

Geology 328/528: Oceanography: Spring 2006 (3 Credits)

Instructor: Eric Hiatt

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Office hours: 3:00-4:00 M,W,F; 10:20-11:20 W & F, and by appointment or chance.

Schedule: Lectures: Monday, Wednesday and Friday 1:50-2:50, Harrington Hall 217.

Important Dates: Last day to drop with 100% refund, February 3; Spring Break, March 12-19; Last day to drop without appeal, March 20; Semester end, May 12; Graduation, May 13.

Grades:	
Exam 1	20%
Exam 2	25%
Homework and quizzes	10%
Presentation and participation†	20%
Final Exam: Wednesday, May 10	25%

† You will be required to do an outline, 15-minute poster presentation, and be expected to participate in discussions.

Grade scale: 92% and up = A; 87-91 = AB; 82-86 = B; 77-81 = BC; 72-76 = C; 67-71 = CD; 60-66 = D; <60% = F

Graduate credit: Students enrolled in 528 (graduate credit) must meet with the instructor to plan, develop and complete an additional research project.

Required text: [Garrison, T., 2005. Oceanography](#): Brooks/Cole, Wadsworth/Thomson Learning, Pacific Grove, California, fifth edition.

Course Objectives: The purpose of this course is to give you a broad understanding of how the Earth's oceans formed and the role they play in the global geologic, climatologic, and biologic systems. Oceans cover more than 70% of the total Earth's surface and they contain the world's largest mountain chains, and yet they remain, to a large degree, unexplored; the oceans are the "final frontier" on Earth. Life first appeared in the oceans 3.5 billion years ago, and the history of life and evolution is largely written in marine sediments. The oceans are responsible for the development of a global climate favorable for the existence of life as we know it, and they continue to play the pivotal role in determining how the Earth's climate will change in the future. Understanding how the Earth works is critical to make land use and global political decisions. For all of these reasons, study of Oceanography is part of a well-rounded liberal arts education. It is your responsibility as an educated member of a democracy to have a basic understanding of how the world works in geologic terms, as well as an understanding of social, political, and societal aspects of the world.

Special Accommodations: Reasonable accommodations will be made for students with disabilities. Please contact Disability Services (424-3100 (voice) or 424-1319 (TTY)) or visit their [web site](#) for the University's accommodation request form and documentation requirements. Information related to an individual's accommodation request will be kept confidential.

Academic Integrity: The Wisconsin Administrative Code states: "Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of

others academic endeavors.” (§ UWS 14.01) Plagiarism and other forms of academic misconduct are serious offenses with severe penalties. See the [University of Wisconsin Oshkosh Student Discipline Code](#) for definitions of academic misconduct and details about procedures, sanctions, and other relevant information. Specific questions about the provisions in the Student Discipline Code should be directed to the Dean of Students Office. If you do not understand this statement, please see me as soon as possible.

Geology 328/528 Lecture Schedule.

Week of:	Topic and reading:
Jan. 30	Scientific Inquiry and the importance of the oceans in global systems. Exploring the “final frontier” on Earth. History and techniques in ocean exploration (*chp. 1).
Feb. 6	Origin of the oceans (*chp. 2).
Feb. 13	Plate tectonics and ocean systems: mid-ocean ridge systems, subduction zones, hydrothermal vents (*chp. 3).
Feb. 20	Ocean basins: physical structure of the ocean floor (chps. 3 & 4).
Feb. 27	Exam 1. Water: molecular properties and origin (*chp 6).
March 6	The hydrologic cycle and sea level change (*chp 6) & Chemistry, Thermal properties, and composition of ocean water(*chps. 6 & 7).
March 13	Spring Break March 12-19.
March 20	Chemistry and composition of ocean water: why is the sea salty? (*chps. 6 & 7).
March 27	Weathering reactions & Seawater-sea floor interactions. The CO ₂ - carbonate system (*chp. 7).
April 3	Marine sediments (*chp. 5).
April 10	Exam 2. Ocean circulation and climate. Thermohaline circulation and the global “Conveyor Belt” (*chp. 9). Ocean circulation and the global heat budget (*chp. 8).
April 17	Waves and tides (*chps. 10 & 11). Student Presentations.
April 24	Marine primary productivity (*chps. 13 & 14). The benthic realm (*chp.16). Coral reefs (*chp. 15). Student Presentations.
May 1	Storms, El Niño and the “Southern Oscillation” (*p. 214-217). Human Impacts on the Oceans (*chps. 17 & 18). Student Presentations.
May 8	Wrap-up and review. Final Exam.

* refers to chapters and pages in: [Garrison, T., 2005, Oceanography](#): Brooks/Cole, Wadsworth/Thomson Learning, Pacific Grove, California, fifth edition.

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