
Chem 460A Syllabus—Fall 2009

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Office hours: Mon 10-11am, Tue 11am-12pm,
Fri 11am-12pm, or contact me to set up a meeting.

Course Overview:

We will begin the term by investigating the thermodynamics, acid-base chemistry & intermolecular forces that govern the structures and behaviors of proteins, nucleic acids, sugars & lipids. During this time we will talk about three of the main structure determination tools currently used today: NMR, x-ray crystallography and mass spectrometry. We will then turn our attention to enzymatic catalysis, and then we will see how kinetic analyses in the laboratory provide insights into enzyme function.

Required Materials

- Textbook—Voet, Voet & Pratt *Fundamentals of Biochemistry: Life at the Molecular Level*, 2nd edition (Wiley 2006)
- Lab Notebook—Buy from SAACS during the first week of classes
- Calculator—capable of scientific notation & logarithms

Web Resources

- Chem460 homepage: <http://www2.ups.edu/faculty/jgrinstead/460/CHEM460.html>
 - Blackboard: <http://blackboard.ups.edu> Password: photoreceptor
- Note: Please sign up for the course on Blackboard so I can post your scores there!*
- Student Companion Site for VV&P
 - NCBI: <http://www.ncbi.nlm.nih.gov/>
 - Protein Data Bank: <http://www.rcsb.org/pdb/>
 - Deep View Swiss PDB Viewer: <http://us.expasy.org/spdbv/>

Weekly Guides

Every Friday you will receive a “Weekly Guide” that details the lecture material that will be covered the following week, the reading assignments corresponding to that material, a list of suggested end-of-chapter problems, information about upcoming due dates, and a list of the specific learning objectives that I expect you to know. These guides will also be posted on Blackboard.

Evaluation:

Midterm Exams (30%): Scheduled for **September 30 (Wed), November 4 (Wed), and December 8 (Tues)**. In order to give you plenty of time to perform, these exams will be given in the evening between 5 and 8 pm. You will be given up to two hours to take the exam. If for some reason you cannot begin the exam by 6pm, you must make prior arrangements with me. On exam days, class will be cancelled. Any missed exam must be made up as soon as possible. If you have a diagnosed disability, please let me know so appropriate accommodations can be made.

Final Exam (20%): Your final is scheduled for **Friday, December 18, 8-10 am**. This exam will be comprehensive and you will be given up to one hour of extra time when you take this exam. **Please make your winter vacation plans with this in mind!** Airplane tickets are very expensive, so buy them soon. I cannot allow any student to take the exam at another time barring extreme circumstances, for which I must obtain written permission from the Academic Vice President.

Labs (30%): Seven experiments are planned for this term. Plan to work with a partner unless instructed otherwise. Before coming to lab, take time to prepare for the pre-lab discussion or possible pop-quiz. You are expected to keep a bound notebook (to be purchased during the first week of classes) in which you record a *readable* account of what you have done in the lab. I reserve the right to periodically evaluate your lab notebook for clarity and completeness. Instructions for labs will be posted by Thursday of each week. Reports will usually be due one week after your lab work is completed. Many of the reports are to be written as if submitted to a scientific journal. If there are too many typographical errors (such as silly mistakes on the first page) your report will be docked 5 points and returned, and you will have two days to resubmit it. If illness or another emergency prevents you from attending lab, be sure to contact me as soon as possible.

Homework Assignments & Quizzes (20%): Homework will periodically be assigned for a grade. Answers to homework will be handed out in class when assignments are handed back. There are six scheduled quizzes, which will be given on Mondays—your first quiz is Monday! Homework and quizzes are generally worth 10 pts each.

Late Work

If lateness is a problem, your assignments will be docked 10% for every day late, up to 5 days.

Grading

A	90-100%	Note that this is an approximate scale. I reserve the right to adjust it <i>downward</i> (giving you a better grade) if necessary.
B	75- 89%	
C	60- 74%	
D	50- 59%	
F	0- 49%	

Academic Honesty:

All work submitted during this course is expected to reflect your effort. You are encouraged to work with classmates on homework and lab reports. However, when the time comes to write up work for submission, it must be your work, written in your own words and reflecting your individual understanding of the material.