

**CHEM 1312 - General Chemistry II**  
**Unit Summary**  
**Spring 2010**

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**Unit 1: Chemical Thermodynamics**

***Whitten Text***

Text Chapters (15.1-15.16)

Recommended Problems (2, 4, 8, 14, 18, 20, 24, 30, 34, 42, 46, 52, 56, 74, 78)

***Brown Text***

Text Chapters (5.1-5.8, 8.8, and 19.1-19.7)

Recommended Problems (5.11, 15, 23, 25, 31, 33, 35, 37, 39, 41, 43, 45, 59, 61, 63, 65, 69, 71, 73, 75, 77, 8.65 and 19.11, 13, 15, 23, 45, 49, 53, 55, 57, 59)

**Heat changes and Thermochemistry**

1. Laws of Thermodynamics and definitions of key terms
2. Enthalpy
3. Enthalpy changes in reactions
4. Hess's Law
5. Bond Energies
6. Relationship of Energy ( $\Delta E$ ) and Heat ( $\Delta H$ )

**Spontaneity**

7. Spontaneity
8. Laws of Thermodynamics
9. Entropy (S)
10. Free Energy (G)
11. Temperature and Entropy