

UNIVERSITY OF CALGARY
DEPARTMENT OF CHEMISTRY
COURSE SYLLABUS
WINTER 2015

COURSE: CHEMISTRY 371 - Physical Chemistry I: Thermodynamics

LEC	DAYS	TIME	ROOM	INSTRUCTOR	OFFICE	PHONE	EMAIL	OFFICE HOURS
L01	MWF	12:00-12:50	SA 104	Dr. Yujun Shi	SB 301	210-8674	shiy@ucalgary.ca	Fr 10:50- 11:50

TEXTBOOK: Physical Chemistry, 3rd Edition, Thomas Engel and Philip Reid

TOPICS COVERED AND SUGGESTED READING:

Fundamental Concepts of Thermodynamics - Chapter 1 Section 1.1 to 1.4
The Properties of Real Gases - Chapter 1 Section 1.5 and Chapter 7 Section 7.1 to 7.4
The First Law of Thermodynamics - Chapter 2 Section 2.1 to 2.3, 2.5 to 2.11
The Variation of Internal Energy and Enthalpy - Chapter 3 All
Thermochemistry - Chapter 4 Section 4.1 to 4.5
The Second and Third Law of Thermodynamics - Chapter 5 All
Chemical Equilibrium - Chapter 6 Section 6.1 to 6.13
Phase Diagrams of Pure Substances - Chapter 8 Section 8.1 to 8.7
Ideal and Real Solutions - Chapter 9 Section 9.1 to 9.4, 9.6 to 9.12

LABORATORY EXPERIMENTS:

1. Data Analysis for Physical Chemistry Laboratory - An Introduction to Microsoft Excel
2. Equations of State of Gases
3. Measurements of Entropy Changes
4. The Dependence of Vapor Pressure on Temperature
5. Thermodynamics - Laws of Disorder
6. Freezing Point Depression
7. Decomposition of Ammonium Carbamate
8. The Calorimetric Determination of the Heats of Mixing

Department Approval: Approved by Department Head

Date: December 1, 2014