CHM 100 / CHM 101
Chapter 10 Study Guide / Learning Objectives

Chapter 10 in your textbook deals with the concept of energy. In CHM 100 and CHM 101, we only discussed the first five sections in the book (sections 10.1-10.5). We introduced thermodynamics - which is the study of energy transfer – and primarily focused our studies on energy in the form of heat (energy transfer from a region of high temperature to a region of low temperature). These topics are important to us as chemists because heat is often involved in chemical reactions.

After reading sections 10.1-10.5 in your textbook, you should be able to:

[Energy – kinetic energy and potential energy]
- Define energy, kinetic energy, and potential energy.
- List the two common units of energy and how they relate to each other.
- Convert from (kilo)joules to (kilo)calories, or from (kilo)calories to (kilo)joules

[Heat and specific heat]
- Define heat and specific heat.
- Define thermodynamic terms: system, surroundings, endothermic, exothermic
- Describe what haappens to the system and surroundings in an endothermic or exothermic process
- Write the relationship between mass, heat, and specific energy.
- Calculate mass, specific heat, or energy given any two.
- Calculate specific heat of a material given appropriate data (as we did in our classroom experiment)

[Conservation of energy]
- Define the law of conservation of energy, also called the First Law of thermodynamics.

[Practice]
- (p317-318) Q&P – 2, 4, 6, 12, 14, 18, 20, 22, 26, 30, 32, 34