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) Read the book again and again.
7) be able to link the terms to concepts, and the concepts to Earth processes
8) go over the lab exercise answer keys posted on the web site, check your lab work
9) Study until you fall over, then study some more.
10) change your socks and drink plenty of water
11) clean your room....
12) Go to the class website and view all notes, answer keys, and material currently available

I would spend a MINIMUM of 10-12 hours studying for this exam... if I wanted to do well!

Key Words for New Material Since Beginning of Term

Introduction to Earth Systems

age of Earth
Earth history
astronomy
geology
meteorology
oceanography
geosphere
lithosphere
outer core
inner core
mantle
atmosphere
gaseous envelope
atmospheric compostion
hydrosphere
hydrologic cycle
evaporation
advection
transpiration
precipitation
groundwater
surface water
basic earth facts
rotational period
revolusional period
matter

time
energy
hydrologic cycle
history of ocean exploration
depth sea drilling

Physics Review

mass
length
time
temperature
force
kg, m, newton
angle
area
volume
(know all units)

Energy
force
pressure
density
work

heat
heat flow
heat flux
heat expansion
heat contraction
solid
liquid
gas
heat transfer
conduction
convection
radiation
heat gain
heat loss
evaporation
freezing
condensation
sublimation
conservation of mass
conservation of energy
newtons' 2nd law
properties of water
heat capacity
fluidity
viscosity
density
salinity
bipolar molecule
temp. vs. density
temp vs. viscosity
bouyancy
buoyant force
gravitational force
"sinker" vs. "floater"
Archimede's Principle
upward force vector
downward force vector
density vs. buoyancy

Maps and Charts

seafloor spreading
mid-oceanic ridge
basalt
sediment
sand, gravel, mud
biogenic sediment
microscopic organisms
volcanic rocks
volcanic eruption
sedimentary rocks
limestone
calcium carbonate
gravel
sand
silt
clay
shale
Plate Tectonics
Lithospheric plate
Lithosphere
Crust
Mantle
Asthenosphere
Outer core
Inner core
Magma
Lava
earthquake
Geothermal energy
Geothermal gradient
Continental drift
Alfred wegener
Fit of continents
Magnetic field
Paleomagnetism
Seafloor stripes
Normal polarity
Reverse polarity
Polarity reversal
Plate boundaries
Convergent
Divergent
Transform
mid-ocean ridge
seafloor spreading
trench
subduction zone
volcanic arc
triple point junction
continental rift
oceanic-oceanic subduction
continental-oceanic subduction
continental-continental subduction
magnetometer
polar wandering
polarity reversals
hotspot
hotspot track
Hawaiian Islands
Mantle convection
Continental crust (granite-thick)
Oceanic crust (basalt-thin)
Plate motion vector
Rate of plate motion (1-10 cm/yr)
Pangaea
Magnetic declination
Magnetic inclination
South pole-up
North pole-down
Magnetic field drift
Oblique subduction
Continental accretion
Oregon Coast Range accretion
Crustal rotation
Crustal compression
Crustal tension
Marine Provinces

Bathymetry
Fathom
Average depths (3000-4000 m)
Sea level
Relative sea level
Crustal uplift / subsidence
Eustatic sea level changes
Sea level rise
Sea level fall
Tidal fluctuation
Diurnal tidal fluctuation
Tidal bulge
Neap tide
Spring tide
Gravity pull-Earth-Sun-moon
Sea level vs. global ice budget
Glacial climate
Interglacial climate
Slope of sea floor
mid-ocean ridge
ocean rise
trenches
islands
seamount
sonar (side-scanning sonar)
hydrothermal vents
passive margins
active margins
continental shelf
inner shelf
outer shelf
shelf break
continental slope
continental rise
abyssal plain
submarine canyons
submarine fans

Marine Sediments
Sediment
Lithogenic
Chemical
Biogenic
volcanogenic
Clastic
Noclastic
Siliciclastic
Sediment source (continent)
Gravel
Sand
Silt
Clay
Animal skeletons
Exoskeletons
Shells
Macroscopic fossils
Microscopic fossils
Calcium carbonate
Pellets
Fecal matter
Evaporite minerals
Rock salt
Gypsum
Neritic sediments
Turbidites
Deep ocean sediments
Pelagic clays
Chemical oozes
Biogenic oozes
Carbonate compensation depth
Siliceous oozes
Carbonic acid
Carbon dioxide
h-2-O
dissolved ions
partial pressure
carbon dioxide +
water = carbonic acid
pH
calcium carbonate chemistry
water chemistry
water-NaCl chemistry

Key Words from Lab
Unit algebra
Unit conversion
Mass
Length
Time
Volume
Temperature
Velocity
Density
Isobath
Contour line
Contour interval

Submarine canyon
Map scale
Fractional scale
North arrow
True north
Magnetic north
Profile
Vertical exaggeration
Two way travel time
One way travel time
Sonar
Speed of sound
Latitude
Longitude
Nautical mile
Statute mile
Decimal degrees
Degrees
Minutes
Seconds
Magnetic declination
Triangulation
Horizontal scale
Vertical scale
Seafloor spreading
Transform fault
Tension
Compression
Shear
Plate motion rate
Spreading rate
Time zones
Longitude vs. time zones
Juan de Fuca Plate
Seamount
Guyot
Fracture zone
East pacific rise
mid-ocean ridge
convergent boundaries
ring of fire
volcanic islands
carbonate content
clay
sediment profile
drill core
sediment accumulation rate
sediment trap
CCD
Carbonate compensation depth

**Key Concepts / Skills**

Understand the basic interaction between the ocean and the atmosphere (from video 1 we watched).
Understand the hydrologic cycle, be able to sketch it.
Be able to draw bathymetric maps
Be able to draw a profile and determine the vertical exaggeration.
Be able to read a marine map, determine directions, located positions in long. and lat.
Can you solve basic physics problems / equations if given data?
What are the reasons that ocean water circulates?
What density and salinity contrasts would you observe at various positions in the ocean? Why?
How does salinity and density relate to ocean circulation?
Why is the second law of thermodynamics important for ocean processes?
What are the fundamental driving forces of ocean processes? How do they influence the ocean?
Can you identify the basic tectonic features of the seafloor, label them on a map or profile?
Can you list and discuss all of the sediment sources / types in the ocean?
Can you draw a profile from on-shore to off-shore of the ocean, labeling all of the marine provinces?
Can you calculate a sediment accumulation rate?
Can you determine a plate motion rate?
Can you identify seafloor stripes and explain magnetic polarity reversals?
Can you discuss why the term “sea level” is relative?
Can you locate a ship on a nautical map using triangulation?
Can you convert between statute and nautical miles?
Can you locate positions by longitude and latitude?
Can you convert from degrees,minutes, seconds to decimal degrees?
Can you plot data on a graph and interpret the results relative to ocean processes?