General Chemistry II **Dr. M. J. Wieder**
Topic: Chemical Equilibrium

The student should be able to:

1. Contrast the "static" and "dynamic" qualities of chemical equilibrium.

2. Write the mass action expression for a chemical reaction given a balanced equation.

3. Relate the magnitude of the equilibrium constant for a given chemical reaction to such properties as the tendency for the reaction to proceed to completion and the thermodynamic stability/instability of reactants and/or products.

4. Calculate the equilibrium constant for a chemical reaction given the balanced equation and the concentration or gas pressure of each reactant and product.

5. Calculate the concentration or gas pressure of either a reactant or product given the equilibrium constant, the balanced equation, and the concentrations or gas pressures of the other chemical species.

6. Convert K_p values to K_c values and vice versa given a balanced chemical equation and the temperature.

7. Calculate equilibrium constants from a knowledge of standard free energy change values and vice versa.

8. Use LeChatelier's Principle to discuss how various factors can change the position of equilibrium for a specified chemical reaction.

9. Calculate the equilibrium constant for a specified chemical reaction given a series of balanced chemical equations and their respective equilibrium constants.