

CHEM 334 Spring 2012
Organic Chemistry II
California State University Northridge

Lecture:

Instructor: Dr. Thomas Minehan
Office: Science 2314
Office hours: TR 1:00-2:00 pm
E.mail: thomas.minehan@csun.edu

Class Meetings: MW, 2:00-3:15 pm
Eucalyptus 2221

Text & supplies: Wade, *Organic Chemistry*, 7th edition
Simek and Wade, *Solutions Manual for Organic Chemistry*, 7th edition.
A set of molecular models (e.g., *Molecular Visions* models)

Course Web Site: <http://homepage.mac.com/tminehan/>

Prerequisite for Enrollment in Chemistry 334

A passing grade in Chemistry 333 or its equivalent

About the Course: In this course you will again be introduced to the fundamental principles of organic chemistry. Continuing our study of common organic functional groups, we will explore the structure and reactivity of carbonyl compounds, aromatic compounds, amines, ethers, epoxides and sulfides. Structure elucidation of organic molecules by means of NMR spectroscopy will again be emphasized. In addition, toward the end of the course, students will be familiarized with the structure, properties, and reactivity of carbohydrates, amino acids, peptides, proteins and lipids.

Organic Chemistry is not only an interesting and fascinating field of study, but *application of the concepts you will learn in this course lead everyday to the synthesis of important new materials and pharmaceutical drugs, and to developing sophisticated new lab experiments to understand various natural / biological processes* (just to name a few). Most areas of modern science, especially medicine, biology and engineering, are strongly influenced by developments in organic chemistry, and the ability to synthesize and structurally characterize organic molecules greatly facilitates research in these other disciplines.

Student Learning Outcomes: (SLO1) Demonstrate basic knowledge in the area of organic chemistry (assessment tool: embedded questions in the final exam from an ACS standardized exam in organic chemistry)

Grading: Students Without Recitation

- Two hourly exams $2 \times 100 = 200$ pts (dates on schedule following)
- Final Exam (cumulative): 200 points. May 14, 3:00 pm
- Best 5 out of 7 quizzes (see below): $5 \times 20 = 100$ pts

TOTAL = 500 PTS

Grading: Students With Recitation

- Two hourly exams $2 \times 100 = 200$ pts (dates on schedule following)
- Final Exam (cumulative): 200 points. May 14, 3:00 pm
- Best 5 out of 7 quizzes (see below): $5 \times 20 = 100$ pts
- Recitation: 100 pts

TOTAL = 600 PTS

*Final grade will be assigned at the end of semester using (+/-) grading system. An overall score greater than/ equal to 80%, 70%, and 60% of the **total** point will guarantee you an **A**, **B**, or **C**, in the course, respectively. You will get a passing grade in this course only **if you get an overall score of 50% or higher. You must take the final exam in order to pass the course!**

Quizzes are given every second Monday at the beginning of class. Each quiz will last 10 minutes and will cover material from the previous week's lecture

For Students Taking Recitation: Your grade is out of 600 points, 100 points of which is the recitation grade. See your recitation syllabus for more information on how you will be evaluated. *The letter grade for **both** lecture and recitation is based on the percentage of points obtained out of 600; this means that the letter grade for lecture and recitation are the **same**.*

***Attendance:** Attendance in the lecture is **mandatory**

***Drop/ Withdrawal Policy:** The chemistry department adheres to the university policy concerning withdrawal from the course. A full description is published in the university catalog for the dates fixed for adding, withdrawal, etc. **Academic failure does not constitute a clear and compelling reason for withdrawal from class** or for the assignment of an incomplete grade after the date for withdrawal, as specified in the University catalog, is passed.

Make up exams are normally not given, and will be considered only under very compelling and unusual circumstance and when proper documentation is provided in support of such a request.

Cheating: Cheating on an exam will result in failure on that exam plus possible disciplinary action by the Dean of Students. In any instance of academic dishonesty the University's disciplinary procedures will be followed.

Tutoring: Free tutoring is available at the Department tutoring center in Science 2307 and at the Learning Resource Center. Also, the chemistry department has the names of people who will tutor for a fee.

First day FAQ's

What are the goals of this course for the student? At the end of the course, students should have a firm grasp of structure and reactivity of aromatic and carbonyl compounds. Furthermore, students should be able to propose reasonable mechanisms for simple organic reactions, and to suggest a rational synthetic sequence for the preparation of a given organic molecule.

