

Fall 2004 – OCE320 The Oceans (Honors) – Course Syllabus

Time: Tuesdays and Thursdays, 11-12:15

Location: CSL-422

Textbook: Invitation to Oceanography, 3rd Ed.

Textbook website: www.jbpub.com/oceanlink

Course website: blackboard.sdsu.edu

Professor: Stephen A. Schellenberg

Office: GMCS-112

Office Hours: Wed. 9-11 at Aztec Center Starbucks or by appt.

Contact: 594.1039, schellenberg@geology.sdsu.edu

(Note: e-mail must contain "OCE320" in Subject Heading)

In this General Education Explorations course, we will use scientific principles to investigate the physical, chemical, geological, and biological processes that govern microscopic to global patterns within the ocean system. We will also address more general issues on the nature of science (e.g., role of evidence, hypothesis testing, etc.), the role of scientific rationalism in modern society, and the development of problem-solving skills. I will strive to make this traditionally lecture-centered course more student-centered and relevant to your broad interests. However, just as in learning a foreign language, you will need to master the fundamentals in order to have interesting conversations.

Beyond the "basics" of oceanography, we must face the fact that the Earth and its global ocean system are experiencing environmental and biological changes during our lifetimes that previously occurred over geological time-scales (i.e., hundreds to thousands to millions of years) – if at all (e.g., synthetic pesticides). This observation is not a coincidence: our increasingly industrialized population of 6.3×10^9 people (and growing at ~1,300 people/minute!) is the catalyst for these rapid global changes. Therefore, we will also examine human impacts upon the ocean system, and each of you must evaluate for yourselves whether these changes are good or bad, relevant or irrelevant, avoidable or unavoidable. I have my opinions on these issues, based on scientific observations and sociopolitical orientation, and will freely share these in class. Your opinions need not agree with mine, but they should have a broader intellectual foundation grounded in a blend of science, economics, sociology, politics, etc. If this course fosters development of this broader intellectual foundation, I will consider it a grand success.

Course Logistics

- **Prerequisites:** Enrollment in this course requires and assumes (1) upper-division standing (60+ units); (2) satisfactory completion of the General Education Foundations requirement in "Natural Sciences and Quantitative Reasoning"; (3) good-standing in the SDSU Honor's Program; and (4) a willingness to be the primary factor in your education.
- **Physical Materials:** The 3rd edition of the textbook is available through local academic or on-line bookstores, and a copy is on 2-hour reserve at the Love Library – please treat this free resource with respect (*i.e.*, no highlighting, underlining, etc.). Note that the 2nd edition is also available and is acceptable (only minor differences exist).
- **Virtual Materials:** All non-textbook course-related materials (syllabus, lecture outlines, handouts, exercises, field trip information, etc.) may be downloaded as .pdf files from the SDSU Blackboard OCE320 website. Internet access is available at many campus locations.
- **Readings, Lectures, Discussions, and Office Hours:** I expect you to read the appropriate textbook chapters before class, and this expectation will be encouraged as necessary through persistent quizzes. Why read before class? Our class time will synthesize, build upon, and apply the basic information from the textbook. The less prepared you are for class, the less you will benefit from our limited time together. Your classroom questions and discussion are always encouraged; I may curtail these in the interest of time, but will make myself available after class or during office hours to continue questions and discussions. You are encouraged to attend office hours, or to schedule an appointment, to resolve any additional questions or difficulties with course content or presentation: Different people learn in different ways – together we can work to find the best approach for you. If you require special classroom or examination considerations, you must contact me by 16 September with the necessary documentation from Disabled Student Services (Student Services, Room 1661). If you must miss a class due to an official scheduled university-sponsored activity, you must provide appropriate documentation to me by 16 September.
- **Classroom Etiquette:** Please arrive and settle in before class begins, turn off your cell phones/pagers, refrain from non-oceanography-related discussion, and avoid the "five-minutes-left-in-class-rustle-a-thon." In short, respect your fellow students and your instructor.
- **Course Changes:** I reserve the right to make minor modifications to the syllabus and schedule as the semester progresses. These changes will be announced in advance in class and posted on blackboard.
- **Academic Misconduct:** Section 41301 of Title V of the California Code of Regulations defines academic misconduct as "cheating or plagiarism in connection with an academic program at a campus." Examples of cheating include using notes or copying others' work during an exam, using old exams and study guides to prepare for an exam, and falsifying data or records for an exercise. Examples of plagiarism include copying other students' answers or, when working in collaborative groups, not stating answers in your own words, based on your own understanding.

