The Exam Style

Multiple choice, true/false, completion, short list, short definition, lab-style problems, essay / sketching / drawing, map calculations / identification, identification of surface landforms from slides. The quiz will focus on new material from mid-term, but with basic fundamental questions related to theme concepts covered early in the class.

Recommended Study Techniques

1) go over pre-lab questions / study them

- 2) review the "How to Study" sheet handed out at beginning of term
- 3) use the concepts below as a guide to help you focus on your notes
- 4) memorize terms and concepts
- 5) go back over the labs and make sure you can do the tricks / skills
- 6) review some of the important figures in your lab manual and text

- 7) go to the lab and look at the lab answer keys, and study the physical models / displays.
- 8) review the techniques for working with maps / air photos
- 9) Go over and study the Moodle practice questions (mass wasting, rivers, glaciers, deserts, coasts)
- 10) give your dog a bath
- 11) drink water

	Age	mud flow
KEY WORDS	Process	landslide
	Bedrock vs. regolith	debris slide
Topo Map Review	Wind-water-ice-gravity	solifluction
	Upland vs. Valley bottom	slump
topographic maps	Hillslope	rock fall
north arrow	Active Channel	
magnetic declination	Floodplain	Rivers
map scale	Terrace	
fractional scale		Rivers / fluvial
graphical scale	Soil/Mass Wasting	stream gradient
longitude latitude		channel
township-range-section	bedrock	floodplain
equator	soil	oxbow lake
prime meridian	regolith	meandering
parallels	colluvium	levees
angular measurement	alluvium	cutoff
7.5 min quadrangle	drift	cutbank
contour interval	lacustrine	floodplain
index contour	anthropogenic	terrace
law of V's / streams	aeolian	stream gradient
air photos	clay	bedload
stereovision	mass wasting	suspended load
	slope gradient	dissolved load
Landscape Analysis	angle of repose	braided
	creep	straight
Four Criteria:	slide	normal discharge
Landform	flow	flood discharge
Material	debris flow	capacity vs. competence

dendritic trellis radial alluvial fans deltas base level watershed drainage divide

Hydrologic Cycle

hydrologic cycle precipitation evaporation advection convection infiltration evapotranspiration condensation vegetative interception runoff soil moisture ground water surface water rivers lakes oceans atmospheric moisture glaciers / ice budget biologic water

Glaciers

glaciers snowfields snow-firn-ice global ice budget alpine glaciers continental glaciers cirque glaciers piedmont glaciers ice sheets ice shelf temperate glacier polar glacier basal slip internal ice flow crevasse / fracture transverse crevasse longitudinal crevasse

glacial surging snow line zone of accumulation zone of ablation ice advance ice retreat static equilibrium glacial erosion plucking abrasion rock flour glacial striations u-shape valleys v-shape valleys hanging valleys paternoster lakes cirque tarn fjords aretes horn col roche moutenee glacial pavement drift till outwash sorted / stratified unsorted / unstratified moraine lateral moraine medial moraine end moraine terminal moraine recessional moraine ground moraine glacial erratics outwash plain kettles drumlins eskers kames glacial climate interglacial climate climate change Pleistocene glaciation Oxygen Isotope record Laurentide Ice Sheet Glacial / Pluvial Lakes Milankovitch Theory

Deserts

arid climate desert semi-arid polar deserts sub-tropical deserts orographic / rain shadow effect Playa lakes salt flats pluvial lakes differential erosion butte mesa Inselbergs pediments badlands piedmont mountain front alluvial fan bajada bolson closed drainage arrovo aeolian deflation blow outs ventifacts desert pavement desert varnish sand dune erg dune morphology wind direction barchan dune parabolic dune transverse dune longitudinal dune loess desertification Coasts Ocean

Gecan Coast Marginal Marine salinity density

ocean convection tidal bulge spring tide neap tides tidal range daily tidal cycle ocean currents waves storm suge hurricane orbital waves wave crest wave trough wave height tsunami wave length wave velocity wave base surf zone breaker swash longshore current rip currents beach foreshore wave-cut platform wave-cut terrace sand beach vs. rock coast longshore drift spit baymouth bar tombolo tied island jetties groins breakwater erosional headlands sea cliffs sea stacks sea arches barrier islands back barrier lagoon tidal inlet delta submergent emergent fjords estuaries coastal uplift coastal subsidence

sea level rise sea level fall reefs

Questions for Thought

Do you know how to deal with maps?... profiles, map reading, directions, topography, contour lines, elevations? Can you calculate a stream gradient? I.D. a channel pattern and drainage pattern. What about simple unit conversions? What's the difference between a floodplain and a terrace? What are drainage divides and how are watersheds defined? What are the hazards associated with mass wasting and rivers? Can you draw, label, and discuss the hydrologic cycle in detail? Draw a matrix summary of the landslide classification system based on material and process. How do glaciers and glacial ice form? Why do glaciers flow? How does the global ice budget relate to sea level / vice versa? How does it relate to climate? What are the physical differences between a temperate and polar glacier? What are the erosional and depositional effects of glaciation at the earth's surface? How does a fluvial-dominated landscape compare to a glacial-dominated landscape? What are the diagnostic landforms associated with alpine glaciers vs. continental glaciers? How has glaciation affected North America over the past 2 million years? How are glaciations related to sea level fluctuations? What are the precipitation / vegetative characteristics of a "desert"? Are all deserts hot? How are landforms in a desert different from humid climates and why? How do ocean tides form? What drives ocean circulation / currents? How do waves form? What is their morphology and physics? What coastal landforms are associated with emergent coasts? with submergent coasts? What are the primary hazards associated with coastal areas... particularly coastal areas in western Oregon? How do rocky shorelines erode / evolve over time? What are the basic beach transportation processes?

2. Lab Skills to Work On

Locate positions on a map? I.D. contour interval, hills, valleys, etc? Calculate stream gradient? recognize steep vs. gentle topography? azimuth vs. quadrant compass bearings?

Location by township, range, section?

Identify basic river features: e.g. floodplain, channel, oxbow, terrace, braided river, meandering river

How about seeing airphotos in 3-D?

Drawing contour lines in general (interpoloating points of constant elevation).

Calculating gradients from maps.

Calculating groundwater gradients.

Measuring distances, directions, and scales on a topographic map.

Reading contour lines / elevations from a topographic map.

Determining gradients from a topographic map (slope gradients, stream gradients).

Calculating basic rates of process (change in process per unit time: e.g. rate of delta growth, rate of coastal erosion, rate of uplift, etc.)

Interpreting aerial photographs / seeing in stereoscopic vision.

Identifying actual landforms from slides / photos.

Identifying landforms and geomorphic processes on topographic maps (e.g. glacial forms, karst forms, river

forms, desert forms, etc.).

Determining the direction of ice flow from drumlins, or from terminal / end moraine patterns. Can you label and identify landforms from different climates on a block model? Can you identify landforms from slides / photographs?