Chapter 2 – Water

2.1 Weak Interactions in Aqueous Systems
The following sub-sections are important:

- The Introduction
- Hydrogen Bonding Gives Water its Unusual Properties
- Water Forms Hydrogen Bonds with Polar Solutes
- Water Interacts Electrostatically with Charged Solutes
- Nonpolar Gases are Poorly Soluble in Water
- Nonpolar Compounds Force Energetically Unfavorable Changes in the Structure of Water
- Van der Waals Interactions are Weak Interatomic Attractions
- Weak Interactions are Crucial to Macromolecular Structure and Function
- Solute Affects the Colligative Properties of Aqueous Solutions

2.2 Ionization of Water, Weak Acids, and Weak Bases
The following sub-sections are important:

- The Introduction
- Pure Water is Slightly Ionized
- The Ionization of Water is Expressed by an Equilibrium Constant
- Weak Acids and Bases Have Characteristic Acid Dissociation Constants
- Titration Curves Reveal the pKa of Weak Acids

2.3 Buffering against pH changes in Biological Systems
The following sub-sections are important:

- Buffers are Mixtures of Weak Acids and Their Conjugate Bases
- Weak Acids or Bases Buffer Cells and Tissue against pH Changes