

Geology 109 Oceanography

Spring Semester, 2013: 10:30-11:20 M, W, F
Bessey Hall Room 102

| | |
|---------------------|--|
| Instructor: | Dr. David K. Watkins 329 Bessey Hall dwatkins1@unl.edu 472-2177 |
| Office Hours: | Monday & Wednesday 12:30-1:30 feel free to email for an appointment for any other time |
| Teaching Assistant: | Bobbi Brace 211 Bessey Hall bobbibrace@huskers.unl.edu 472-2663 |
| Office Hours: | Monday & Wednesday 1:30-2:30 feel free to email for an appointment for any other time |

Course Philosophy:

The oceans are critical habitats for most of the world's plants and animals; oceans grow and provide critical resources for human society, and have done so throughout human history. Understanding the oceans is vital to understanding our climates and potential climate change, such as global warming. Each American has a large impact on the world's oceans, largely through our use of ocean resources, particularly petroleum. We need to understand how our everyday decisions affect the health of the oceans, and consequently, the health of the entire planet.

Policy decisions that are made in Washington as well as Nebraska have a profound impact on the world's oceans, and it is crucial that every citizen understands as much about the oceans as we can, so that we can provide informed guidance to our elected leaders.

This course is intended to provide you with a beginning towards understanding the oceans, how they affect you, and how you affect them. After taking this course, you will be prepared to learn more, throughout your life, and to enjoy this unique water planet through a better understanding of it. By the time class is done, over the next 16 weeks, you will learn:

- that science is not a collection of facts to memorize, but an exciting way to explore and become knowledgeable about and comfortable with our environment
- how our planet, the Water Planet, is unique in the Solar System, and can support life, thanks to the amazing qualities of the water molecule
- what sort of rocks and sediment make up the ocean floor and what these tell us about ocean history
- how the oceans have a profound impact on our planet's climate
- how water circulates in the ocean, moving heat, chemicals, and life throughout the system
- what a dynamic place the ocean's shores are, and how society attempts to live there
- what sort of plants and animals live in the oceans, how to recognize them at the shore
- the status of the ocean's plants and animals: how pollution and human activity impacts them

This course is not conceptually difficult, but there is a LOT of material for you to master (the textbook is about 550 pages). This requires that you spend some time (several hours) on your Oceanography notes and readings every week, preferably every day. Aside from learning about the fascinating and critically important ocean environment, you will be gaining invaluable practice in learning to master a great deal of material in a short period of time. This may be the most useful tool you learn in your college career.

TENTATIVE COURSE SCHEDULE, SPRING 2013

| Dates: | Topic(s): | Reading Assignment* |
|----------------|--|---------------------|
| Jan. 7-13 | The Scientific Method; Origin of Earth and Oceans | Chapter 1 |
| Jan. 14-20 | Earth Structure | Chapters 2-3 |
| Jan. 21-27 | Plate Tectonics | Chapters 2-3 |
| Jan. 28-Feb. 3 | Ocean Basin and margins | Chapter 3 |
| Feb. 4-10 | Water & Seawater; | Chapter 5 |
| Feb. 11-17 | Ocean Chemistry & Physics First Exam Feb15 | Chapter 5 |
| Feb. 18-24 | Ocean and the Atmosphere | Chapter 6 |
| Feb. 25-Mar. 3 | Surface and Deep Circulation | Chapter 7 |
| Mar. 4-10 | Ocean Waves & Tides | Chapters 8-9 |
| Mar. 11-17 | Tides, Coasts, and Sea Level Second Exam Mar 13 | Chapter 9-11 |
| Mar. 18-24 | Spring Break | |
| Mar. 25-31 | Ocean Life | Chapter 12 |
| Apr. 1-7 | Marine Productivity & Ecology | Chapter 13 |
| Apr. 8-14 | Marine Ecosystems | Chapter 14-15 |
| Apr. 15-21 | Marine Sediments & Ocean History | Chapter 4 |
| Apr. 22-28 | Marine Resources and Environmental Concerns | Chapter 16 |
| | FINAL EXAM, COMPREHENSIVE, Friday, May 3, 7:30am - 9:30am | Chapters 1-16 |

*Textbook: *Essentials of Oceanography (10th Ed.)*, Trujillo & Thurman, Pearson Publishing

COURSE/GRADING POLICIES:

PLEASE NOTE: **YOU** are responsible for knowing important dates on the Academic Year Calendar, such as last day to withdraw. See your Schedule of Classes at (http://www.unl.edu/regrec/calendar/calendar_main.shtml)

Grading Policy

YOUR GRADE will be determined by some quizzes/homework and **3 exams**, 2 of which are given during the semester and one given during finals week. See the course schedule for tentative dates of exams.

