San José State University
Department of Chemistry
CHEM 112B Organic Chemistry II

Instructor: Dr. David Brook
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Telephone: (408) 924-4994
Email: david.brook@sjsu.edu
Office hours: TuTh1200-1315 and by appointment
Class days/time: TuTh 1330-1445
Final Exam: Thursday Dec 12, 1215-1430
Classroom: WSQ109
Prerequisites: CHEM 112A with a grade of C or better

Faculty Web Page
Copies of the course syllabus and major assignment sheets may be found on my faculty web page accessible through the quick links/faculty web page links on the SJSU home page after the first week of classes.

Messages related to this class will be sent by email. You are responsible for making sure I have an accurate email address for you that you check regularly. Emails to me should use my sjsu email address: david.brook@sjsu.edu, for questions, etc. Please put CHEM112B in the subject line of any emails related to this class

Course Description and Goals
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 approximately, though time will be taken to review earlier material and place newer material in context. A tentative schedule is given below, but will be subject to change as regards to the topics and assigned reading. 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.
Course Learning Objectives

Upon successful completion of this course students will be able to:

- Show mastery of the topics covered in CHEM 112A (Ch 1-11, 14, 16 of McMurry)
- Show mastery of the material covered inc CHEM 112B (Ch17-28 of McMurry)
- Identify the main classes of organic compounds by functional group, provide IUPAC names for simple organic molecules and draw skeletal structures for given IUPAC names
- Recall the main reactions of, and main synthetic routes for alkenes, alkyl halides, aromatic compounds, alcohols, ethers, thiols, thioethers, amines, aldehydes, ketones, carboxylic acids, esters, amides, acid chlorides, acid anhydrides and nitriles.
- Suggest appropriate mechanisms for the above reactions using the curved arrow formalism, and be able to describe how the mechanism may change according to the structure of the molecule and/or the reaction conditions
- Predict reaction products based on a knowledge of reaction mechanism
- Suggest possible pathways for short (3-4 steps) multistep syntheses of organic compounds, accounting for functional group/reaction condition incompatibility and understanding and using the concept of protecting groups as necessary

Program Learning Objectives

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

Required Items

Textbook
- McMurry, Organic Chemistry

Online Homework:
- www.saplinglearning.com

Useful but not essential:
- Weeks, Pushing Electrons
- Scudder, Electron Flow in Organic Chemistry
- Klein, Organic Chemistry as a Second Language

Other equipment requirements
- A set of molecular models.
- Student photo-ID card at all exams (see below).
Dropping and Adding

You are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. found at http://sa.sjsu.edu/student_conduct. You should be aware of the new deadlines and penalties for adding and dropping classes.

Assignments and Grading Policy

Grades will be based on two mid-term exams (100 points each), online homework (100 points) and a final exam (250 points)

Exam Schedule and Content (tentative but not likely to change)

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<td>15-18</td>
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<td>11/21</td>
<td>Mid-Term 3</td>
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**Final Exam:** Thursday Dec 12, 1215-1430  
The final exam will consist of an American Chemical Society standardized test in organic chemistry

**Online Homework:** Online homework will be completed using Sapling Learning (www.sapling.com). You must enroll on the Sapling website (cost $29.99) and search for CHEM 112B. In addition to contributing to your grade, the online homework problems give you important practice and feedback in solving problems in organic chemistry. There is a set of problems for each chapter we will cover. You may complete the problems at your own pace, but I strongly recommend you complete the relevant assignments before each midterm. You may take repeated attempts to answer each question correctly, but each time you lose 5% of the possible credit.

University Policies

**Academic integrity**

Students are expected to be familiar with the University’s Academic Integrity Policy. Please review this at http://sa.sjsu.edu/student_conduct. “Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University’s integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical development.”

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified.

**Campus Policy in Compliance with the American Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the AEC (Accessible Education Center) to establish a record of their disability.
Special accommodations for exams require ample notice to the testing office and must be submitted to the instructor well in advance of the exam date.
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<td>Aromatic Chemistry, Conjugation</td>
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<td>Alcohols, Phenols</td>
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<td>Carboxylic Acids and Nitriles</td>
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<td>Lipids, Nucleic Acids</td>
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