GLENDALE COMMUNITY COLLEGE

Winter 2011(Course #2037)
Oceanography-115

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Course website: http://rafael.glendale.edu/ppal/oceanography-115.htm
or google 'Poorna's Oceanography class" and seek updates
Office Hours: MTW: 4^{00}-5^{00} pm 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.

Textbook: Either of these
Tom Garrison: **Oceanography: An Invitation to Marine Science** (Brooks Cole; 8th ed, 2009: ISBN-10: 049511913X)
Tom Garrison: **Essentials of Oceanography** (Brooks Cole; 5th ed, 2008: ISBN-10:0495555312)

Schedule for Lectures, Tests and Final Examination (5^{10} – 8^{30} PM, CS-266)

Jan 3, 4, 5, 10 and 11	*Preview of the course* A. What makes Earth the water planet? B. How are the ocean basins created?	Unless stated otherwise, chapters here refer to those in the Garrison Textbook) 1. Earth and its oceans 2. Earth, Venus and Mars 3. Earth Interior (Chapter 1) 4. Physiography of seafloor (Chapter 4) 5. Plate Tectonics (Chapter 3: Plate Tectonics) 6. Seafloor and continental margin sediments (Chapter 5)	(Chapter 1: Knowing the Ocean World, also latitudes and longitudes: Box 1.1 and Appendix III). Plus Chapter 1 from my "upcoming" book and my "Blue Planet" handout (both available in PDF on the class website) **Class-Test 1:** Jan 11 (5^{30}-6^{45}pm)
Jan 11 (7-8^{30} pm), 12, 18, 19 and 24	C. Why learn about ocean chemistry and physics? D. How do oceans modulate the climate? E. How are waves, tides and tsunamis created?	7. Chemistry and the origin of water (Chapter 7) 8. Seawater physics and the ocean structure (Chapter 6) 9. Atmospheric circulation (also hurricanes, Global Warming) (Chapter 8) 10. Ocean circulation (also El Niño, Conveyor belt) (Chapter 9) 11. Wave dynamics and wind waves (Chapter 10) 12. Tides and tsunamis (Chapter 11)	**Class-Test 2:** Jan 24 (5^{30}-6^{45}pm)
Jan 24 (7-8^{30} pm), 25, 26 and 31	F. What happens at the land's end? G. How physical factors shape the marine habitat and life	13. Coasts and the coastal processes (including the effects of construction and related human activity) (Chapter 12) 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)	**Class-Test 3:** Jan 31 (5^{30}-6^{45}pm)
Jan 31 (7-8^{30} pm), Feb 1 and 2	H. How do the oceans affect our future? *Overall review of the course*	18. Food resources (Chapter 17) 19. Mineral and energy resources (Chapter 17) 20. Oceans and the environmental issues (Chapter 18)	**Final Exam. Feb 2 (5^{10}-8^{30}pm)**

The Class and Grading Policies:

SI meetings: 4-5 PM (CS-252) on all the class-meeting dates excepting Jan 3

- DEADLINES: Jan7 for ADD/DROP-WITHOUT-W, Jan 21 to DROP WITH AUTOMATIC 'W' (dropping after this means an automatic 'F') (DROPPING OUT OF THE COURSE, WITH OR WITHOUT A "W", IS THE STUDENT'S RESPONSIBILITY).
- 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 ON 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/or the letter grade F for the course.**
- 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 (OR, "ACE" THE FINAL EXAM)**.**
- **The Class-Tests will be scantron based, with two short notes, whereas the Final Exam. will (a) be comprehensive and (b) comprise the scantron part and a choice of either two short notes or an essay.**
- 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.**