OUTLINE: MARINE PROCESSES AND COASTAL LANDFORMS

A. Motions of Sea Surface
1. Sea Level - long range changes: eustatic change & tectonic change
2. Types of Surface Movement Within Oceans
   a. currents - causes and types
   b. tides - causes and daily changes in sea level - spring tides vs. neap tides
   c. waves - causes (sea wave, swell, tsunami)
      waves of transition vs. waves of translation, what causes waves to break onshore?
   d. upwelling

B. Work of Waves Along Shoreline
1. Distribution of wave energy
   a. wave refraction - wave’s approach toward shore, direction of movement
   b. contour of coastline: headlands vs. bays
2. Wave Action Against Land
   a. beach drift: swash and backwash action
   b. longshore drift or littoral drift
   c. control of beach development (winter vs. summer)
3. Erosional Features of Wave Action (residual)
   Sequence of sea cliff development:
   a. wave cut notch
   b. sea caves
   c. sea arch
   d. stack (collapsed arch)
   Other erosional features
   a. sea terrace, wave cut terrace (due to uplift along coast)
   b. wave-cut bench or wave-cut platform
4. Depositional Features of Wave Action (transported)
   a. beach
   b. sand spit (barrier spit)
   c. baymouth bar (barrier bar)
   d. tombolo
   e. lagoon

E. What Can Affect the Development of Beaches
1. Damming of rivers upstream
2. Construction of marinas, harbors, jetties, breakwaters, groins