

Chemistry 116 - Fall 2021  
Dr. Audrey Dell Hammerich  
**11 - Week of October 31**  
Chemical Equilibrium II, Acids and Bases I

**NOTE:** At the end of this week our primary text will shift from Zumdahl to the Analytical Chemistry textbook by Harris. All chapters will be designated by an H (such as H Ch 9) to denote this.

**LAB ASSIGNMENT:** – Online H\_DU 10.5: Ion-Exchange Separation and Spectrophotometric Determination of Nickel and Cobalt (23-2,26-2).

**LECTURE ASSIGNMENT:** Online OWL assigned homework due on Monday, November 8 at noon except "W" problems are due Friday, November 5 at noon.

**Monday, November 1**

Reading Assignment: Z Ch 6.7 - 6.8; Z Ch 7.1 [review solving equilibrium problems: law of mass action written in activities, know what an activity is (activity coefficient, measure of composition, reference measure); conversion between equilibrium constants in concentrations and partial pressures; express  $K$  for mathematical changes to equation for an equilibrium reaction and combining simultaneous equilibria; interpret the value of  $K$ ; finish from Friday: use **Le Châtelier's Principle** to predict, when an equilibrium is disturbed, effect upon products, reactants,  $K$ , equilibrium - change of temperature, total pressure, concentrations/partial pressures; start with the nature of strong acids and bases]

**Wednesday, November 3**

Reading Assignment: Z Ch 7.1 - 7.2 [**Brønsted-Lowry** theory of acids and bases - be able to identify the **conjugate base** for an acid and the **conjugate acid** for a base, calculate  $K_a$  given  $K_b$  of its conjugate base and vice versa; **amphoteric**; water **autoionization**,  $K_w$ , write the autoionization reaction for any amphoteric species; know the seven common strong acids and the soluble strong bases; know different ways to characterize the strength of an acid]

**Friday, November 5**

Reading Assignment: Z Ch 7.3, 7.4, 7.6 [know ways to characterize the strength of a base; strength measured by size of  $K_a$  for acids and  $K_b$  for bases,  $pK_a$  and  $pK_b$ ; pH scale, temperature dependence, determining the pH of strong acids and strong bases, significant figures in logarithms]