

# Geology 261 -- Physical Geology

## Exam II study guide

You should do fine on exam II if you study the following:

### Topics:

calcite dissolution reaction  
two main controls on chemical weathering (esp. regarding climate).  
relationship between weathering rates of minerals and the number of Si-O bonds  
principal types of sedimentary rocks and the depositional environments in which they form.  
modern day examples of depositional environments and the sedimentary rocks likely to form.  
energy and sedimentary environments.  
role of latitude in limestone & evaporite formation.  
ways that sediment is held together to make sedimentary rocks.  
relationship between metamorphism and plate tectonics.  
principal metamorphic rock types, what minerals comprise them, and differences between them.  
major observations and topics discussed on the class field trip.  
principles used in relative age dating of rocks.  
understanding geologic age relations for a given set of outcrops (see handouts).  
how radiometric dating works (parent / daughter ratio; half lives, etc) with an example.  
specific reasons why zircon is such an ideal mineral for radiometric dating.  
the geologic time scale including Eons, Eras, and Periods of time.  
major events on Earth (oldest rocks, fossilizable hard parts, mass extinctions, earliest hominids).  
evidence for an extraterrestrial cause for dinosaur extinction.  
how bentonites can be used to date fossils and therefore sedimentary rocks.

### Terms:

metamorphism  
foliation  
geothermal gradient  
talus  
exfoliation  
differential weathering  
congruent & incongruent dissolution  
unconformity (disconformity, nonconformity, angular unconformity)  
alpha and beta decay  
outcrop  
correlation  
index fossil