

GEL 2440— Mineralogy Lab  
Fall 2005  
Exam Info (**Exam is Dec. 2**)

By now you should be fairly comfortable with identifying diagnostic properties of minerals (if you are not, you need to spend more time looking at the specimens). These properties are what will help you identify the minerals on the quiz. Come and look at the minerals and go to the display cases outside of my office. Time is running short!

I have received a number of questions as to what the exam will cover, so in a nutshell here goes:

- 1) **The minerals themselves**— You will have to identify unknown specimens. Pretend you are out in Wyoming poking around and you come across a rock with unknown minerals. You want to identify the minerals because you think they are cool and the mineral associations will help you identify the rock— which in turn will reflect the region's geologic history. So what are they? This is the idea!
- 2) **Diagnostic properties**— You should know what makes each mineral unique and what you as a geologist can use to tell specific minerals from others— their hardness, whether they cleave, their luster, etc.
- 3) **Formulas**— Those “formulas-to-know” are fair game, either know them and take the chance that nothing really tricky will be on the quiz (the majority are easy to learn/remember & **no notecards = +10% on quiz**) or have them on your notecards.
- 4) **Mineral associations**— Generally, when you look at a mineral in a rock, it is common to find other minerals in proximity to the first. This is a mineral association! This association is also a clue to what the minerals are if you are trying to identify them. If you can identify one of the minerals, often you can by association, identify the others (great when their diagnostic properties are not readily apparent). *E.g. if you see diopside, grossular garnet and some other white mineral, chances are the white mineral is wollastonite (all three minerals are rich in  $\text{Ca}^{2+}$  and are common to high grade metamorphism of a calcareous rock)*
- 5) **Mineral occurrences**— The how, where, and why of mineral formation. What environments or in what types of rock do you find specific minerals. As a rule, you don't see primary (crystallized as the magma cooled) calcite in a basalt. You also don't see tourmaline in a limestone. So what is their occurrence? If you are unsure about occurrences, ask me for help!