will be consistent with the 0 to 4 grading scale, and will be determined as follows:

Percent range	Final grade	Percent range	Final grade
97.01 or more	4	76.01-79.00	2.25
94.01-97.00	3.75	73.01-76.00	2
91.01-94.00	3.5	70.01-73.00	1.75
88.01-91.00	3.25	67.01-70.00	1.5
85.01-88.00	3	64.01-67.00	1.25
82.01-85.00	2.75	61.01-64.00	1
79.01-82.00	2.5	61.00 or less	0

HONOR CODE

At St. Lawrence, all members of the University community have a responsibility to see that standards of honesty and integrity are maintained. It is the responsibility of each student to learn and understand the standards of academic integrity expected at St. Lawrence, as expressed in the University's academic honor code. Additional information regarding academic honesty, plagiarism and academic dishonesty procedures and penalties can be found in the Student Handbook (p. 148-153).

SPECIAL NEEDS

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Director of the Office of Academic Services for Students with Special Needs (John Meager +5104, Secretary +5537) as early as possible in the semester.