

GENERAL CHEMISTRY/QUALITATIVE ANALYSIS CHEM 112

Lecture Schedule/Syllabus

Spring 2017

Objectives: Students will develop an understanding of kinetic, equilibrium, and thermodynamic analysis of chemical processes. “*Understanding*” here means that you can use the knowledge you have acquired to solve problems, not just recount facts. Students will demonstrate mastery of the material by solving written and laboratory problems on these topics.

Passing Chemistry 111 is a prerequisite for CHEM 112. This course is designed for science majors and pre-professional health/science related majors.

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Office hours: Sm 406, M 10-11 & 12-1:30, Tu 9:40-10:40, & Th 9:10-10:40 (or by appointment)
When possible, avoid Friday, all day (research/service)!

Required materials:

Text book: *General Chemistry, Atoms First, 2nd ed.*, McMurray, J. and Fay, R. Prentice Hall, 2014.
(ISBN-13: 978-0-321-80926-1)

Laboratory packet: *Chemistry 112 Lab Manual* available at the bookstore. Z87 safety goggles (\$???), and appropriate clothing for lab, **including a lab coat**. Casio fx-260 solar calculator (~\$10).

Internet resources: You will need access (if you didn't buy it in 111) to the MasteringChemistry web site:
<http://www.pearsonmylabandmastering.com/northamerica/masteringchemistry/>

Course ID: MCKRUEGER02186 Most of the homework & some quizzes will use this site. The purchase can be made at the site or the Upstate Book Store.

Class Organization: Students will read the appropriate sections of the text book **prior to lecture**. The purpose of the lecture is to clarify and review the material described in the text. The main focus of recitation is to work on problems from the text, but we will sometimes do lecture equivalent and/or lab support activities in recitation. The laboratory exercises are used to reinforce the principles developed in lecture, and to acquaint students with some of the techniques used in a chemistry lab.

Recommendations for success in CHEM 112

1. Read the assigned material **before** you come to lecture and lab.
2. **Take notes** & ask questions during lecture, recitation, and lab when needed. (*passive = not good*)
3. Do the recommended questions at the end of the chapters in McMurray & Fay.
4. See me (tutors?) for help with the questions you did not understand.
5. Go over the study guide before the exam. Allow enough time to develop understanding in any weak areas identified from working on the study guide.
6. See me (& SI & rec instructors & tutors) for help on study guide items you did not understand.
7. Carefully review your graded exam when it is returned to you. If you still do not know how to answer an exam question at this stage, get help.

Essentially all students need to spend a significant amount of time outside of lecture to do well!
Chemistry is a cumulative subject.

Lecture/Reading Schedule*

week#	date	lecture topic	read (before class!) Chapter:
1	01/10 & 12	Introduction, Solutions, & Kinetics	11 (sect. 1, 3, & Fig 11.1 only) & 12
2	01/16	Dr. Martin Luther King Remembrance Day	USC Upstate is closed.
	01/17 & 19	Kinetics	12
3	01/24	Kinetics	
	& 26	& Equilibrium	13
4	01/31 & 2/2	Equilibrium	
5	02/7 & 9	Acid-Base Chemistry	14
6	02/14	Acid-Base Chemistry &	
	& 16	Applications of Aqueous Equilibria	15
7	02/21	Exam 1 , covering Chapters (part of) 11 & 12-14 & related lecture material	
	23	Applications of Aqueous Equilibria	
8	02/28	Applications of Aqueous Equilibria	
	& 03/2	Thermodynamics & Back to Solutions	16 & 11 (sect 2 & 4)
9	03/7 & 9	Spring Break (03/6-13), no classes	
10	03/14 & 16	Thermodynamics (and back to Chapter 11)	11 (sections 11.2, 4, & ??)
		<i>Friday, 03/17, is the last day to withdraw without penalty or change to audit</i>	
11	03/21 &	Thermodynamics	
	03/23	Exam 2 , covering Chapters 15-16, part of 11, & related lecture material	
12	03/28 & 30	Electrochemistry	17
13	04/4	Electrochemistry	
	& 6	Hydrogen, Oxygen, and Water (special topics?)	18
14	04/11	Hydrogen, Oxygen, and Water (special topics?)	18
	& 13	Exam 3 , covering Chapters 17-18 & related lecture material	
15	04/18 & 20	Organic Chemistry	23
16	04/24	Organic Chemistry last day of classes	23
	04/25	sect 02 Cumulative Final Exam Tuesday 11:30-2:30	
	04/27	sect 01 Cumulative Final Exam Thursday 11:30-2:30	

**Disclaimer: Unforeseen circumstances may necessitate changing the course schedule.*

Lecture attendance policy: For the 11 lectures starting with 01/17/16 lecture attendance is required with these clarifications/conditions: You are allowed to miss 2 lectures during this period with no loss of credit. For each lecture beyond two that you miss, **1 point (that is, 1% of your total grade) will be subtracted from your overall course grade**. Starting with the 02/23/16 lecture, the only time you will be required to attend lecture (relative to points and your grade) is on the days that exams are given. You are responsible for finding what occurred on days that you missed. **Comment (in lecture) about my inclination to aid you on material covered during a lecture you missed?????**

Lab and recitation policy issues are described in the lab syllabus.

Explanation of Grade Determination and Exam Structure

Grade determination. You will receive numerical grades for work you do during the semester. The sum of these numerical grades will be used to assign the letter grade that goes on your transcript.

