



Chemistry 3522 (Spring, 2008)

Farooq A. Khan

Welcome to Chemical Thermodynamics, CHEM 3522!

Considerations of energy, entropy, equilibria and rates are central in chemical reactions. In this course we will revisit these familiar subjects of thermodynamics and chemical kinetics in greater depth.

Learning Outcomes

The student who successfully completes this course is expected to develop the ability to:

- Apply thermodynamic principles in ideal as well as real systems;
- Use mathematical concepts such as partial derivatives, exact and inexact functions and to apply them to chemical systems;
- Interpret kinetic data in terms of rate equations and mechanisms; and
- Relate principles of thermodynamics and kinetics to chemical and selected biological problems.

General Information

Instructor	Farooq A. Khan, Phone 839 - 6027. Office: 2-117 TLC; email: fkhan@westga.edu.
Class time	M, W, F 11:00 - 11:50 am.
Textbook	<i>Physical Chemistry</i> , 8 th edition, Atkins and dePaula.
Office Hours	Mondays, Wednesdays 12:45 - 1:45 pm Tuesdays 10 am – 12:00 noon; 1:00 – 4:00 pm Additional office hours can be arranged by appointment.
Attendance	Required. A student may be awarded a failing grade in the course if more than 30% of homework assignments are missed.

A Word about Expectations

It is quite likely that you have heard anecdotal accounts of how tough physical chemistry *really* is, and how instructors derive pleasure from deriving equations, one after another. *I will not dispute that!* At the same time, I must point out that in nearly two decades of teaching and research I have found it to be a beautiful subject in which one puts together seemingly diverse concepts from chemistry, physics and mathematics while examining natural phenomena.

Four words summarize a tried and tested strategy for learning the most in this course. *Take your homework seriously.* Homework assignments will be given regularly during the semester. Approximately 60 % of questions on the examinations will closely resemble these assignments. Homework assignments will be due typically on Wednesdays, which will be designated for in-class interactive problem solving. These problem-solving sessions will be conducted by your instructor along with Professor Lucille B. Garmon, an invited participating instructor.

Let us make a deal. I will attempt to anticipate any difficulties you may have with the underlying mathematics. Y'all do your homework and in-class problem solving seriously.

Quizzes, Graded Homework and Examinations

In-class examinations will be given on Fridays. The first examination will be given on **Friday, February 1**. **The dates for the remaining in-class examinations (a total of four) will be announced later. The final examination will be given on Friday, May 2 (11:00 am – 1:00 pm).** It consists of multiple-choice questions, and is prepared by the American Chemical Society.

Homework will be assigned approximately once a week, collected in class on specified dates, and graded. Homework turned in late will not be graded.

No make up examinations will be given. In case of an illness or a dire emergency, a student may be excused from one in-class examination, provided the instructor is contacted prior to the examination. If excused, the score for this examination will be the average of all in-class examinations. **At the discretion of the instructor, an addendum to an in-class examination may be given in the form of an announced in-class quiz or a take-home assignment, which must be completed by a specified date.**

Grades

Your grade will be calculated based on the following components:

In-class examinations (4 @ 100 points each) 400 points

ACS Final 150 points

The final may be curved at the discretion of the instructor.

Homework and In-class Problem solving 100 points

TOTAL 650 points

Letter grades

Score	Grade
85% - 100%	A
75% - 84%	B
60% - 74%	C
50% - 59%	D
0% - 49%	F

Policy on cheating

Occurrences of cheating are rare. However, cheating by one individual raises questions about fairness for the rest of the class, and indeed, endangers the honor code that governs our examination system. It is after considerable thought and agonizing that I have arrived at the following formula. If an individual cheats on a quiz or examination for the first time, he/she will obtain a score of zero for that particular quiz or examination. If an individual is caught cheating a second time during the semester, he/she will receive a grade of F for the entire course.