NASC 209 Physical Geology Spring Semester 2019
Midterm Review Ideas

* Be sure you know all of the *Key Terms* that were assigned!

* Be sure to review and practice mineral and igneous rock identification; check out samples in the lab! Review the classification schemes for the rock families and the various groups of minerals.

* Make sure you understand the answers to all of the assigned homework questions (solutions are in the Physical Geology binder by the window in SCIC 113) & the quizzes!

* From the Key Terms lists assigned, make sure you can identify the following without keys and that you know appropriate Key Terms to describe them (a few, in parentheses, were not Key Terms, but we've had a reasonable amount of exposure to them and they are relatively straightforward to identify!):
MINERALS: calcite, orthoclase feldspar, biotite, muscovite, quartz (sulfur, pyrite, hornblende, gypsum, halite);
IGNEOUS ROCKS: andesite, basalt, granite, gabbro, diorite, rhyolite, obsidian, pumice and scoria;

* Keep in mind these thoughts/ideas on what we have discussed, read about, or worked with:

Ch 1: Scientific method and scientific hypotheses; What is the theory of plate tectonics and how does it relate to the rock cycle? Why is uniformitarianism important? How do we model the Earth? What do we know about the different parts? Geologic time scale: relative vs. absolute dating. Major features of the surface of the Earth.

Ch 3: Atoms, compounds, and minerals; What is meant by atomic number? Mass number? Isotope? What is the basic structure of an atom? What are the four types of bonding & examples of each? What are the most common elements in the Earth's crust? What qualifies as a mineral (what are the five criteria?)? What qualifies as a rock (know the exceptions to this rule that we've discussed!)? What are the main mineral groups? What are the different structures of silicates and what role do iron & magnesium play? What are the physical properties that are used to identify minerals? What are the most common rock-forming minerals? Know examples of each of the types of silicate minerals. Know an example from each of the following: carbonates, halides, oxides, sulfides, native elements. Why are minerals important? What are the three main fossil fuels?

Ch 4: How are igneous rocks classified (texture & composition!)? Be able to reproduce and use the classification scheme! Why are some igneous rocks aphanitic and some phaneritic? How do extrusive and intrusive igneous rocks differ? How are they similar? What role does the viscosity of a magma/lava play? What type of magma is produced by melting lithosphere? Know the different types of plutons. What is a pegmatite? What's a porphyry? What good is Bowen's reaction series? How does it explain igneous rock formation? What aren't all magmas ultramafic or mafic? How do magmas evolve?

Ch 5: What are the two categories of crust? What are hydrothermal mineral deposits? Why are they important? What are the main types of volcanos? Where does each type tend to form? What role does viscosity of magma play? What typically happens at divergent plate boundaries? How about convergent ones? What does pyroclastic mean? What volcanos are erupting right now? What role do *hot spots* play in volcanic activity? What about plate tectonics? What comes out of volcanos? What factors affect the explosiveness of an eruption? What are the various dangers associated with volcanoes?

See next page!

Ch 6: What's the difference between weathering and erosion? What are the various types of mechanical & three types of chemical weathering? Know examples of each. How does physical weathering contribute to chemical weathering? How does erosion contribute to weathering? What are the agents of erosion? How can we use the Bowen reaction series to help us understand which minerals are more susceptible to chemical weathering? What role does climate play in weathering? How is soil produced & what good is it? What role does weathering play in producing mineral resources? What is regolith?

Also ...

What type of rock underlies most of Indiana, Michigan, and Ohio? About how old is the bedrock below Manchester University? Why are there so many igneous & metamorphic rocks around here?