

# The Chemistry of Living Things      CHM 109

## Lecture Schedule/Syllabus\* Fall 2009

**Objectives:** Students will develop an understanding of the chemical processes carried out by living things. Students will demonstrate mastery of the material by solving written and lab problems on these topics and by being able to describe the major chemical jobs that living things perform. Emphasis is on kinetic and equilibrium approaches to solve problems.

This course is designed for non-science majors.

**Instructor:** Dr. Judy Krueger

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**Phone:** (864) 503-5712

**Office hours:** Sm 414, T and W 2:30- 4, W and F 10-11

**Class Meetings:** MWF 1-1:50

**Materials** Optional: Chemistry by Karen Timberlake, 10<sup>th</sup> ed. 2009

Required for laboratory: *Chemistry 109 Lab Manual*, Z87 safety goggles, and appropriate clothing for lab.

**Class Organization:** The purpose of the lecture is to present topics in sufficient detail for students to be able to solve basic chemistry and biochemistry problems. Recitation will be used both to present new material in the form of written, modeling, or problem based exercises and to **provide practice on problems** introduced in lecture. A minor aspect of recitation will involve review of previous laboratory work and brief introductions to future laboratory experiments. 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 CHM 109

1. Read the assigned material ***before*** you come to lab/recitation/lecture.
2. Ask questions during lecture, recitation, and lab when you do not understand.
3. Do practice problems on web page and the assigned homework questions. **SI**
4. Get help with the questions you did not understand. **SI program!!!**
5. Go over the study guide 5-7 days before the exam. Allow enough time to develop ***understanding*** in weak areas identified from homework and the study guide.
6. Get help on study guide questions you did not understand. **SI program!!!**
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, see me or others for help.

**CHM 109 is likely to be a relatively labor intensive and to be different than other science courses you may have taken! How will it be different?**

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## Lecture Schedule\*

Week	Date	Topic
1	8/21	Introduction; Outline
2	8/24-8/28	Science, Chemistry, Measurements, Math,
3	8/31-9/4	Atomic Structure, Stability
4	9/9-9/11	<i>Monday is Labor Day, No class</i> Compounds, Bonding (Orbitals),
5	9/14-9/18	Weak Interactions & States of Matter, Solutions, <b>Exam I</b>
6	9/21-9/25	Chemical Reactions
7	9/28-10/2	Acid Base Chemistry, Start Kinetics
8	10/5-10/7	Kinetics & Equilibrium <i>Fall Break, No class on Th and F</i>
9	10/12-10/16	Equilibrium and Quantitative Aspects of Acid-Base Chemistry
10	10/19-10/23	<b>Exam II</b> , Introduction to Biochemistry & Water
11	10/26-10/30	Amino Acids and Proteins <i>Thursday, 10/29, last day to drop a course without academic penalty</i>
12	11/2-11/6	Amino Acids and Proteins, Enzymes
13	11/9-11/13	Enzymes & Carbohydrates
14	11/16-11/20	Lipids & Membranes, <b>Exam III</b>
15	11/23	Nucleic Acids <i>Thanksgiving, No classes W-F</i>
16	11/30-12/4	Nucleic Acids, DNA Replication, Repair, Protein Synthesis, Genome Studies. 12/4 is the last day of class.
17	12/11	<b>Cumulative Final Exam</b> , Friday 11:30-2:30

\***Disclaimer:** The instructor reserves the right to adjust the syllabus & schedule as necessary.

### Attendance:

Laboratory and recitation: Generally, you are expected to attend all laboratory and recitation meetings. The instructor for each lab/recitation section determines attendance guidelines. See the lab/recitation syllabus for your section for details. You are responsible for making up work for classes that you miss. See also the USC Upstate 2009-2010 Catalog, p. 51-52.

Lecture: No attendance requirement except for exams. ***This does not mean I am inviting you to miss class!*** If you miss a lecture quiz you may not make that up for any reason.

