REVIEW FOR FINAL
Lecture – Basics of Geologic Time (Lab 11; Textbook Chp. 11)
Terms to Know:
Relative Time               Absolute Time               Principle of Superposition
Cross-Cutting Relations     Original Horizontality         Unconformity
Half-Life                   Principle of Inclusions        Radiometric Decay
Stable Isotope              Unstable Isotope

Concepts to Know:
Know the simplified geologic time scale
What is the different between relative and absolute geologic time?
Know how to determine the relative geologic history using the four principles of relative age dating of a simple cross-section.
Know the different unstable isotopes useful for dating geological materials
Know how to calculate the age of a geologic material given the half-life value and using an isotope decay curve to determine the number of half lives
What is the significance of an unconformity?

Lecture – Overview of Solar System (Planetarium Show; Textbook Chp 22)
Terms to Know:
Terrestrial Planets        Jovian Planets        Lunar Highlands        Lunar Maria
Craters                    Asteroids              Impact Hypothesis        Comets
Kuiper Belt                 Asteroid Belt         Oort Cloud              Gas Giants

Concepts to Know:
Be able to name the terrestrial and Jovian planets.
What basics general characteristics differentiate the terrestrial and Jovian planets?
In detail, describe the geology of Mercury
In detail, describe the geology and atmosphere of Venus
Give me an overview of the history of the moon
In detail, describe the geology and atmosphere of Mars
Discuss the possibility of life on Mars including a description of the factors that may support life.
What is the general principle of terrestrial planet development?
Know the composition of the Jovian planets and the nature of the moons that orbit around the Jovian planets

Lecture – Earth History (Planetarium Show; Slide Show-CEES; Textbook Chp. 12)
Terms to Know:
Differentiation               Impact Hypothesis           Era of Asteroidal Bombardment
Stromatolite                  Red Bed                        Prokaryote
Snowball Earth                Trace Fossil                   Continental Drift
Permian Extinction            K-T Extinction                Fossil
Dinosaurs                     Mammals                        Glacial Period

Concepts to Know:
Know all six of the geologic eons/eras (in correct order) and know the absolute ages for each period.
What geologic significant events occurred during the Hadean?
What geologic significant events occurred during the Archean?
What geologic significant events occurred during the Proterozoic?
When did the greatest pollution event in the history of the earth occur and describe this event.
What is the difference between Archean and Early Proterozoic sedimentary rocks?
Are continents fixed or do they move with geologic time? Explain!
What geologic significant events occurred during the Paleozoic?
What caused the extinction of the dinosaurs?
What geologic significant events occurred during the Cenozoic?
Be able to describe the climatic history of earth during the last 100 Ma

Lecture – Earthquakes (Textbook Chp. 8)
Terms to Know:
Focus Epicenter Fault Mantle
Seismograph Body Waves P-waves S-waves
Surface Waves Crust Intraplate Earthquakes Inner Core
Outer Core S-P Interval Modified Mercalli Ring of Fire
Oceanic Ridge System (mid-oceanic ridge) Elastic Rebound Theory Ritcher Scale

Concepts to Know:
Know the basic terminology associated with earthquakes.
What is elastic rebound?
Know the internal structure of the earth (simple).
How do we know the outer core is liquid? Or the inner core is solid?
Locating an earthquakes epicenter.
How is earthquake intensity measured.
Where do most earthquakes occur?

Lecture – Volcanoes (Textbook Chp. 9) and Powerpoint on CEES
Terms to Know:
Shield Volcano Composite Cone Caldera / Volcanic Dome Laze
Lahar Pahoehoe Tephra Aa
Nuee Ardente Obsidian Andesite Rhyolite
Volcanic Mudflow Basalt Lava River and Fountain Vog
Pyroclastics St Elmo’s Fire Votalite Content Viscosity

Concepts to Know:
What is the relationship between lava chemistry, mineralogy, viscosity, gas content, and eruptive behavior?
What type of volcanoes erupt lava versus pyroclastics.
What are the three types of volcanoes and how are they connected with the three volcanic igneous rocks you will have on the lab final.
In detail know about the five different types of volcanic hazards

**Comprehensive Section**

Terms to Know:

<table>
<thead>
<tr>
<th>Ocean</th>
<th>Groundwater</th>
<th>Glaciers</th>
<th>Precipitation</th>
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<tbody>
<tr>
<td>Evaporation</td>
<td>Runoff</td>
<td>Running Water</td>
<td>Wind</td>
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<tr>
<td>Oxygen</td>
<td>Nitrogen</td>
<td>Carbon Dioxide</td>
<td>Troposphere</td>
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<tr>
<td>Stratosphere</td>
<td>Igneous</td>
<td>Metamorphic</td>
<td>Sedimentary</td>
</tr>
<tr>
<td>Minerals</td>
<td>Hardness</td>
<td>Cleavage</td>
<td>Tropopause</td>
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</tbody>
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Concepts to Know:
- What is the hydrologic cycle? Know the main reservoirs and fluxes.
- What are the layers of the atmosphere?
- What gasses presently make up Earth’s atmosphere?
- Know the outer loop of the rock cycle.
- What is the difference between erosion and deposition?
- Know in order all of the minerals on Mohr’s hardness scale.