Ch#1
List and understand the sciences traditionally included in Earth science.
Summarize some of the relationships between people and the natural environment.
Describe the nature of scientific inquiry and list the basic steps of the scientific method.
Summarize the early evolution of Earth in order to understand Earth's place in the Universe.
Describe how we learn about the Earth and provide examples of Earth spheres at work.
Explore the Geosphere and become familiar with Earth's physical features.
Investigate Earth system science.

Ch#2
Explain the difference between a mineral and a rock.
Describe the basic structure of an atom and how atoms relate to elements, ions, compounds, and isotopes.
Describe the physical properties of minerals and how they can be used for mineral identification.
List the most important elements and rock-forming minerals that compose Earth's continental crust.
List the basic compositions and structures of the silicate minerals.
Give examples of the economic use of some nonsilicate minerals and distinguish between mineral resources, reserves, and ores.

Ch#3
Diagram the rock cycle and discuss the geologic processes and energy sources that contribute to each rock group.
List some of the most common igneous rocks and use them to explain how igneous rocks form and are classified.
Briefly explain the origin, compositional variations, and crystallization of magma and the distribution of igneous rocks.
Provide examples to compare and contrast the most common detrital and chemical sedimentary rocks and their environments of formation.

Classify the most common metamorphic rocks according to how the rocks form and their textures.

Understand the importance of rocks and how their characteristics provide clues to geologic events and as indicators for exploration of metallic and nonmetallic mineral resources.

Ch#4

Define and describe the processes of weathering and erosion, including examples of negative and beneficial effects of these processes.

Use examples to explain the difference between mechanical and chemical weathering and the variation in the rate of weathering.

Discuss soil composition, texture, structure, formation, and classification.

Provide examples of various types of mass wasting and describe the controls and triggers of this process.

Ch#5

Describe the distribution of H2O within the Hydrosphere and the movement of H2O through the hydrologic cycle.

Describe the process of streamflow and the factors influencing stream erosion, transportation, and deposition.

Give examples illustrating the connection between landscape features and runoff including channels, stream valleys, flooding events, and drainage patterns.

Discuss the occurrence and movement of groundwater.

Explain unique features and environmental concerns associated with groundwater and the use of groundwater as a nonrenewable resource including: subsidence, contamination, and sinkholes.

Ch#6

Define the key term glacier including examples of different types and the locations where they are found.

Discuss glacial movement and investigate the budget of a glacier.
Describe the features produced by glacial erosion and deposition.

Examine the causal theories of glacial ages including the glacial events of the Pleistocene epoch.

Discuss geological processes in arid climates, including the development of the Basin and Range region and examples of erosional and depositional features produced by wind and water.

Ch#7

Define earthquake including key terms used to describe the causes and results.

Compare and contrast the properties of different types of seismic waves.

Examine the worldwide distribution of earthquakes including how scientists determine the location and size of the earthquake.

Explain earthquakes as natural hazards and list other destructive phenomena related to earthquakes.

Describe Earth's interior structure and composition.

Ch#8

Compare and contrast the scientific ideas and definitions for the continental drift hypothesis and the theory of plate tectonics.

Explain the differences among divergent, convergent, and transform plate boundaries, including the major processes that occur at these boundaries.

List and describe the evidence used to support the Plate Tectonics theory.

Describe the models that have been proposed to explain the driving mechanisms for plate motion.

Ch#9

List the factors that contribute to and determine the violence of volcanic eruptions.

Describe the various types of volcanoes and other features produced by volcanic activity including materials extruded and hazards associated with eruptions.

List and describe several intrusive igneous features.

Discuss the role of heat, pressure, and composition (including volatiles) in the origin of magma.
Describe the relationship between igneous activity and plate tectonics.

Ch# 10
Discuss rock deformation and list the factors that influence the strength of a rock.

List the major types of folds and faults and describe how they form.

Provide examples of the association between mountains and plate tectonics, including convergent boundaries.

Describe the process of isostasy and the role of isostatic adjustment during changes in crustal elevations.

Ch#11
Explore the contributions of prominent scientists to the science of historical geology, including the doctrine of uniformitarianism.

Give the definitions of numerical and relative dating and apply relative dating techniques to understand how scientists reconstruct Earth's history.

Explain radioactivity and radiometric dating.

Describe the development and application of the geologic time scale.

Ch#12
Understand the complex history of the geologic past by using the Geologic Time Scale. List significant geologic, biologic, and special events for each Era, including the largest span of geologic time during the Precambrian Era.

List the principal developments during the Paleozoic Era, including significant geologic, biologic, and special events.

List the principal developments during the Mesozoic Era, including significant geologic, biologic, and special events.

List the principal developments during the Cenozoic Era, including significant geologic, biologic, and special events.

Ch#13
Explore the oceans and features of our "Blue Planet," including the techniques used to learn more about the ocean floor.
Divide the ocean floor into three topographic units and describe the features associated with both passive and active continental margins.

Describe how each of the three broad categories of seafloor sediments originates and the association between seafloor sediments and climate change.

In addition to the above at least one question from each of the assigned films will also appear.

You may use one 8.5” X 11” page of your hand written notes. No typed notes or photocopied note or lift up flaps may be used.

There will be extra credit offered on the midterm as well as in class.