

## **Petrology Test III Review Sheet**

### Intro to Metamorphism

Limits of metamorphism

Metamorphic agents, evidence of which agent caused metamorphism

Types of metamorphism, which agents are important in each location, textures that result from each

### Structures, Textures etc.

Prograde vs. retrograde

Classification of met. rocks

Foliation

Which rocks are strongly foliated, weakly, nonfoliated

Protoliths for met rocks

Terms for foliation/cleavage

Terms for other met. textures/structures

### Stable mineral assemblages

Phase rule, degrees of freedom in places on phase diagram,

Necessary vs. mobile elements, how to have minerals exist metastable

Chemographics: plotting minerals, knowing which are stable for bulk comps.

Be familiar with ACF, AKF, CMS diagrams and why choose one over the other

### Facies and P-T-t paths

Various P-T-t paths and how to geologically explain them

Metamorphic terrane vs. metamorphic grade vs. metamorphic zone vs. metamorphic facies

Metamorphic field gradient

Met. facies on a P-T plot

Mafic met. rocks

Protolith, key minerals for the various met facies

### Met. Reactions 1

Isograds, index minerals

Types of mineral reactions

Polymorph phase transition

Net transfer solid-solid reaction

Discontinuous (how we see on chemographics)

Continuous (how we see on chemographics)

Degenerative reactions

### Met Reactions 2

Solid-fluid mineral reactions

Source of fluid

Devolatilization reactions, shapes on an XCO<sub>2</sub> diagram

Decarbonation

Dehydration  
Combined reactions

St. Francois Mnts

General regional geology leading up to the intrusion  
Approximate ages, tectonic setting of granite generation  
Model for generation of coeval granites and ignimbrites  
Cambrian rock units and occurrence in the region