

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

  X   Transfer course      X   A.A. degree applicable course  
(check all that apply)

**COURSE NUMBER AND TITLE:** Oceanography 115- Coastal Oceanography

**UNIT VALUE:** 3

**MINIMUM NUMBER OF SEMESTER HOURS:** 48

**BASIC SKILLS REQUIREMENTS:** Appropriate language and computational skills.

**ENTRANCE REQUIREMENTS**

**PREREQUISITE:** None

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:**

This course is designed for those interested in learning more about the coastal zone and its relationship with human activities. Students will examine a variety of coastal zones including sandy coastlines, rocky coastlines, coastal wetlands, coral reefs, and glaciated coastlines. Analysis of the coastal types will include investigation of case studies from around the world with a focus on the West Coast U.S. and California. Case studies will include effects of natural coastal processes as well as effects produced by human intervention. Several field trips will be offered. Students are expected to participate in a one-day field trip.

**SPECIFIC COURSE OBJECTIVES:**

The successful student will be able to:

1. Describe the basic types of coastal zones such as: coastal wetlands, sandy coastlines, rocky coastlines, coral reefs, and glaciated coasts. Students will develop the ability to classify a coastal region based on its significant characteristics.
2. Evaluate the importance of different oceanographic processes in developing particular coastal zone characteristics. Students will acquire an understanding of the interrelationships that exist between different oceanographic processes.
3. Evaluate the interrelationship that exists between humans and the coastal zone. Students will acquire an understanding and appreciation of the different ways in which humans interact with the coastal environment, including the role of cultural influences.
4. Analyze how humans both impact and are impacted by processes within the coastal zone. Students will examine case studies and will develop their abilities to assess the role of human and natural processes in the coastal zone.

5. Analyze the role of the scientific method in the development of U.S. coastal zone management policy. Students will acquire an understanding of the methods used to develop current policy. This will include an analysis of current policy limitations or shortcomings and an analysis of current controversies surrounding U.S. coastal zone management policy.

**CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

- I. Introduction to Coastal Oceanography - Definition of Coastal Zones
- II. Role of Plate Tectonics in Coastal Zone Development
- III. Role of Sea Level Change in Coastal Zone Development
- IV. The Effect of Tides on Coastal Zone Modification
- V. The Effect of Waves and Currents on Coastal Zone Modification
- VI. The Effect of Biochemical Processes on Coastal Zone Modification
- VII. The Physical Characteristics of Coastal Sediments
- VIII. Coastal Wetlands: Estuaries, Salt Marshes, and Tidal Flats
- IX. The Nature of River Deltas and their Influence on Coastal Zones
- X. Sandy Coasts: Beaches, Dunes, and Barrier Islands
- XI. Rocky Coasts: Cliffs, Terraces, and Platforms
- XII. Coral Reefs
- XIII. Glaciated Coasts: Permafrost, Glaciers, and Fjords
- XIV. Humans and the Coastal Zone: Coastal Issues
- XV. Coastal Zone Management
- XVI. U.S. Coastal Zone Management Policy

**REQUIRED READING:**

Davis, Richard A., Jr. The Evolving Coast New York: Scientific American Library, W.H. Freeman and Company, 1997.

**SUGGESTED READING:**

Current or recent journal and magazine articles dealing with the subjects covered by this course. Examples of journals and magazines appropriate to this course include:

Applied Ocean Research  
California Coast and Ocean  
Coastal Engineering  
Discover Magazine  
Earth Magazine  
Journal Of Coastal Research  
Marine Geology  
Oceanus  
Sea Frontiers  
Scientific American

The Internet/WWW may be used to investigate current topics related to coastal zones and coastal zone management. Examples of internet sites appropriate to this course include those maintained by the California Coastal Management Program, the Southern California Sea Grant Program, the National Oceanographic and Atmospheric Administration, and the U.S. Army Coastal Engineering Research Center. Also, sites maintained by coastal research centers affiliated educational institutions will provide a valuable data resource. Examples of such sites include those maintained by the Scripps Institute of Oceanography, Oregon State University, Duke University, Lamont Doherty Earth Observatory, Woods Hole Oceanographic Institute, the University of South Florida, and the University of Delaware.

**REQUIRED WRITING:**

Writings in the form of 1-paragraph to 1-page descriptive explanations of selected concepts will be included on exams.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.**

Outside assignments include:

1. reading the text
2. studying lecture notes
3. preparing supplemental readings from journals or newspapers
4. preparing Internet/WWW assignments
5. participation in a 1 day field trip to coastal areas within San Diego or Orange Counties to study natural beach processes and/or the effects of human intervention.

In addition, students may be given the opportunity to participate in one or more of the following, all of which will require additional outside preparation or participation. Selection of these assignments is left to individual instructor's discretion. These assignments allow instructors to accommodate different styles of learning.

1. a multi-page research paper.
2. a poster session, including oral presentation.
3. the production of a video/slide presentation.
4. 2-4 pages written review of 3 or more oceanographic journal articles.
5. oral presentation of a journal article
6. additional field trip(s) to coastal areas within San Diego or Orange Counties to study natural beach processes and/or the effects of human intervention.

**INSTRUCTIONAL METHODOLOGY:**

Lecture format with frequent use of visual aids. Also, subject matter lends itself to class discussion especially in the area of coastal zone management and case studies.

**Check all that apply:**

- lecture  
 laboratory  
 lecture-laboratory combination  
 directed study

**This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

**If yes, check all that apply.**

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)  
 Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)  
 Two-Way Video Conferencing (Two-way interactive video and audio)  
 One-Way Video Conferencing (One-way interactive video and two-way interactive audio)  
 Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

**GRADING POLICY AND STANDARDS** (include methods of determining whether the stated objectives have been met by students):

Grades in this course are based upon the following:

1. Three to five objective tests, each covering a pre-assigned block of textbook chapters and lecture material.
  - a. Tests to account for 50-60% of grade.
2. Outside assignments.
  - a. Assignments to account for 10-20% of grade (approximately equal to one test).
3. Comprehensive final exam.
  - a. Final to account for 20-25% of grade.

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes \_\_\_ No X Number of times course may be taken for credit: 1

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON: Dr. Lisa DuBois, (760) 744-1150, Ext. 2369**

**SIGNATURES:**

SIGNATURES ON FILE
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