

**College of the Redwoods Mendocino Coast Campus**  
**Introduction to Oceanography**  
**Course Syllabus Fall 2012**

**Ocean 10 – Section 032466 – 3.0 Units**  
**Friday 9AM -12:10 PM Room 122**

**Instructor:** Jason Robert Patton

**email:** [Jason-Patton@redwoods.edu](mailto:Jason-Patton@redwoods.edu)

**Voicemail:** 707. 962.2667 (If you leave a voicemail, please state your name, phone, and time that you called, in addition to the topic.)

**Office:** Room 101

**Office Hours:** Thursday afternoon by appointment

**Required Text:** Alan Trujillo & Harold Thurman, Essentials of Oceanography, 10<sup>th</sup> ed., 2010

**Required Supplies:** three ring binder for class handouts including blank paper for drawing illustrations and notes during class; colored pencils for making illustrations better, USB “thumb” drive.

Contact: Please don't hesitate to email me with any questions, comments, or concerns. I welcome any feedback or suggestions. The best way to contact me for any reason is by sending an email directly to my CR email [Jason-Patton@redwoods.edu](mailto:Jason-Patton@redwoods.edu)

Alternatively, you may leave me a voice mail message (see phone number at the top of this syllabus). Please do not send messages through the myCR 'messages' application.

### **Course Description**

An introduction to the world ocean including marine geology, plate tectonics, oceanic circulation, fundamental physical and chemical properties of seawater, atmospheric-oceanic relationships, marine environments, and productivity.

### **Course Learning Outcomes**

1. Make reasonable interpretations of oceanographic data.
2. Apply the scientific method to the critical evaluation of data and concepts.
3. Identify the underlying concepts and physical and chemical processes of oceanography in a variety of different areas.
4. Recognize and discuss the relationships between physical and chemical environmental factors and the organisms and populations characteristic of an area.
5. Identify the primary forces responsible for oceanic circulation.
6. Discuss the relationships between oceanic processes and local and global climate and weather.

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7. Use their understanding of oceanographic principles to interpret and discuss the processes affecting coastal areas.
8. Explain plate tectonics and discuss multiple lines of scientific evidence that support this theory.
9. Describe in writing the processes involved in the formation of sediments in the ocean, and identify the principal source materials for each of the basic types of marine sediments

**Grading**

Your final grade will be comprised of:

<u>Summary</u>	<u>Points</u>
3 Mid Terms and 1 Final Exam	400
Course Notes and Illustrations	180
Activities	100
Online Quizzes	100
Research Paper Outline	50
Research Paper	120
<u>Video Presentation (~5 minutes)</u>	<u>50</u>
Total	1000

There are 1000 points available and grades are assigned by the percentage of total points as follows:

1000-940=A	939-900=A-	899-870=B+	869-830=B	829-800=B-
799-770=C+	769-700=C	699-670=D+	669-600=D	<599=F

**Classroom Conduct**

Side conversations among classmates are disrespectful and disruptive to the instructor and your fellow students. Questions or comments about the course material are welcome at all times but should be approached in a respectful manner.

The use of cell phones, iPods, or other items that may distract you, your instructor, or your classmates are not permitted during class. All such devices must be turned off.

You may not leave the room during an exam or quiz unless you are ready to turn in your finished exam.

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**Academic Honesty**

You are encouraged to work together to review notes from lectures, to work on problems from the text, and to formulate ideas for any take-home assignments. However, all work you turn in must be your own independent, original work.

In the event that any work is copied from another student, zero credit will be given to all students involved (regardless of who copied from whom).

Any sources of information used in your written work must be referenced (regardless of whether the material was copied word-for-word). This includes your text book and all internet sources (reference these by including the name and URL). Any work including un-referenced material from another source (regardless of whether it was copied word-for-word) will be given zero credit.

Academic Misconduct: Cheating, plagiarism, collusion, abuse of resource materials, computer misuse, fabrication or falsification, multiple submissions, complicity in academic misconduct, and/ or bearing false witness will not be tolerated. Violations will be dealt with according to the procedures and sanctions proscribed by the College of the Redwoods. Students caught plagiarizing or cheating on exams will receive an "F" in the course.

Academic dishonesty in any form may be reported to the vice president of CR, as per the student code of conduct available at <http://www.redwoods.edu/District/Board/New/Chapter5/Ap5500.pdf> See in particular page 9, Article VIII which begins "Students are expected to demonstrate qualities of morality, integrity, honesty, civility, honor, and respect."

College of the Redwoods is committed to equal opportunity in employment, admission to the college, and in the conduct of all of its programs and activities.

