G-100 Spring 2009 Exam 1 Study Guide

Chapters 1 and 2:

Layers of the Earth and composition/mobility of the layers Earth's magnetic field, seafloor record Evidence for Plate Tectonic Theory How we measure plate movement, range of movement rates Types and composition of plates Types of plate boundaries and how they are moving Occurrences of volcanoes and earthquakes at plate boundaries

Chapter 3:

Definition of a mineral and a rock Concept of SiO_4 tetrahedron as building block for silicate minerals Cleavage/crystal habit as a reflection of atomic structure Common minerals Difference between mafic and felsic minerals Bowen's Reaction Series: mineral changes with dropping temperature Three main types of rocks and how they form The rock cycle

Chapter 4:

Extrusive vs. intrusive rocks, cooling rates, and grain sizes, examples of each Types of intrusive bodies Mafic vs. felsic rocks, examples of each Partial melting and the two main ways it occurs Tectonic settings in which the two main types of partial melting occur Magmatic Differentiation: fractional crystallization and magma mixing

Chapter 12:

Types of lava

Texture of volcanic rocks

Types of volcanoes, magma composition that creates each

How eruptions of felsic, mafic, and intermediate magma behave

Types of igneous intrusions (sills, dikes, batholiths, plutons)

Volcanic hazards (pyroclastic flow, lahar, etc.)

Volcano types characteristic of hot spots, subduction zones, and mid ocean ridges or rifts Natural resources from volcanoes

Chapter 23:

Different types of energy resources Renewable vs. Non-Renewable resources