

Chem 4110, 4110H/6110

Spring Semester, 2016

3 Semester Credits

Professors: Dr. Stuart Allison, 382 Petite Science Center, (e-mail: sallison@gsu.edu)

Office Hours: Dr. Allison: Tu from 4:00-5:00 p.m. or by appointment (also see below for optional "problem session" every Thursday preceding class).

Lecture Time and Location: TuTh from 5:30-6:45 p.m. in 404 Aderhold Learning Center

Optional Problem Session and Location: Th from 4:00-5:00 p.m. in 303 Petite Science Center

Course Prerequisites: Chem 1212K; Math 2212; Phys 2211K and 2212K. It is of critical importance for you to have mastered the prerequisites. You can use Appendix B for a brief review of some mathematical relationships. A short "math proficiency quiz", required of all undergraduate students (Chem 4110 and 4110 Honors), will be given at the end of the lecture on January 14 (second lecture) and it will count for 5 % of your total grade (Chem 4110) or 0% (Chem 4110 Honors). Students enrolled in Chem 6110 are not required to take this quiz, but can take it if they wish although it will not count toward their final grade.

Text: *Thermodynamics, Statistical Thermodynamics and Kinetics*, 3rd Edition, by Engel and Reid, Pearson, 2013.

Course Description: "Physical Chemistry I", Chem 4110/6110, is a 3 credit hour semester course that covers the principles of thermodynamics, transport, and kinetics. Chapters 1-11 and 18-19 of the text will be covered in the first semester.

Quizzes, Exams, Grading: There will be **5 quizzes** and an ACS standardized final exam. The lowest quiz score will be dropped and the quizzes will count for 60 % of your overall grade. **The final exam must be taken and will count for 35 (Chem 4110) or 40 % (Chem 4110 Honors or 6110) of your overall grade.** A comprehensive "Makeup" quiz will be given at the end of the semester for anyone who has missed one of the regularly scheduled quizzes. **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 or take the makeup quiz.**

The Makeup quiz will be on Thursday, April 21 at 5:30 p.m. and will count as much as a regularly scheduled quiz.

Homework: It is essential for you to work problems in order to understand the material covered in the lectures. 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. In addition, many test questions will be similar to homework problems. Students are strongly encouraged to take advantage of office hours and the optional Thursday problem sessions for assistance in working the problems.

Syllabus, Class Notes, and Sample Quizzes: The syllabus, class notes, and sample quizzes can also be accessed online through the GSU Department of Chemistry website. Under the Undergraduate heading, select "Course Syllabi" and the select "Spring 2016". A pdf file for the course syllabus (Chem 4110/6110) should be accessible. At the bottom of the page, you should also be able to access the Class Notes, which closely covers material that will be gone over in lecture. At the end of this pdf file you will also find sample quizzes.

Last day to withdraw: Thursday, March 1, 2016

The University requires that faculty members must, on a date after the midpoint of the course to be set by the Provost (or his designee):

- 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:

*Martin Luther King, Monday, January 18

Spring Break, March 14-20

*(does not affect this course)

Tentative Schedule

Date	Chapter	Subject
1/12	1	Ideal and Real Gases
1/14, 19	2	First Law of Thermodynamics
1/21, 26	3	Energy, Enthalpy
1/28	1, 2, 3	Quiz 1
2/2	4	Thermochemistry
2/4, 9	5	Entropy, Second Law
2/11, 16	6	Chemical Equilibrium
2/18	4, 5, 6	Quiz 2
2/23, 25	6, 7	Chemical Equilibrium, Real Gases
2/25, 3/1, 3, 8	8, 9	Phase Diagrams, Solutions
3/10	6-9	Quiz 3
3/15, 17	--	Spring Break
3/22	9	Activity, Colligative Properties
3/24	10	Electrolyte Solutions
3/29	11	Electrochemistry
3/31	9-11	Quiz 4
4/5, 7	18	Introduction to Kinetics
4/12	19	Kinetics Mechanisms, Enzyme Catalysis
4/14	18-19	Quiz 5
4/19	--	Review
4/21	--	Makeup Quiz
4/26	--	(ACS Final Exam (4:15-5:45 PM))