Oceanography-115

Spring 2006 (Course #7698)

Class Instructor: Poorna Pal MS MBA Ph.D. Professor of Geology
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Office Hours: TTh: 1-3 PM, W: 3-4 PM, F (5-6 PM on Feb 24, Mar 10 & 31, Apr 28, May 19, Jun 2), or by appointment.

This 3-unit physical science lecture course examines the physical, chemical and geological aspects of oceans and the oceanic environment, in order to help you
- describe how oceanography, perhaps the most visual of all physical sciences, exemplifies the scientific process of continually matching the empirical observations and theoretical constructs and helps us understand the forces that shape our natural environment;
- establish the oceanographic connections that bridge geology, meteorology, ecology, biology, physics, chemistry, economics and ethics; and
- explain why understanding the oceanic realm has become increasingly crucial to our collective future.

In the process, it should help sharpen your skills in critical reasoning and articulation.


Schedule for Lectures, Tests and Final Examination (630 – 930 PM, SB-243)

Feb 28, Mar 7, 14 and 21

A. What makes Earth the water planet? 1. Earth and its oceans (Chapter 1),
B. How are the ocean basins created? 2. Earth, Venus and Mars
3. Physiography of seafloor (also latitudes and longitudes) (Chapter 4)
4. Earth Interior (Chapter 1)
5. Plate Tectonics (Chapter 3: Plate Tectonics)
6. Seafloor and continental margin sediments (Chapter 5)

Mar 28, Class-Test 1

Mar 28, Apr 4, 11 and 25
C. Why learn about ocean chemistry and physics? 7. Chemistry and the origin of water (Chapter 7)
D. How do oceans modulate the climate? 8. Seawater physics and the ocean structure (Chapter 6)
9. Atmospheric circulation (also hurricanes) (Chapter 8)
10. Ocean circulation (also El Niño, Global Warming) (Chapter 9)
11. Wave dynamics and wind waves (Chapter 10)
12. Tides and tsunamis (Chapter 11)

May 2, 9, 16 and 23
F. What happens at the land’s end? 13. Coasts and the coastal processes (including the effects of construction and related human activity) (Chapter 12)
G. How physical factors shape the marine habitat and life 14. Life in the ocean (Chapter 13)
15. Marine primary producers or autotrophs (Chapter 14)
16. The marine animals (Chapter 15)
17. Marine communities (Chapter 16)

May 30, Class-Test 3

May 30 and Jun 6
H. How do the oceans affect our future? 18. Food resources (Chapter 17)
19. Mineral and energy resources (Chapter 17)
20. Oceans and the environmental issues (Chapter 18)

June 13: Final Exam. (730 – 1000 PM, SB-243)

The Class and Grading Policies:
- DEADLINES: Mar 7 for ADD/DROP-WITHOUT-W, May 20 to DROP WITHOUT AUTOMATIC ‘W’ (dropping after this means an automatic ‘F’)
- This is a COLLEGE TRANSFER COURSE. Therefore, the class will rely heavily on discussions and analyses of the ongoing processes of oceanographic interest, YOUR SUCCESS WILL DEPEND ON THE NOTES YOU TAKE IN THE CLASS, YOUR READINGS BEFORE AND AFTER THE CLASS, AND YOUR PARTICIPATION IN THE DISCUSSIONS.
- Note that (a) there will be no homework or assignments, (b) an attendance below 70% will invite an F, and (c) any suspicion of “cheating” and/or any other kind of disruptive and/or anti-social behavior will invite negative points and an F.
- For final grading (A ≥ 90% > B ≥ 80% > C ≥ 70% > F), best 2 of the 3 Class-Tests will account for 60% of the overall grade, the comprehensive Final Examination for 30%, and presence and participation in the class, as may be measured through pop-quizzes and/or your questions, for the remaining 10%. Also, to secure the grade A, a student should have secured 90% marks in at least 2 of the 3 Class-Tests.
- The Class-Tests will be scantron based, with two short notes, whereas the Final Exam. (a) will be comprehensive, (b) will need to be on the “blue book” and (c) will comprise an essay and two short notes.

- Participation in the Collaborative Learning (SI) Workshop, available for this course is encouraged: apart from helping you learn the subject better, active participants can earn up to 2½ extra-credit points. PLEASE USE THE SI SESSIONS TO SHARPEN YOUR ESSAY WRITING SKILLS.
- Videos: You may also wish to browse the corresponding episodes in OCEANUS videos available at the Learning Center.
- Any “Extra Credit” work — an ORIGINAL essay or term paper or research paper, project or report — will be graded on a -5 to +5 scale. Such a grading will be done only in marginal cases and therefore at the time of the Final grading.