

OCE 2001: Introduction to Oceanography
Tentative Schedule

COURSE DESCRIPTION: This course focuses on the fundamentals of geological, chemical, and physical oceanography, with the goal of enhancing student understanding of global ocean processes, and the abiotic factors that underlie marine ecosystems.

PREREQUISITES: None

INSTRUCTOR: Dr. Richardson

OFFICE: Rm. 145, Marine Science Building

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TEXT: *Essentials of Oceanography*, 11th ed., by Trujillo & Thurman, 2014. ISBN-13: 9780321814050

STUDENT COMPANION WEBSITE: Google "Essentials of Oceanography 9e Online Study Guide." Click on the link. Select the appropriate chapter from the menu bar at the top of the page. You will find several useful study aids on this website, including the "Testing Your Knowledge," "Visualizing Oceanography," and "Understanding the Concepts."

Week	Lecture Topic	Readings	Assignments & Assessments
1	Introduction & history of oceanography	Chap. 1: 3-13	TBA
2	Scientific method; origin of solar system & Earth; structure of Earth; formation of atmosphere & oceans; origin & evolution of life; radiometric dating & geologic time scale.	Chap. 1:14-29	Mind map of events in Earth history; Quiz 1 due
3	Quiz 1; Continental drift; plate tectonics; paleomagnetisms; seafloor spreading; age of ocean floor.	Chap. 2: 35-49	Crustal thickness map
4	Plate boundaries; hotspots; measuring plate movements; paleogeography.	Chap. 2: 50-71	Major plates & boundaries map; Hawaiian hotspot graph; Quiz 2 due
5	Marine provinces; bathymetry	Chap. 3: 75-93	Hypsometric curve activity; Quiz 3 due
6	Marine sediments	Chap 4: 97-125	Sediment map; Read "Beneath the Bermuda Triangle"; Exam 1
7	Properties of water; salinity; acids, bases & buffers; thermocline & pycnocline; desalination of seawater.	Chap. 5: 129-158	Quizzes 4 & 5 due

8	Seasons & radiation budget; Coriolis effect; Earth's atmosphere; global wind belts; hurricanes; sea ice; wind power.	Chap. 6: 163-193	Global winds map; Quiz 6 due
9	Surface currents; gyres; Ekman transport; geostrophic currents; upwelling & downwelling; circulation patterns.	Chap. 7: 197-219	Exam 2 ; Ocean circulation map
10	ENSO effects; thermohaline circulation; power from ocean currents.	Chap. 7: 219-230	Quiz 7 due
11	Waves & wave characteristics; wave development; wave interference; refraction & reflection.	Chap. 8: 235-253	TBA
12	Tsunami basics; historical tsunamic; tsunami warning system; wave power.	Chap. 8: 253-263	Quiz 8 due
13	Gravitational attractions; tidal patterns; whirlpools; tidal power.	Chap. 9: 267-287	Quiz 9 due
14	Beaches; sand movement; longshore drift & barrier islands; stabilization of shorelines.	Chap. 10: 291-315	Quiz 10 due
15	Coastal ocean laws & EEZ; estuaries; lagoons; coastal wetlands.	Chap. 11: 319-337	Quiz 11 due; Thanksgiving
16	Marine pollution; historical oil spills; Deepwater Horizon spill; marine debris;	Chap. 11: 337-353	Quiz 11 due; Final Exam

GRADING:

- **Homework & In-class assignments** (15%);
- **Quizzes** (20%)
- **Exams** (60%):
- **Class participation** (5%): Disruptive students will be penalized by having their class participation grade lowered;
- **Grading scale:** 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; below 60 = F.
- **Extra credit:** TBA

MAKE-UP POLICY: You must make arrangements with the instructor to make up any missed work or exams.