## Explanation of Grade Determination and Exam Structure

*Grade determination.* You will receive numerical grades for all of the 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	10
Exam I	11
Exam II	11
Exam III	12
Final Exam	27
Quizzes	4
<u>Laboratory</u>	<u>25</u>
Total	100

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

### ***Homework, Exam, etc. details.***

1. *Homework.* Each homework assignment will have a 1 to 2 point value. These assignments will be designed either to test your understanding (problem solving!) of a subject or whether you can identify terms, figures, *etc.* that have been covered in lecture. The policy for grade reduction on late homework is: **20% subtraction of credit** for work that is less than 6 days late. No assignments will be accepted after graded work is returned to the class or that are more than 6 days late, whichever comes first. Assignments must be submitted as hardcopy. Do not email homework. ***Careful re. copying!!! XF grade.***

2. *Exams I, II and III.* The main 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 areas (e.g., metabolic processes), more memorization is required. 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 11/30. 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, contact me by phone or e-mail to make sure that your absence from the exam is for an appropriate reason. **There is no option to drop any of the midterm exam grades.**

3. *Final exam.* The final exam will be cumulative, but will have a slightly heavier emphasis on the last material not covered by a midterm exam.

4. *Quizzes.* These will be very brief, unannounced, and designed to determine whether you have read assigned material before coming to class. Quizzes cannot be made up if you miss them. The lowest quiz score will be dropped.

5. *Lab/recitation.* See lab/rec syllabus. Turning in a lab report for a lab you did not attend is considered a violation of the student honor code.

6. *Missed work.* A zero is assigned when work is missed due to an unexcused absence.

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

Items related to lecture and (usually) recitation: Also see the USC Upstate 2009-2010 Catalog, pp. 45-46.

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.
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 you must leave class early (e.g. doctor's appointment) sit near the door to reduce disruption.
5. Turn off all electronic devices (cell phones, beepers, watches, CD or tape players, *etc.*) that generate sound when you come into class. If you want to use a laptop in class, see me first. *Cell phone, pager, etc. use is prohibited during exams.* Do not even have them out on your desk.
6. Do not come to class if you are not going to be involved.
7. Dress code: On exam days you may not wear sunglasses or a hat that has a bill or brim in the front (eg. A baseball cap) (I will allow exceptions for medical/religious reasons.)

**Remember: The reason the civility requirements is that you are not the only student in class. The other students have paid a lot of money to be here. You are hurting their education and perhaps eventually their ability to make a living if you are disrupting class.**

***Regarding getting along with your instructors in CHM 109:***

1. Please communicate, particularly if you don't understand or if something is bothering you. Outside of class, email will often get a more rapid reply from me than will phone calls.
2. *You are paying for part of our time, so use it, but use it efficiently!!* Be organized when you come to see your instructor. The more efficiently you use their time, the more they can help you.

## **Disability Issues**

In keeping with University policy, any student with a disability who requests academic accommodations should contact Disability Services at 503-5199 to arrange a confidential appointment with the Disability Services Coordinator. Students are encouraged to seek an appointment as early in the semester as possible, as accommodations are not provided retroactively. Letters of accommodation must be signed and printed on letterhead from the Disability Services office. It is the student's responsibility to provide these letters to professors in a timely manner so that accommodations may be put in place.

## **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 2009-2010 Catalog, p. 45.

***Do not copy homework assignments or lab reports from other students and do not let other students borrow your work, as 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, students may receive only a warning for the first offence. Depending on the nature of the first offense, credit for that work may be reduced to zero. A second offence will be taken to Dean of Students and then Honor Court. In past semesters students have received an F for the entire course for a second violation associated with lab work.

***USC Upstate has recently added 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.***

## **Calculators and Proficiency in calculator use**

We will supply the calculators that you will use for the two midterm exams and the final exam. You will have opportunities in recitation to practice using these calculators prior to the exams.