<u>ACTIVITY</u>	<u>POINT VALUE</u>
Homework (& quizzes)	14 <i>Mostly MasteringChem</i>
Exam I	14
Exam II	14
Exam III	8
Final Exam	25
<u>Laboratory</u>	<u>25</u>
Total	100

Usual curve: A \geq 88, B+ \geq 85, B \geq 78, C+ \geq 75, C \geq 68, D+ \geq 65, D \geq 58

Exam, homework, etc. details.

1. *Homework.* Concept/problem solving homework will be assigned for key topics during the semester. Each assignment will have the due date associated with it. Generally, assignments given through the MasteringChemistry web site **cannot be submitted for credit after the due date.** We will be using the Pearson MasteringChemistry homework testing system for most of your homework assignments. Details to follow.

2. *Exams I, II, & III.* The primary objective of these exams will be to test your understanding of the concepts and problems in the indicated chapters. Generally, the emphasis will be on problem solving, *not memorization.* However, for the more descriptive chapters, more memorization is appropriate. If you have missed an exam for a legitimate reason, you will be permitted to take a ***cumulative makeup exam*** outside of lecture time during the week of April 18th. A legitimate reason for missing an exam would be physical illness (not just a runny nose) or severe emotional trauma, such as the death of a close relative. Documentation for your absence may be required. As soon as you suspect that you may not be able to take an exam, phone or e-mail to make sure that your absence from the exam is for an appropriate reason.

You may not leave the room for any reason during an Exam I, II, or III short of massive gastrointestinal disorder. (Exceptions related disability issues, ADA.)

You cannot use a calculator other than the Casio fx-260 solar calculator during exams.

3. *Final exam.* The final exam will be cumulative. Like the midterms, it will generally emphasize problem solving and understanding, not memorization. See above regarding the more descriptive chapters.

4. *Lab.* See lab syllabus from your lab instructor.

5. *Missed work.* Zero credit will be assigned when work is missed due to an unexcused absence. Credit for work missed due to an excused absence will be determined on a case-by-case basis.

Civility/Behavior guidelines: *civility-* politeness, consideration, courtesy.

Items related to lecture and (usually) recitation: Also see the USC Upstate 2015-2016 Catalog.

0. This class runs under 1980's guidelines re. cell phone use: once class starts, your cell phone is gone. No texting, even if your hands are out of sight. *Comment on the social contract???*

1. Get to class on time. If you are late, try to sit near the door. Do not walk across the front of the room if seats are available in the back or sides.

2. When class starts, stop any conversation and turn your full attention to class.

3. I very seldom end class early or run over the allotted class time. Do not start shuffling papers, loading your book bag, *etc.*, before class ends. The noise disrupts class.

4. If you know that you will need to leave class early for any reason (e.g. doctor's appointment, childcare) sit near the door to minimize disruption when you leave.

5. Turn off all electronic devices (***cell phones*** [Help!], beepers, watches, CD or tape players, *etc.*) that generate sound when you come into class. If you want to use a laptop or any other web browsing device in class, you must see me first. Why? I have observed students (in a number of different classes at Upstate) using laptops for non-course related activities, and by this, distracting others. *Cell phone, pager, etc. use is prohibited.* Do not even have them out on your desk. See #0, above.

6. Do not sleep in class. Even if you don't snore, this is rude. Sleeping, reading a newspaper or novel, or any activity other than being fully involved in the class is inappropriate.

7. Dress code: On exam days you may not wear sunglasses or a hat (an example would be a baseball cap) that has a bill or brim in the front. (Exceptions are allowed for medical/religious reasons.) There are also safety-related dress requirements for lab (see safety video and lab packet).

Disability Issues

If you have an academically relevant disability, please contact Disability Services (503-5199) to arrange a confidential appointment. Do this as early as possible because retroactive arrangements are not provided. Letters of accommodation must come from the Office of Disability Services. It is the student's responsibility to provide these letters to the instructor in a timely manner

Test Anxiety

Contact Counseling Services (503-5195) if you think you may have problems with test anxiety.

Academic Honor Code Issues

The USC Upstate *Code of Academic Integrity* can be found in the *USC Upstate Student Handbook*. Please refer to the *Handbook* if you are unfamiliar with the Code. Also see the USC Upstate 2015-2016 Catalog.

While the faculty anticipate that you will apply the Honor Code to all areas of the course, we have noticed in previous years that some laboratory reports do not appear to have been prepared independently. To clarify: 1) If you performed an experiment as part of a group, your data should be the same as other students in the group. 2) However, if a large amount of other portions of your lab report is identical to that of another student, the simplest explanation for this is that copying was involved in preparation of at least one of the reports. 3) Even if a question in the lab report asks for an answer that could be given by quoting the explanatory material given with the lab (or from the textbook), do not copy the answer verbatim. Even using quotes and a citation is not appropriate. Instead, restate the information in the answer using your own words.

Do not copy homework assignments or lab reports from other students. Do not let other students borrow your work. Their copying of your work could compromise your academic integrity.

If you have uncertainty at any time about whether a piece of work or particular activity might be a violation of the Student Honor Code, ask! For copying associated with lab reports, your lab instructor will determine the appropriate course of action. In past semesters students have received an F for the entire course for violations associated with lab work.

***USC Upstate has adopted the XF grade.** This goes on the official transcript and indicates that the student has failed the course as a result of an honor code violation. Please consider the effect this would have on a potential employer as you consider your approach to the course this semester. I have had to go through the necessary procedures for the Dean to assign the XF grade in the past. I hope that does not occur this semester.*