Note that increasing weight is given to exams as the course proceeds:

- 15% quizzes/homework
- 22% first exam
- 28% Second exam
- 35% final exam

The final exam will be **comprehensive**: it covers the entire course, from Day 1, with emphasis on material from the last five weeks.

Grades are determined as follows:

- 100 - 98 = A+
- 97 - 93 = A
- 92 - 90 = A-
- 87 - 89 = B+, etc.

A minimum grade of C is required for a Pass with the Pass/No Pass (P/N) option. A “C-“ or less is an “N”.

NO MAKE-UPS are given for ANY exam for any reason whatsoever. If you cannot take an exam, contact the instructor BEFORE exam time. There are no make-ups for any quiz.

Course Resources, Class Attendance

You have **three ways** to learn the material in this course:

1. Attend class, listen to the lectures, take notes
2. Read the textbook, take notes
3. Read the material on the Blackboard site, take notes (material there is subject to change)

You will get more out of the lectures if you read the assigned chapter BEFORE coming to class. Most of the exams are taken from class notes and Blackboard material.

Some people learn by listening, some learn by writing, others by drawing pictures of what they hear or read. Most people learn by writing, as research on learning strategies indicates that there is a strong connection between your brain and your hand. I strongly recommend that you **write your notes over** onto clean paper for this course. This has the following **benefits**:

1. It will provide you with a neat, understandable set of notes.
2. It will help you find “holes” in your notes. These are places where you missed the explanation of material. Once you find the “holes”, you can fill in the gaps by asking your instructor, consulting your textbook, and/or consulting the course Blackboard site.
3. The actions of composing and physically writing out the material implants the material into your brain in a way that no other method can match.

ACE Certification:

Student Learning Outcome #4: Use scientific methods and knowledge of the natural and physical world to address problems through inquiry, interpretation, analysis, and the making of inferences from data, to determine whether conclusions or solutions are reasonable.

You will have the opportunity to acquire this ability by attending the lectures, participating in in-class exercises and discussion of current events, and completing homework assignments. The lectures provide the content and context necessary for you to apply the material learned to in-class exercises and homework assignments.

Your achievement is assessed through two hourly exams and a comprehensive final, as explained under “Grading Policy”.

Lecture room rules:

- Attendance at lecture is not required; if you don't wish to pay attention, you need not be in the lecture room. If you have any questions during class, **feel free to raise your hand and ask** for repeats, clarifications, or to offer your own observations. Talking among yourselves prevents other students from hearing and participating as they would like, so kindly refrain from doing so.
- No cell phones allowed; leave them at home or turn them off before stepping into the room.
- **Be on time for class and stay through the entire class.** Do not get up during class and walk out for any reason whatsoever, including bathroom or refreshment breaks. This is too distracting to your fellow students.
- Don't be a pig. Clean up after yourself. Remove any and all trash. There are **recycling bins** for newspapers and plastic bottles in the building.

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

ACADEMIC HONESTY

Academic Honesty is a requirement. You are individually responsible for any assignment and every exam and quiz. Anyone confirmed in giving or receiving aid on any assignment or exam whatsoever will receive an "F" for the course. No exceptions.

Students in Oceanography are expected to abide by the Student Code of Conduct. Section 4.2 of the Code states "The maintenance of academic honesty and integrity is a vital concern of the University community. Any student found guilty of academic dishonesty shall be subject to both academic and disciplinary sanctions."

According to the Code, academic dishonesty includes, but is not limited to, cheating; fabrication and falsification; plagiarism; complicity in academic dishonesty, and other actions listed at <http://stuafs.unl.edu/ja/code/three.shtml>. A copy of the Student Code of Conduct is also on the Oceanography Blackboard site.

Plagiarism, cheating on exams, quizzes, extra credit assignments and other forms of academic dishonesty are not acceptable in this course. If the exact meaning of these terms is unclear to you, please feel free to see your Instructor for clarification.