



Physical Chemistry I (CHEM 4110/6110) Fall 2014 Semester



Instructor: Dr. Donald Hamelberg (E-mail: dhamelberg@gsu.edu)
Associate Professor of Chemistry
519 Science Annex

Graduate Teaching Assistant: Kate Stroeve (estroeva1@student.gsu.edu)

Office Hours: Wednesdays from 2:00 - 3:00 P.M. or by appointment

Lecture Time and Location: MWF from 11:00 - 11:50 A.M in 327 CLSO

Course Prerequisites: Chem 1212K; Math 2212; Phys 2211K, 2212K. It is important for you to have mastered the prerequisites. You can use Appendix B for a brief review of some mathematical relationships.

Text: "Thermodynamics, Statistical Thermodynamics and Kinetics" 3rd Ed. by Engel and Reid, Pearson 2013. ISBN 978-0-321-76618-2

e-Text: Prentice Hall offers a 360 day online / downloadable version of the textbooks:
<http://www.coursesmart.com/9780321766830>

Course Description: Physical Chemistry I is a 3 credit semester course that covers the principles of thermodynamics, transport and kinetics, and how they serve as the basis for interpreting and interrelating the properties of matter. Chapters 1-10, and 16-19 of the text will be covered in the first semester.

Quizzes, Exams, Grading: There will be **4 quizzes**. The lowest quiz score will be dropped and the quizzes will count for **75%** of your overall grade. **The ACS Exam must be completed and will count for 25% of the grade. Quizzes will not be given at any time other than the scheduled lecture period. Should you miss a quiz, you may use it as your drop grade. Therefore, you are allowed to miss one quiz.** The plus/minus grading system will be used (A+: 100; A: 90- <100; A-: 87- <90; B+: 83- <87; B: 80- <83; B-: 77- <80; C+: 73- <77; C: 70- <73; C-: 67- <70; D: 60- <67; F: < 60).

Help Sessions: Special Course: CHEM 4111; Friday from 1:00 - 2:40 p.m. in Aderhold Learning Center 203 starting **September 5, 2014**. **All undergraduate students are encouraged to register for this course. Graduate students should not register for this course but are encouraged to sit in on the course and submit homework.**

Homework: Graded in Chem 4111 - Homework problems are designed to help you improve and test your knowledge of each of the topics covered in the course. Periodically, homework problems will be placed directly on the tests and many test questions will be very similar to homework problems.

Last day to withdraw: Tuesday, October 14, 2014

The University requires that faculty members must, on a date set by the Provost (or his designee) after the mid-point of the course,

1. give a WF to all those students who are on their rolls but no longer taking the class, and
2. report the last day the student attended or turned in an assignment.

Holidays: Labor Day: September 1, 2014; Thanksgiving: November 24-28, 2014

Final Exam will be on Wednesday, December 10, 2014 starting at 10:45 A.M. in CLSO 327



Tentative Course Schedule

Dates	Chapter	Subject
8/25, 27	1	Ideal and van der Waals Gases
8/29, 9/3, 5	2	Work, heat, First law of thermodynamics
9/8, 10, 12, 15	3, 4	Energy, Enthalpy, Thermochemistry
9/17	1 – 4	Quiz #1
9/19, 22, 24	5	Entropy - Second and Third Laws
9/26, 29, 10/1, 3, 6, 8	6	Chemical Equilibrium
10/10	1 – 6	Quiz #2
10/13	7	Real Gases
10/15, 17, 20	8	Phase Diagrams
10/22, 24, 27, 29, 31	9, 10	Solutions, Electrolytes
11/3	1 - 10	Quiz #3
11/5, 7, 10	16, 17	Kinetic Theory, Transport
11/12, 14, 17	18	Introduction to Kinetics
11/19, 21, 12/1, 3	18, 19	Kinetic Mechanisms, Enzyme Catalysis
12/5	16 - 19	Quiz #4
12/8	1 – 10	Review
12/10, 10:45 am	1 – 10	Final Exam: ACS Exam