**Chemistry 112**

**Midterm Review**

Matter

* Definition
* Characteristics of solids, liquids and gases
* Physical and chemical properties
* Classification system
	+ Substances (elements and compounds) mixtures (heterogeneous and homogeneous)
		- Examples
* The law of conservation of matter
* Atom
	+ Subatomic particles
		- Protons, neutrons and electrons
		- Location within the atom
		- Atomic number
		- Mass number
		- Isotopes
		- Quantum mechanical model
* Periodic Table
* Organization
* Groups/periods
* Family names
* Representative/transition elements
* Electron configurations
	+ Orbitals, principal energy levels, sublevels
	+ Three rules governing electron configuration
		- Aufbau, Hund’s Rule, Pauli exclusion principle
	+ Noble gas notation
	+ Octet rule
	+ Atom and ion configurations
* Ionic Compounds
	+ Metal and nonmetal characteristics
	+ Cations and anions
	+ Ionic bonds
	+ Chemical formulas of ionic compounds - examples
	+ Electron transfer
* Molecular Compounds
	+ Nonmetal combinations
	+ Diatomic molecules
	+ VSEPR theory
	+ Polar vs. nonpolar molecules