**ES104 Quiz 2 Study Guide - Fall 2006**

**RECOMMENDED STUDY TECHNIQUES**

1) review the "How to Study Physical Science" guide available on the web site.
2) use the concepts below as a guide to help you focus on your notes
3) memorize terms and concepts (make flash cards, rewrite definitions 100 times, etc.)
4) go back over the labs and make sure you can do the tricks / skills
5) review some of the important figures in your lab manual and text
6) go back over the previous study guides
7) be able to link the terms to concepts, and the concepts to Earth processes
8) change your socks and drink plenty of water
9) clean your room....

10) Go to the class website and view all "Figures / Overheads to Accompany Selected Class Notes"
    Seismology / Earthquake Figures
    Periodic Charts of the Elements
    Mineral Identification Guide
    Rock Identification Guide
    Volcanism / Igneous Activity Figures

## I would spend a MINIMUM of 3-4 hours studying for this quiz... if I wanted to do well!

**Key Words for New Material Since Mid-Term**

*Plate Tectonics*

Mineral
Element
Rock
Rock Types
Igneous
e.g. basalt
e.g. granite
Sedimentary
e.g. sandstone
Metamorphic
Magma
Lava
Weathering
Sediment
Volcano
Earthquake
Seismology
Crust
Oceanic (basalt)
Continental (granite)
Lithosphere (Plate)
Crust
Upper Mantle
Asthenosphere
Silly Putty
Deep Mantle
Outer Core (solid)
Inner Core (liquid)
Plate Tectonics
Alfred Wegener
Continental Drift
Plate Boundaries
Convergent
Divergent
Transform
Convergent
Subduction
Trench
Volcanic Arc
(e.g. Cascades)
Plate Destruction
accretionary tectonics
Divergent
Seafloor Spreading
Mid-Oceanic Ridge
Plate Creation
Transform
Fault
e.g. San Andreas
e.g. Offset Mid-Ocean Ridge
Alfred Wegner
Continental Drift
Jig-Saw Fit of Continents
Pangaea
Match-up of Fossils
Match-up of Geology
Modern Evidence
Seismic Distribution
Volcanic Distribution
Trench Distribution
Hot Spots
Hot Spot Tracks
Hawaiian Islands

Emperor Seamount
Seamounts
Volcanic Islands
Plate Motion Rates
1-10 cm/yr

Plate Driving Mechanism
Internal Heat
Radioactive Source
Heat Exchange
Mantle Convection
Convection cells
rising hot rock
sinking cool rock

*Earthquakes*

earthquake
source of earthquakes
fault
volcanism
man-induced
earthquake epicenter
earthquake
epicenter
focus
wave refraction
wave reflection
s-wave shadow zone
p-wave shadow zone
seismic risk
seismic hazard
p wave
s wave
compressional wave
coastal subsidence
marsh submergence
tsunami cycle
Risk Factors
hazard
risk
alluvium
bedrock
groundwater
Monmouth hazards
Willamette Valley hazards
saturated sediments
ground shaking
all fall down

*Basic Chemistry*

matter
elements
compounds
shear wave
surface wave
love wave
San Andreas Fault
fault creep
stick-slip
fault
blind fault
seismic waves
source of earthquakes
fault strand
fault zone
fault segment
ductile deformation
elastic deformation
brittle deformation
elastic rebound
foreshocks
aftershocks
main shock
wave form
wavelength
frequency
amplitude
body waves
surface waves
longitudinal waves
primary waves
shear waves
nucleus
proton
neutron
electron
electron shells
atomic no.
octet rule
atomic weight
isotope
atomic charge balance
atomic bonding
noble gases
valence electrons
ionic bonds
positive ions
negative ions
covalent bonds
periodic chart
electron configuration
transverse waves
seismograph
seismogram
first p-wave arrival
first s-wave arrival
p wave velocity
s wave velocity
surface wave velocity
epicenter / triangulation
Mercalli Scale
earthquake intensity
earthquake magnitude
Richter Scale
seismicity
tsunami
ground shaking
earthquake / landslides
liquefaction
Oregon / Pacific Northwest
PNW earthquake hazards
subduction zone earthquakes
crustal earthquakes
volcanic earthquakes
paleoseismology
last PNW big event = 300 yr
tsunami deposits (sand)
bay mud
coastal uplift
*Mineralogy*

mineral
rock
silica-oxygen tetrahedron
cubic atomic arrangement
atomic arrangement
mineral definition
physical properties
color
luster
streak
fracture
hardness
cleavage
fracture
specific gravity
density
rock forming minerals
crustal composition

silicate minerals
carbonate minerals
oxides
halides
sulfates
magnetic minerals
acid-fizz mineral
ferromagnesian silicate
minerals
mafic minerals (Fe-Mg rich)
felsic minerals
non-ferromagnesian minerals

*Rocks / Igneous Rocks*

rock
igneous
sedimentary
metamorphic
magma
lava
cooling / crystallization

**Other Concepts and Ideas Since the Mid-Term:**

Can you identify examples of open, isolated, closed systems?
Can you identify examples of positive and negative feedback?
What do you know about the energy cycle?
Can you sketch the interior of the Earth?
Can you complete basic unit calculations from English to Metric and vice versa?
Can you calculate density?
How about Newton's law of gravitational attraction?
If given conversion factors, can you work a unit conversion problem?
What is the scientific method? Can you list the elements of the process?
Which direction does heat flow and why?

Why does a hot air balloon rise? Why do hot rocks rise? Why does magma rise, Why do their cold counterparts sink?
How do we know when the last great subduction zone earthquake was in the PNW?

What is a tsuami sediment cycle? What happens to the coast of oregon during an earthquake cycle?

can you determine the vital statistics of atoms / elements from the periodic chart?

Can you answer all of the homework questions from the chem / minerals homework?

Did you read the book and look at the figures?

Can you relate the terms, their definitions, and how they relate to one another?

Can you cite lists of things? (e.g. list 4 physical properties used to I.D. minerals).

Do you know how the Three Stooges relate to mineralogy?

What is the method for classifying and interpreting igneous rocks?

Can you answer all of the questions from the rocks homeworks?