Learning Objectives

- Understand basics of coastal processes.
- Know principles of coastal zone management.

Required Texts:


General Schedule.

- Four class periods will be on the beach, and the class will be divided into groups of four students who will work together and do reports. One project in late Jan, will be taking photographs of the King Tide and very low tide on same day.

Block 1: (~ 6 weeks); Readings- Griggs et al., Chapters 1-5 and 17; Keller and De Vecchio Ch 11; Revell 2009, 2011 and SLR, Dugan 2008, Norris 2005.

Coastal Processes (not necessarily in order we discuss them)

- Classification of Coastlines.
- Tides.
- Waves: origin propagation; types; power; breaking; refraction.
- Longshore transport; beach drift; longshore draft; indicators of drift.
- Shore zone basic processes and terms: factors affecting the beach & shore; beach terminology; storm-swell cycle; beach slope.
- edge waves; beach cusps; rip currents.
- Littoral cell and wave climate.

Block 2: (~4 weeks); Griggs et al. Chapters 6-8; Keller and De Vecchil Ch 4. Readings: Komar 2009.

- Coastal hazards: erosion, storms, coastal flooding, tsunami.
- Wetlands.
- Coastal Zone management.
**Midterm:** TBA (30 %)
**Final:** TBA (30%)
**Homework Problems (40%, 8% each)**

**Schedule in Detail**

Jan 5 Introduction: measure your step.
Jan 7 Coastal Classification.
Jan 12 Tides.
Jan 14 Waves 1.
Jan 19 Waves 2 Prepare for King Tide Photo Exercise.
Jan 21 Beach Processes 1; Collect data (high and low King Tide, photos on Jan 21 or 22) for Exercise 1.
Jan 26 Beach Processes 2. Video, ”Beach a River of Sand”.
Jan 28 On the Beach; Meet at Campus Point Beach to collect data for Exercise 2 (wave height, period, energy).
Feb 2 Coastal Erosion 1.
Feb 4 On the Beach: Meet at Campus Stairs to collect data for Exercise 3 (sediment transport, beach drift and longshore drift.
Feb 9 Coastal Erosion 2, Hand in Exercise 2.

Feb 11 Midterm Examination

Feb 16 Coastal Zone Management 1; Hand in Exercise 3.
Feb 18 Coastal Zone Management 2; Including Goleta Beach and IV.
Feb 23 On the Beach; Meet at west end of Goleta Beach; Start Exercise 4.
Feb 25 Wetlands.
March 1 On the Beach; Meet at IV (location TBA) start Exercise 5.
March 3 Coastal Hazards; Tsunami. Turn in Exercise 4.
March 8 Coastal Hazards; Hurricane and Coastal Flooding.
March 10 Review; Hand in Exercise 5.

March 17 Final Exams 4-7pm