I. Tides
   A. Daily changes in sea level caused by gravity of Moon and Sun
      1. Water and Earth are pulled toward Moon and Sun
      2. high tide comes in as ‘flood tide’
      3. low tide recedes as ‘ebb tide’
      4. Unequal tides created by location of bulge with respect to latitude
   B. Monthly cycle
      1. 29 ½ day Lunar orbit around Earth
      2. spring tides are not in spring—when Moon and Sun bulges amplify
      3. neap tides are of less pronounced
   C. patterns
      1. diurnal—daily alternation
      2. semidiurnal—twice daily alternation
      3. mixed—two unequal highs and two unequal lows
   D. tidal current
      1. through inlet in barrier island
      2. deposits material in lagoon and on seaward side
II. Axial Tilt and Orbit around Sun—
   A. Earth tilts 23.5^{o} to orbit around Sun
   B. Latitudes of Sun incidence
      1. polar circles—Arctic, Antarctic
      2. tropical circles—Cancer, Capricorn
      3. equator
   C. Days corresponding to Sun incidence
      1. solstice—overhead Sun at tropical circle—June 22, December 22
      2. equinox—overhead Sun at equator—March 22, September 22
   D. Day length varies with latitude and season, due to circle of illumination
      1. longest/shortest at solstice, at high latitudes
      2. equinox—equal day and night all over the world
III. Heating
   A. Greater heating capability with higher Sun angle
      1. latitude controls on Sun energy
      2. seasonal controls on Sun energy
   B. Low latitudes have high Sun angle year round
IV. Incoming Solar Radiation
   A. Temperature Variation greater in areas closer to poles
   B. Temperature Distribution—affected by land-water relation as well as latitude