**Tentative Class Schedule\***

<u>Date</u>	<u>Topic</u>	<u>Readings</u>
8/31/12	Course Introduction; Origins & Structures of the Earth	Ch. 1
9/7/12	Plate Tectonics	Ch. 2
9/14/12	No Class (Read ahead on your own)	
9/21/12	Ocean Basins; Marine Sediments	Ch. 3, 4
9/28/12	<u>Research Paper Outline Due; Mid Term I</u> ; Chemical Oceanography	Ch. 5
10/5/12	Atmospheric Circulation; Air-Sea Relations; Ocean Circulation	Ch. 6, 7
10/12/12	Waves and Tides	Ch. 8, 9

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10/19/12	<b><u>Mid Term II</u></b> ; Prepare for Oceanographic Cruise	
10/26/12	<u>Oceanographic Cruise (7A - 3PM)</u>	
11/2/12	Coastal Oceanography: Beaches, Coastlines, and Estuaries	Ch. 10, 11
11/9/12	Biological Oceanography: Classification and Energy Balance (Productivity)	Ch. 12, 13
11/16/12	<b><u>Mid Term III</u></b> ; Biological Oceanography: Pelagic Environment	Ch. 14
11/23/12	Holiday: Thanksgiving Break (Read ahead on your own)	
11/30/12	Biological Oceanography: Pelagic Environment <u>Five Minute Video Presentation Report Due; Research Paper Due</u>	Ch. 15
12/7/12	Oceans and Climate Change <u>Five Minute Video Presentations</u>	Ch. 16
12/14/12	<b><u>Final Exam</u></b> ; <u>Course Notes and Illustrations are due</u>	

**\* Note: Instructor reserves the right to make changes to course schedule as deemed necessary.**

**College of the Redwoods Resources and Information**

Disabilities: College of the Redwoods is dedicated to providing access to all classes for persons with disabilities. If you have a verified disability and need accommodation, or suspect you have a disability and wish to be evaluated for eligibility, you are encouraged to speak with Carole Freeman at 707.962.2638.

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Mid-Term/Final Exams: The 3 midterms and final are worth 100 points each. The exams are a mix of multiple choice, true/false, short answer, and essay questions based on the lectures, activities, homework, and course reading. Mid-term exams cover the material since the beginning of the course or the last exam, or whatever is most recent. The final is cumulative and will focus on the “big picture” view that is comprehensive of all subjects covered earlier in the course. Each student is required to submit a multiple-choice question for the Final Exam based on the information presented by the students during their Five Minute Video Presentations.

Missing an exam: All make-up exams should be arranged for in advance when possible. In the event of an emergency or sudden illness that prevents you from attending the exam, you must contact me as soon as possible and arrange a time for the exam to be completed before our next regular class time. If you miss an exam (and do not contact me to make it up) or if you arrange a makeup that you do not take, you will receive a zero for that exam.

Course Notes and Illustrations: Each lecture will include handouts (of the presentation for that day) and several on-board illustrations that relate to the specific topic being discussed for that day. You can use the handouts to take notes and your notebook to copy and label any illustrations. You are required to have a three-ring binder containing these handouts at every class. You will turn in your notebooks at the end of the semester along with your activities and homework that has been completed through the semester. Credit is given for careful reproduction of the illustrations including any notes, labels, and graphs.

Activities: Each week we will focus on a specific topic, and use some of the class time to develop these themes. You may need to spend some time out of class completing the activities. There are 10 activities throughout the course, each worth 10 points.

Reading: In this syllabus I provide a list of required reading in the Trujillo and Thurman’s *Essentials of Oceanography* textbook for each week. The student is expected to read the assignment before class. This reading is essential to your comprehension of the material in this course and will be a key to your success. Periodically I will ask for your written answers to questions from the reading at the beginning of class, before we have covered the material in lecture. These answers will count towards your activity grade for the day and can count towards the “active attendance grade boost” (see below).

Textbook questions: There is a list of recommended questions at the end of the Trujillo/Thurman textbook chapters for each of our course units. These are not graded

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but it is highly recommended that you complete these questions each week. I will answer any questions you have from the textbook questions during class.

On-line quizzes: Online quizzes will be posted for each class. Quiz questions will be reviewed in class if students have are problems. Quizzes are open book, open internet. There are 10 quizzes, each worth 10 points.

Five Minute Video Presentations: The student will get a chance at teaching a short meteorological lesson of interest to them. Each student will review three YouTube (or other online video, like vimeo) videos and select one to present in class on 12/7/12. The video should review some topic of interest to the student in the field of meteorology. The student will email a report to the instructor (\*.pdf or \*.doc) on or before class on 11/30/12. This 1-2 page report will include, in 3 paragraphs, the meteorological lesson they want to teach and the online location of the three videos (between 2 and 5 minutes in length), highlighting the video to be presented. The report will include a one paragraph description of a scientific test of the conclusions shown in the video. The report will be accepted as late as before class on 12/7/12 for a 30% grade reduction (The student will need to provide the online location for the student's chosen video a minimum 24 hours before class on 12/7/12 in order to qualify for a late grade for the report).

