

Geo101 “The Earth” Final review sheet

** This is NOT a comprehensive summary of what will be on the final! This page should serve as a guide as you study from your notes and from the textbook **

Basic Concepts of Geology

- earth is an evolving system
- plate tectonics - unifying theme to understanding earth's history
- the earth is very old (4.6 billion years)
- earth is impacted by both internal and external processes
- geologic processes yield a strong impact on human activities

Plate Tectonics

Alfred Wegener and multiple lines of evidence for continental drift
paleomagnetism, polar wander and proof of seafloor spreading
plates of the earth's lithosphere,
plate boundary types, sense of motion
features of the different types of plate boundaries

Rocks and Minerals

definition of mineral, common classes of rock-forming mineral
igneous rocks - magma formation, composition, movement
igneous rock types, environments, geologic setting
sedimentary rocks - physical and chemical weathering
sed. rock types, sedimentary structures, geologic setting
metamorphic rocks - formation from other rocks
types of metamorphic rocks, P-T relations, index minerals
metamorphic grade and facies, geologic settings

Climate, Weather and Global Change

atmospheric circulation
ocean currents
global precipitation patterns
evidence for recent global climate change
records of atmospheric composition - CH₄ & CO₂
glaciation and the ice ages
the global carbon cycle
natural system
human perturbations

Geologic Processes

volcanism - lava and other volcanic products, composition of lava
architecture of volcanoes
geologic settings of volcanisms, relations with plate boundaries
earthquakes - types of faults and sense of motion
seismic waves, measuring and locating earthquakes
plate tectonic setting of earthquakes
mountain building and crustal deformation
plate tectonic setting of mountain building
stress and strain, structures of rock deformation - faults and folds
isostasy, terrains, continental accretion
hydrologic cycle - drainage networks and drainage basins
groundwater, surface water, precipitation
marine geology - landscapes below the sea
seafloor spreading and magnetic reversals
ocean currents - surface and deepwater
desert environments - defined by aridity
types of deserts, plate tectonic setting of desert
erosion and sediment deposition in deserts

Geologic Time

uniformitarianism, seven principles of geology
unconformities - missing time in the stratigraphic record
the geologic time scale
geology, biology and environmental conditions of
- the Hadean
- the Archean
- the Proterozoic