CHEM 112B
Organic Chemistry Lecture
Spring 2014

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Office phone (408) 924-4998
Hours: M 0915-1015 and 1400-1515
W 0915-1015
Or by prior appointment

Greensheet posted at Chemistry Department SJSU Website and:
http://www.chemistry.sjsu.edu/straus/112A-B%20WEBSITE/HOME.html

Prerequisite: Chem 112A with grade of C or better.

Required:
- McMurry, Organic Chemistry (8th ed. Special for Chem 112A and B at SJSU)
  Bundled with: Weeks, Pushing Electrons (3rd ed.)
- A set of molecular models.
- Student photo-ID card at all exams (see below).

Course Description: A continuation of Chem 112A. Several more classes of organic compounds will be studied in some detail. There will be an emphasis on thorough mechanistic understanding of reactions; this is not just a "memorization" course. Review of concepts from the first semester is strongly encouraged. We will ultimately apply our understanding of classes of organic compounds to develop an appreciation for more complex biological systems.

Organization: The sequence of topics in the text will be followed unless stated otherwise. Schedule handouts will be posted giving tentative dates for reading assignments and exams. Problem assignments will be given but will not be collected. A sampling of key problems will be assigned, however you are encouraged to work all of the problems in the text; some problems on the exams will be taken from the text. Because the course is built up in a cumulative manner, material from the first chapters will be important to understanding later chapters. It is therefore important not to fall behind. You should seek help with material you may be having trouble with as you go along rather than deferring it to right before an exam.

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Mid-Term Exams Schedule: *(tentative)*

Exam 1, Monday, February 24th  
Exam 2, Wednesday, April 2nd  
Exam 3, Wednesday, May 7th

Final Exam:  
Wednesday, May 21, 0715-0930

Learning Objectives:
Students successfully completing Chem 112B should be able to:

- Show mastery of the topics from Chem 112A (text chapters 1-11, 14-16).
- Demonstrate an understanding of and the ability to apply the topics covered in lecture and in chapters 17-27 of the text.
- Understand and predict the chemistry and relative reactivity of the following functional groups: alcohols, ethers, epoxides, ketones, aldehydes, carboxylic acids, amides, esters, anhydrides, acid chlorides, nitriles, and amines.
- Understand and predict the susceptibility of different functional groups to the same reaction conditions, and the use of protecting groups to mask undesired reactivity.
- Use curved arrow mechanisms to explain the reactions discussed in lecture and the assigned text reading.
- Apply principles of organic reactivity and use curved arrow mechanisms to explain the outcome of reactions that have not been previously encountered.
- Be able to use the concepts of electronegativity and resonance to explain and predict reactivity differences.
- Be able to design a concise, multi-step synthesis of a polyfunctional molecule.
- Give a reaction or sequence of reactions to interconvert two functional groups.
- This class contributes toward **program learning objective 2**, listed on the department website:  
  [http://www.sjsu.edu/chemistry/Academic_Programs/undergraduate_program_learning_objectives.html](http://www.sjsu.edu/chemistry/Academic_Programs/undergraduate_program_learning_objectives.html)

Grading: The grading scheme is tentative but will probably consist of three midterm exams (100 points each) and a comprehensive final exam (250 points). You are only required to take two of the three midterms. Individual make-up exams will not be given. Letter grades [according to the University policy: A(+/-) = excellent; B(+/-) = above average; C(+/-) = average; D(+/-) = below average; F = failure] will be assigned to each exam score and the course grade will be a weighted average of the letter grades. The lowest of the three midterm grades (or the one not taken) will be dropped and replaced with an average of the two higher midterm grades. (Exception: If a grade of fail is assigned to an exam due to academic dishonesty, the fail grade will be retained and the middle exam grade will be discarded).

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**Exams:** These are closed book and *absolutely* no-notes. You may use molecular models (without instructions). Calculators, cell phones, and other electronic devices are prohibited and may not be on your person during the exam (these may be left at the front of the room or left at home). I reserve the right to assign your seat as I see fit; even to reassign seats during an exam. Makeup exams will not be offered. *You may only take the exam in the section for which you are officially enrolled.* If you believe there has been a grading error, please bring it to my attention within two calendar weeks after the exam has been returned; no regrades will be done after this period.

**Final Exam Notification:** Final exam grades will not be posted. Your grade will be entered on MySJSU as soon as possible. However, this is your composite course grade only, of course. *If you wish to know how you scored on the final exam, please provide me with a stamped, self-addressed envelope at the final exam period, and I will mail your final exam score and grade to you as soon as possible.* Otherwise, please drop by my office hours next semester.

*Grades will not be given out by email*, and *I will not be available during the intersession (between semesters; i.e., winter or summer) to report or discuss grades.*

**Drop Policy:** University Policy will be followed. Students must consult with an academic advisor prior to dropping.

**Permission Code Policy:** If the class is full, any add codes given at the beginning of the semester shall be contingent on spaces becoming available.

**Posted Materials:** Keys to exams will be posted in the hallway outside S-164. Due to space limitations, they will be *posted only until the next test date.* Please be sure to record any correct answers you wish during that period.

**Student ID:** *At all exams, you must bring student photo ID.* You should show up early, as those who come late to exams will have to wait outside until all others are started.

**Academic Integrity:** “Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the University’s Academic integrity Policy requires you to be honest in your academic course work. Faculty are required to report all infractions to the Office of Student Conduct and Ethical Development.* The policy on academic integrity can be found at [http://sa.sjsu.edu/student_conduct](http://sa.sjsu.edu/student_conduct).

**Chemical Safety:** Chem 120S is a required course for all chemistry majors and a prerequisite for all Chem 180/298 research.
Sample Grade Calculation:

Midterm 1 = B+ (3.3)

Midterm 2 = C (2.0)

Midterm 3 = A- (3.7)

Final Exam = A (4.0)

Throw out low midterm; midterm average = (3.3 + 3.7)/2 = 3.5

Course Grade = (3.5)•(300/550) + (4.0)•(250/550) = 3.73 = A-

Cutoffs:

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