Chemistry 341
Syllabus
Department of Chemistry and Biochemistry
Term I 2004-2005

Instructor: Dr. Jonathan Stevens
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Office Hours: MW 1-3 p.m.

Other hours to me with me are available by appointment. Additionally, feel free to drop by the office any time. If I am there, I will do what I can to help you.

Objective: The course will familiarize the student with the basic principles of chemical thermodynamics, and some of its applications.

Prerequisites: organic chem, physics, MTH 142 or equivalent

Note that a working knowledge of calculus is essential for success in this course. Differentiation and integration of polynomials as well as logarithmic and exponential functions is common in thermodynamics, and I will assume all students know how to do this. More abstract mathematical topics, such as the calculus of multivariable functions and the relation between exact differentials and partial derivatives, will be reviewed in the course.

Text: Physical Chemistry, Seventh Edition. P. Atkins and J. dePaula, W.H. Freeman and Company, New York, 2002.

Other things you need for this course: You will need and electronic calculator capable of performing exponential, square root, and logarithmic (log and ln) functions.

The student solutions manual is a good study aid and may prove helpful in working homework problems.

Class Meeting times:
Lecture: T-Th 9:55-11:10 a.m.
All class meetings will be in Chemistry 213 unless announced otherwise.

Tentative Lecture and Exam Schedule:

Date	Text Chapter and Topic
Sept 7-9	Chapter 1-Properties of Gases
Sept 14-16	Chapter 1 –2 Gases continue, First law, concepts

Sept 21-28	Chapter 2—3 First law, concepts and machinery
Sept 30	Exam I
Oct. 5-7	Chapter 4-Second Law concepts
Oct 12-14	Chapter 4 –5 Second Law-concepts and machinery
Oct 19-21	Second law continues; Chapter 6-Physical Transformations of pure substances
Oct 26	Chapter 6; Chapter 7-properties of mixtures
Oct 28	Exam II
Nov 2-4	Chapter 7 continues
Nov 9-11	Chapter 7 continues, Chapter 8
Nov 11-16	Chapter 8-phase diagrams
Nov 18	Chapter 9 -equilibria
Nov 23	Exam III
Nov 25	Thanksgiving
Nov 30-Dec 9	Chapters 9,10
Dec 16	Final Exam 8:00-9:50 a.m.

Important Dates:
Last day to withdraw without a "W": Oct. 1
Mid-term Grades due: Oct. 26
Last day to withdraw (with a "W"): Nov. 22
The final exam is cumulative and is held on Thursday Dec. 16 from 8:00-9:50 a.m.

Grading:

3 Exams,100 points each
Final exam: 150 points

Exams will focus on solving problems, with partial credit given for partial success. Questions are of the "show your work" variety.

Homework:
Homework comes in two varieties, the graded and ungraded. Ungraded homework assignments will not be collected, though answer keys will be placed in the library and the problems may be discussed in class.

Graded homework problems may be discussed in class, though no complete answers will be given. Each student is responsible for working the problems, and for showing his/her work. The steps and reasoning in each problem must be explained thoroughly (use a few words, not just equations.). Three graded homework assignments will be given, worth 30 points each. Typically a week or more will be provided to work on the assignment. Students are permitted to work in groups, ask advice from professors,

or seek the help of the text, or student solutions manual. However, each student hands in his/her assignment individually.
Problems may be assigned from the textbook or I may make them up myself. **Please note** that providing answers in the same manner as presented in the manual will not necessarily allow full credit. The solutions manual often does not thoroughly explain the working of the problems the way that homework assignments require. (In addition, the answers are **sometimes** incorrect.)

Total points possible: 540
No grades will be dropped.
Grading Scale:

% of points earned	Grade
> 92.5 %	A
90.0 –92.4	A-
87.5-89.9	B+
82.5-87.4	B
80.0-82.4	B-
77.5-79.9	C+
72.5-77.4	C
70.0-72.4	C-
67.5-69.9	D+
60-67.4	D
<60.0	F

Regrading: If a student is dissatisfied with the grading of any quiz, test, or homework question, the question can be regraded. This must be brought to my attention within 1 week after the exam or quiz has been returned.

Make-up Policy: Exams may be made up in the event of death or wasting illness. Documentation is required.

Academic Integrity: Cheating is not permitted and will not be tolerated. Anyone found cheating on any quiz, test or assignment will be given a zero for that assignment and will be referred to the Dean's office for additional penalties. (Refer to the University Catalog and E&S Student Handbook for further explanation of academic integrity.)

Answer Keys for all tests, quizzes, and homeworks will be kept on file at the Circulation Desk of the library.

<u>How to survive Chemistry 341:</u>

1. Attend class regularly, and ask many questions in class. Class participation will greatly enhance your learning of the lecture material.

2. Do ALL the homework problems, and ask questions about them in class. **If asked**, I will work problems in lecture, but not all of them. In particular I will present some but not all the work necessary to do graded problems. You should attempt all problems, and ask questions about those you find especially difficult.

3. Study daily. Trying to cram P-chem into your head the night before the exam is a painful, frustrating, and all too often futile experience.

4. Study in groups. Find several other students in the class and study consistently with them. You may find it helpful to work problems in teams.

5. See your professor (that's me). Make use of office hours or make appointments if the office hours schedule doesn’t work with yours.