

## Textbook & related reading for the topic of THERMODYNAMICS to prepare for Self Test & RQ 4

The topic of **THERMODYNAMICS** is addressed in several *different* places, including some sections you have already read:

New reading:

(a) **CLASS NOTES Topic #8 pp 43-47**. Read through the terms and definitions in the "boxes" on p 45, 47, 48 & 49 in Class Notes. Also study the energy flow diagrams on p 49. (*We'll cover p 46 in class.*)

(b) **SGC-E-text Chapter 4** A short section to read: Begin with the paragraph beginning "*Water is unique in the Earth system . . .*" on the bottom of p. 76 and continue through the first column on p 77. Also study Figure 4-23 on p 77, which this section refers to. Focus on the concept of **latent heat** and how it is stored or released during phase changes between solid, liquid, and gaseous H<sub>2</sub>O.

(c) Read these sections from **ENERGY RULES** : a simple website containing thermal energy "basics" from: *The Wisconsin Center for Environmental Education (WCEE)*  
<http://www4.uwsp.edu/cnr/wcee/keep/Mod1/Rules/Index.htm>

### Section A Introduction:

<http://www4.uwsp.edu/cnr/wcee/keep/Mod1/Rules/Intro.htm>

### Section B Energy Transfer

<http://www4.uwsp.edu/cnr/wcee/keep/Mod1/Rules/EnTransfer.htm>

### Section C Energy Conversion and the Laws of Thermodynamics

#### 1. Energy Conversion Introduction

<http://www4.uwsp.edu/cnr/wcee/keep/Mod1/Rules/EnConversion.htm>

#### 2. More About the First and Second Laws of Thermodynamics

<http://www4.uwsp.edu/cnr/wcee/keep/Mod1/Rules/ThermoLaws.htm>

Review reading of things we've already covered:

(c) In **SGC-E-Text** - In the last chapter on **ATOMS - The Nature of Things**: Review Section 2.3 (pp -PY-38 to PY-40) and focus on **temperature** and "**The Microscopic Interpretation of Warmth.**"

(d) In **CLASS NOTES**: Review **Topic #4 on Forms of Energy** ( pp 23) and focus on the following terms or concepts: **thermal energy** (bottom of p 23), **the Law of Conservation of Energy and First Law of Thermodynamics, energy efficiency, and phase changes** on p 24, and the definition of a **calorie** (p 22.)

(e) **SGC-E-Text Chapter 3** p 47-48. Focus on the terms illustrated in Figure 3.10 and described in the text: **convection, conduction, radiation, and latent heat**