**Chemistry 111/112 Exam Review**

**Matter**

* Homogenous and heterogeneous mixtures
* Solutions – compare solute to solvent quantities
* Recognize the difference between soluble and insoluble solutions using a solubility table
* Molarity as a measure of concentration (mol/L)
* Calculate amount/mass using molarity
* Read information about elements from the periodic table (group #, protons, atomic mass…)

**Characteristics of Metals and Nonmetals**

* Physical and chemical properties
* The difference between atoms and ions
* Electrolytes and nonelectrolytes

**Bonding**

* Octet Rule, valence electrons
* Ionic compounds and electron transfer between metals-nonmetals
* Polar molecules
* Covalent compounds and electron sharing between nonmetals
* Draw electron dot diagrams

**Writing and Naming Compounds**

* Naming and writing ionic compounds, molecular compounds, acids and bases
* Formula units
* Multi-valent ions

**Chemical Compounds**

* Law of definite/multiple proportions
* Calculate the average atomic mass of an element from percent composition from its isotopes
* Conversions using moles, mass, number of particles
* Calculate the percent composition of an atom found in a chemical compound
* Calculate molecular formula from empirical formula

**Chemical Reactions**

* Predict the products and identify the five types of reactions (synthesis, decomposition, combustion, single and double replacement)
* Use an activity series to predict the products of a single replacement reaction
* Double replacement reactions – neutralization and precipitation

**Stoichiometry**

* Balance chemical reactions
* Calculate the moles-moles using molar ratio
* Calculate mass-mass using molar mass and molar ratio
* Determine limiting and excess reactants?
* Calculate theoretical yield and percent yield?