Student Assessment

- **Examinations (50%):** Three scantron-based exams will be given during the semester. For each exam, students will complete the forty-minute exam individually under standard test conditions and then retake the same exam using any desired materials or collaboration. Exam scores will be the weighted average of the individual score (75%) and the collaborative score (25%) – note that your collaborative score will only be factored in if it raises your overall score. This two-stage assessment fosters your immediate review, clarification, and self-evaluation. Each exam comprises 10% of your final grade. Student who will miss an exam due to an official SDSU activity must contact me at least two weeks in

advance to arrange to take the exam prior to the scheduled time. The final exam (14 Dec 10:30-12:30) will have a similar structure (i.e., first hour allotted to individual evaluation, second hour allotted to collaborative refinement/revision) and comprises 20% of your final grade. Any and all make-up exams will be essay-based and proctored only on 15 Dec (day after final exam). Exam scores will be listed by your Red ID and posted on Blackboard. Graded exams may be reviewed during office hours or by appointment, but may not be removed from my office.

- *In-class activities (10%)*: Various student-centered activities will punctuate professor-focused lectures. Consistent attendance is important as these activities will rarely be pre-announced and may not be made up if missed.
- *Field-trips (5% each; 10% total)*: Field-trips include a self-guided exploration of the Birch Aquarium (aquarium.ucsd.edu; reduced admission with student ID) and an instructor-guided exploration of the coastal and intertidal environments near Scripps Pier. Field-trip logistics, including sign-up sheets for the Scripps Pier field-trip, will be posted early in the semester to allow you to arrange carpooling, etc. Other field opportunities may develop during the semester.
- *Out-of-class laboratory exercises (15%)*: These exercises provide a hands-on opportunity to reinforce oceanographic concepts from lecture. Exercises will be posted on blackboard, are conducted in the RP Oceans Laboratory (GMCS-108; open 8-5 Monday through Friday), must be turned in (stapled!) at the start of class on their due date, and will not be accepted at any other time. Note that exercise grades will be based on a combination of self-administered blackboard “quizzes” and your submitted exercises – more on this later in the semester.
- *Individual project (15%)*: Imbedded in the idea of a general education is an ability to relate seemingly disparate information and knowledge. To foster this ability, each student will produce an instructor-approved individual project relating some aspect of their major to some aspect of oceanography. The format is open – be as creative as you like but scientifically accurate. Meet with me early in the semester to discuss ideas and get my approval. Your final report/performance/exercise/lesson-plan will be submitted/presented on 7 Dec. No late projects will be accepted.

<u>Date</u>	<u>Topic</u>	<u>Chapter</u>
31 Aug	Logistics, Objectives, Overview	1, 2, Appx. IV
2 Sept	Ways of knowing and General Education	1, 2, Appx. IV
7 Sept	Origin of Ocean Basins	3
9 Sept	Origin of Ocean Basins	3
14 Sept	Marine sedimentation	4
16 Sept	Marine sedimentation	4
21 Sept	Properties of Seawater	5
23 Sept	Properties of Seawater	5
28 Sept	Wind and Ocean Circulation	6
30 Sept	Wind and Ocean Circulation	6
5 Oct	EXAM 1 (Chapters 1-5)	
7 Oct	Reflection and Discussion	
12 Oct	Waves in the Ocean, Tides	7, 8
14 Oct	Waves in the Ocean, Tides	7, 8
19 Oct	Marine Ecology	9
21 Oct	Marine Ecology	9
26 Oct	Biological Productivity	10
28 Oct	Biological Productivity	10
2 Nov	The Dynamic Shoreline	11
4 Nov	The Dynamic Shoreline	11
9 Nov	EXAM 2 (Chapters 6-10)	
11 Nov	Reflection and Discussion	12
16 Nov	Coastal Habitats	12
18 Nov	Coastal Habitats	12
23 Nov	Coastal Habitats	12
25 Nov	Thanksgiving Holiday	
30 Nov	Ocean Habitats	13
2 Dec	Ocean Habitats	13
7 Dec	Course Wrap-Up Discussions	
9 Dec	Exam 3 (Chapters 11-13)	
14 Dec	Final (cumulative) – 10:30-12:30 in CSL-422	

Note that Chapters 14 (The Ocean’s Resources) and 15 (Human Presence in the Ocean) are not listed in the above schedule; content from these chapters are integrated into Chapters 1 through 13 as appropriate