

The Chemical Concepts You Are Expected To Know When You Begin College Chemistry II - CHM 1046

College Chemistry CHM 1046 has a prerequisite of College Chemistry I. Since you have completed this course, we will expect that you have already learned basic chemistry concepts. Some of the concepts that I expect you to know are listed below. You are responsible for this information from the first day of class and can expect to see questions that may include these topics starting with the first quiz and examination. If have not learned these concepts in Chemistry I, you have not properly prepared yourself for this course.

1. The student should know the names and symbols of the elements 1 through 38, and Pd, Ag, Cd, Sn, Sb, I, Xe, Cs, Ba, W, Os, Pt, Au, Hg, Pb, Rn, Ra, U, and Pu.
2. The student should know the charges of the common monoatomic ions like Na^{+1} and O^{-2} . The student should know the formulas and charges of the common polyatomic ions, such as nitrate, phosphate, sulfate, etc.
3. The student should be able to identify the common diatomic elements H_2 , N_2 , O_2 , F_2 , Cl_2 , Br_2 , and I_2 .
4. The student should know how to write the formula and give the name and formulas of simple compounds like potassium bromide, ammonium sulfate, copper (II) carbonate, and diphosphorus pentoxide.
5. The student should know how to balance a simple chemical equation.
6. The student should know the definitions of atomic number, atomic mass, and mass number. The student should be familiar with the basic concept of atomic structure and the sub-atomic particles.
7. The student should understand and know how to perform calculations using masses, moles, solution concentrations, and limiting reagents.
8. The student should know and understand how to use the empirical gas laws, Dalton's Law, and the ideal gas law.
9. The student should understand the concept of enthalpy and the basic meaning of ΔH 's.
10. The student should understand the principles of the VSEPR Theory and be able to draw basic Lewis structures, determine the hybridization of individual atoms, and to predict the molecular geometry and shape of given molecules.