



SINCE 1823
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UNIVERSITY

Course Syllabus

Basic Information

Course: CHE317 – Physical Chemistry I

Credit: 3 semester hours

Prereq: CHE211, MAT212, and PHY232

Dept: Chemistry

Instructor: Dr. Michael R. Salazar

Office: WH 323

Phone: 661-5260

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Office hours: _____ Posted on Door _____

Note: This syllabus may be revised at the instructors discretion at any time.

Scope of the Course

Chemistry is an empirical science, meaning that it is experimentally based. In the study of physical chemistry, we attempt to understand the results of these experimental observables using mathematics and physics. We cannot possibly seek to understand every possible experimental result, but we can see the broad results upheld by many experimental observables and seek to formulate a fundamental physical understanding of these results.

Course Objectives

The general objectives are:

1. To become familiar with the states of matter and how they are characterized
2. To have a working knowledge of the mathematics needed to characterize the states of matter
3. To be able to describe changes in the states of matter using thermodynamic quantities
4. To be able to describe the equilibrium condition between different phases of matter or different chemical species

Textbooks and Materials

Required Textbook: *Physical Chemistry* by Robert Mortimer

Calculator: An advanced function calculator such as the TI-82 or above is recommended; Some assignments may require use of *Mathematica*, which is available in the Computer Lab.

Assigned Reading

Students are expected to read the textbook over the chapters and sections covered in class.

Solved Problem Notebook

You will spend many hours solving assigned problems in this course. Notice below that a substantial portion of your grade is determined by your performance in this area. You will be given the assigned homework for a chapter before the chapter is discussed in lecture. The homework for each chapter is due the class period after the content of the chapter is finished being lectured over. **Thus, do not expect to be able to begin and complete the chapter homework problems after the chapter is lectured over.** Do homework each day, keeping up with lecture and review your problems after the chapter is finished being lectured over.

Method of Instruction

The course is taught by the lecture/demonstration method. The instructor relies heavily on student participation and

this course requires that students thoroughly review class notes after each class meeting and read the portions of the textbook pertinent to the topics that will be discussed before class. Excused missed tests will be made up at the first class meeting upon returning to school.

Method of Evaluation

Activities are weighted as follows:

<u>Activity</u>	<u>Percent</u>
3 Major Tests @ 17% each	51.0
Quizzes	8.0
Problem Set performance	21.0
Final Examination	<u>20.0</u>
Total	100.0

Course grade will be assigned
utilizing this scale

<u>Total percentage</u>	<u>Course Grade</u>
At least 90.0	A
80.0	B
70.0	C
60.0	D
less than 60	F

Credit for late problem sets will be reduced by 10% per school day. After 4 school days have expired after the assignment was due, a zero for the assignment is given. No extra credit work will be given. If you have time for extra work, spend it on the course content.

Attendance Policy

There is no penalty for missing a lecture. It is suggested that you consult a fellow class member for class notes and topics for the missed period. You must take all exams when scheduled. If you know you are going to be absent from a scheduled test contact your instructor beforehand. You may be able to take the test earlier. Bring documentation for any absence from a test not prearranged.

Topics Covered

- Properties of Gases
- The First Law of Thermodynamics
- Thermochemistry
- The Second Law of Thermodynamics
- Chemical Equilibrium
- Phase Equilibrium
- Thermodynamics of Nonelectrolytic Solutions