Instructor: Wood
GLG 110

Exam 3 Study Guide

Slope Stability & Landslides – Chapter 9

- Slow mass wasting, creep and solifluction
- Rapid mass wasting: Slump, Mudflows (earth flows, debris flows, lahars), Rock Fall, Avalanche
- Mass Wasting Triggers: steepened slope, water pressure, overloading slope, undercut slope, earthquakes, volcanoes, nature of bedrock (dipping beds, sand over clay, etc)
- Preventing Landslides: drainage systems, terracing, decrease slope, engineering techniques (bolting, gabions, retaining walls, shotcrete, etc.)
- Land use planning: Landslide hazard maps, geologic surveys of land, engineering for landslide prevention, building code adherence.
- Real-time monitoring of landslides

Coastal Processes/Shorelines – Chapter 10

- Properties of waves: wavelength, wave motion, wave breaks
- Waves generated by wind; wave energy directed to headlands
- Sandy beaches in summer – rocky in winter
- Longshore current; sandbars (spits, barrier islands)
- Human impact on shorelines: jetties, groins, breakwaters, sea walls, beach nourishment
- Sea cliff erosion
- Rip currents
- Tides: spring, neap
- Storm Surge; Tropical Cyclones; Tornadoes

Water Resources & Water Pollution – Chapter 12 & 13

- Hydrologic Cycle
- Groundwater use: irrigation uses most in US
- Nature of groundwater: water table, zone of aeration, zone of saturation, direction of groundwater flow
- Porosity and permeability, aquifer
- Perched water tables, artesian wells
- Effluent Streams (gaining/wet climates) Influent Streams (losing/dry climates)
- Groundwater problems: cone of depression, salt water contamination, subsidence (San Joaquin Valley, Arizona), limestone, human pollution
- Karst Topography: sinkholes and caves
- Ogalalla Aquifer depletion
- Human Pollution: point and non-point sources, Clean Water Act 1972, hazardous waste

This list may be incomplete. Questions may also be taken from the text, videos, homework, or other in-class activities.