

Syllabus Chem 28B Organic Chemistry Reedley College, Spring 2000

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Office hours : M, T and Th 2:30-3:30 pm

Web site : <http://www.rc.cc.ca.us> **Click on Academic Programs and Chemistry Department.**

Chem 28B meets T and Th 9:00-10:15 am in FEM-4E

Textbook : Solomons, Organic Chemistry, seventh edition.

Course objectives : Chem 28B is an organic chemistry course for chemistry and biology majors. Chemical Engineering, Pre-Med and Pre-Pharm professional majors will also need and enjoy this course. Students will acquire a solid base to study biochemistry, pharmacology and other biology and chemistry related fields in engineering school, medical school, pharmacy school etc. In this class we make a thorough study of the reactions of principal functional groups with emphasis on theory and mechanism. The students will develop a level of learning skills, vocabulary and critical thinking skills which will enable them to successfully transfer to four year institutions.

Quizzes and exams: There will be three quizzes during this semester announced one week ahead of time. The average score of the quizzes is worth two exam scores.

Including the final there will be a total of three exams, typically covering more material than the quizzes. Each exam including the final will be equally weighted. The final is the comprehensive official American Chemical Society Organic Chemistry Exam. Students who want this course to transfer to UC Berkeley need to pass this exam with a score of 75%.

A no show for a quiz or exam without prior notification is graded with a 0 (=zero). This grade is also used for fraudulent behavior.

Grading: The average of graded homework and pop quizzes is worth the weight of one exam score. If the students' attendance was 100% and he/she has fulfilled all the assignments properly and submitted **in time**, the lowest grade of the quizzes will be dropped. Break-off for grading
A > 90%, B 80-89%, C 70-79%, D 60-69%, F < 59%.

Homework: Homework will be assigned often. It is essential to your success that you do your homework, with the emphasis on readings in Solomons' text. Homework will sometimes be collected and selected problems from Solomons will be graded. Occasionally a pop quiz will be given to check the homework assignment.

Attendance: In accordance with Community College policy attendance is mandatory. **Always** let me know in advance if you are to miss an assignment (homework, quiz or exam). If you miss two weeks or four consecutive lectures without prior notice you will be dropped automatically. Tardiness, leaving early, sleeping during class and poor classroom participation are all considered disruptive behavior and will be qualified with an absence.

Drop date: The final date to drop a class is FRIDAY, MARCH 10, 2000. After that day a letter grade must appear on your transcript. When you are dropped from the class before this date you will receive a W.

Brief description of lecture topics.

1. Conjugated Unsaturated Systems and Ultraviolet Spectroscopy. Chapter 13. Conjugated compounds, compounds with alternating double and single bonds show absorption in the ultraviolet region of the spectrum. We will study the molecular orbital description of dienes and trienes and the Diels-Alder reaction.
2. We will review the electrophilic substitution of aromatic compounds and the Friedel-Crafts reaction. Orientation of reactions on substituted rings especially the activation on ortho- and para-positions and the deactivation on the meta-positions will be learned. Refer for this important piece of organic chemistry to chapters 14 and 15.
3. The chapters 16 and 17 describe the aldehydes and ketones. Nucleophilic Addition reactions to the carbonyl group and aldol reactions are discussed in detail.
4. The carbonyl group $C=O$ has a special meaning in organic chemistry and thus in life! Reason why we will study the properties and reactions of this group not only in aldehydes and ketones, but also in carboxylic acids and esters.
The nucleophilic addition and elimination at the acyl carbon, the $C=O$ carbon are studied in detail. Refer to chapter 18.
5. From chapter 19, Synthesis and Reactions of Beta-dicarbonyl Compounds I will make a selection. Emphasis will be put on biologically important compounds.
6. Amines, chapter 20, constitute a very important group of compounds. We encounter them in everyday life as neurotransmitters and neurotoxins.
7. Phenols and Aryl halides and nucleophilic aromatic substitution are studied using chapter 21.
8. Compounds such as carbohydrates and lipids are essential biomolecules. We will spend a considerable amount of time studying their structure and reactions. Refer to the chapters 22 and 23.
9. In the last part of the semester if time allows we will study amino acids, proteins, and nucleic acids. Protein Synthesis and sequencing of amino acids in peptides will be discussed briefly.

There are no lectures during Spring Recess from M 4/17- F 4/21.

Quiz and Exam dates:

Quiz 1 : Th 1/27

Exam 1 : Th 2/17

Quiz 2 :Th 3/9

Exam 2 :Th 3/30

Quiz 3 :Th 4/27

Exam 3 = Final Exam: Tu 5/16 @ 8:00 am in FEM-4E