The in-class presentation will include: (1) a short (1-2 minute) introduction by the student where they explain the lesson they are teaching, (2) a presentation of the video, and, after the video, (3) a short (1-2 minute) presentation of the student's idea of a scientific experiment that could test the conclusions in the video.

Research Paper: Each student is required to submit a 5-10 page research paper. The paper will be formatted with one inch margins and in a font size of 12 points. The information should come from your own observations, scientific articles on the subject, library and internet research. We will learn what a research paper is composed of. We will learn what credible scientific sources are and how to document these sources with a bibliography (ie. "references").

**>>>>>>>\*\*\*Papers submitted without references will not receive a grade\*\*\*<<<<<<<<<**

A research paper on a topic of interest to you that is related to Oceanography is required from each student. Your work must include:

- 1) References that need to be from the original source such as the article, interview, or book.
- 2) 5-7 pages of text.

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- 3) At least one figure (with a caption) describing the location of interest.
- 4) At least one image, drawing, or plot with a caption describing what the image/drawing/plot is showing.
- 5) A minimum of three references from original sources, not including your textbook.

We will briefly review some basic writing techniques during the course. A general outline with specific research topics for your project is due at the beginning of class on 9/28/12 (50 pts). The outline should have one reference you are considering to use for the paper. This reference does not need to be in the final paper, but it gives me an idea about what sources of information you are considering.

The Final paper is due at the beginning of class on 11/30/12, early submissions are encouraged. I will accept papers as late at the beginning of class on 12/7/12, with a 30% grade reduction. Papers are to be turned in online as a \*.pdf, or \*.doc. I plan to post your research project on the MyCR website so other students will have the chance to learn from your research.

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Class will start on time at 9:00 AM. You are responsible to be present for and be attentive to all the material covered in class. If you need to leave the class early, please let me know before the class starts.

This is a college-level science class, and will require a commitment of your time outside of class. This at-home time will enable you to digest the material we cover in class and help when you are asked on the exams to apply these concepts to different problems and applications.

Plan on spending a minimum of at least 6 hours per week on course material outside of class. You are encouraged to set aside a specific time each week outside of class devoted solely to each course:

- o Reviewing lecture notes and in-class exercises each week
- o Reading the textbook
- o Working on the recommended exercises from the textbook
- o Completing experiment write-ups and homework assignments
- o Studying for exams

Note that 6 hours per week at home is the average minimum to pass. Some students may require more time at home just to pass; for some in this course that may be enough to get an A. A student who is very attentive in class, asks questions, and takes careful notes will need less at-home time.

Absences: It is difficult to do well in this class without attending all the lectures. I understand there will be an occasional absence due to illness or emergency, however I consider more than two to three absences per semester excessive. If you do miss a class:

1. Use myCR first to obtain the course slides. The slides will include information about any homework or in-class exercises that were assigned. Most assignments and handouts referenced by the slides will be in your handouts.
2. Next, try to obtain a copy of lecture notes from a classmate since there are many things we cover that are not spelled out directly on the slides or handouts.
3. Read the required reading covering the material you missed, and check your comprehension with the recommended questions at the end of each chapter.
4. After this, feel free to contact me by email or in office hours with any questions.

Final grade active attendance boost: If your final course grade after rounding to the nearest whole number is within 1 point of a grade transition (C to C+, D to C, A- to A, etc.) I will give you the boost needed to obtain the higher grade if you have actively attended most classes and correctly answered many of online quiz or in class reading



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quiz questions. More than 2-3 unexcused absences is considered excessive and will disqualify you from this opportunity. Conduct not in accordance with that outlined below will also prevent you from receiving this bonus.

Computer skills: This class will require computer use outside of class. Activities involving the 4 skills listed below will be included throughout the semester. In addition, you will be expected to check myCR regularly for announcements. If any of the items listed below seem foreign to you, you are encouraged to sign up this semester for CIS 100 "Basic Computer Skills", a beginning computer literacy course at CR.

1. Send and receive email from your CR Google email account.
2. Open a web browser, and access a web page if you are given the web address.
3. Log onto and access course material from myCR (handouts, slides, announcements, etc.).
4. Open Microsoft word (.doc) and Adobe .pdf documents to read their contents.

To emphasize the importance of computer literacy in our lives, this course may include one class conducted entirely online via myCR. This "virtual class" will replace all in-class activities for one day, on a date agreed upon in advance. You will have the flexibility to choose when you access the online class material, within a specified window of time.

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