What instructional methods will be used in this course? The ~1.25 hour daily lectures will incorporate both problem solving and class discussion. Questions during class are strongly encouraged, but because of time constraints, faculty office hours may be an even more ideal forum for questions and discussion on course content.

- Lecture Notes are posted on the course website, along with reading assignments, practice problems from the text, and additional practice problems. Answers to the additional practice problems, quizzes and exams will be posted periodically.
- In addition, the website contains links to useful internet sites on organic chemistry with tutorials and reaction mechanism movies.

Please make use of the course website and the internet resources provided to you!!

How does this course fit into broader curricula? Because of the importance of organic chemistry to almost every field of science, organic chemistry is a required course for people intending to major in biology, biochemistry, and any medical-related field. If you study in any of the above areas, you will certainly find that material in more advanced courses in your major will revisit the basic principles you learn here over and over again (so learn it now!).

Why was the required course textbook chosen? Both students and teachers alike in the past have found Wade to be sufficiently detailed yet clear and concise in its introductory treatment of organic chemistry.

Chemistry 334
Course Schedule
Instructor: Dr. Tom Minehan

<u>Dates</u>	<u>Topics</u>	<u>Reading</u>
Jan 23, 25	Ethers, Epoxides, Sulfides	Chapter 14
Jan. 30, Feb.1	Conjugated Systems and UV Spectroscopy Jan. 30: quiz #1	Chapter 15
Feb 6, 8	UV/ Aromatic Compounds	Chapter 16
Feb. 13, 15	Reactions of Aromatic Compounds Feb. 13: quiz #2	Chapter 17
Feb. 20, 22	Ketones and Aldehydes	Chapter 18
Feb. 27, 29	Ketones and Aldehydes/Carboxylic acids Feb. 27: quiz #3	Chapter 18, 20
Mar. 5, 7	Carboxylic acids	Chapter 20
Mar. 12	Exam #1 (Chapters 14-18)	
Mar. 14, 19, 21	Carboxylic Acid Derivatives Mar. 19: quiz #4	Chapter 21
Mar. 26, 28; Apr. 9	Carbonyl α -Substitution/Condensation Reactions Apr. 9: quiz #5	Chapter 22
Apr. 11	Amines	Chapter 19
Apr. 16	Exam #2 Cumulative through chapter 22, omit 19	

Apr. 18, 23	Amines	Chapter 19
Apr. 25, 30	Polymers	Chapter 26
	Apr. 30: quiz #6	
May 2, 7, 9	Carbohydrates	Chapter 23
	May 7: quiz #7	
May. 14	FINAL EXAM 3:00 pm-5:00 pm (cumulative)	

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Assigned Problems from the Text

Text: Wade, *Organic Chemistry*, 7th edition

<u>Chapter</u>	<u>Topic</u>	<u>Problems</u>
14	Ethers, Epoxides, Sulfides	10,14, 16, 17, 19, 20, 21, 25, 26, 27, 29, 35, 37, 48.
15	Conjugated Systems/Ultraviolet Spectroscopy	1, 2, 5, 6, 8, 9, 14, 15, 16, 23a-t, 30, 33, 38.
16	Aromatic Compounds	7a-c, 12a-d, 19, 27, 33, 38, 42, 45.
17	Reactions of Aromatic Compounds	1, 2, 6, 9, 14, 23, 24, 28, 32, 36, 37, 50, 51.
18	Ketones and Aldehydes	2, 6, 10, 12, 14, 17, 22, 25, 29, 30, 44, 46, 50, 59, 69, 72.
20	Carboxylic Acids	3, 4, 7, 8, 13, 15, 16, 21, 22, 33, 36, 39, 41, 43.
21	Carboxylic Acid Derivatives	2, 3, 4, 5b, 6, 12, 14, 20, 22, 26, 35, 39, 44, 45, 46, 49, 50a-j
22	α,β -Unsaturated Carbonyl Comp. Carbonyl α -Substitution Carbonyl Condensation	2, 5, 7, 9, 15, 16, 22, 25, 31, 33, 36, 39, 45, 47, 51, 56, 57, 59, 73, 76, 79, 80.
19	Amines	1, 2, 3, 4, 11, 13, 20, 26, 29, 31, 32a-j, 44.
26	Synthetic Polymers	1, 2, 3, 4, 5, 6, 8, 10, 13, 16, 21, 24, 27, 35, 36, 38.
23	Carbohydrates	5, 14, 16, 17, 18, 19, 24, 26, 40, 44, 53, 55, 68.

Additional problem sets are available at the end of the class notes for each chapter, which can be accessed at:

<http://homepage.mac.com/tminehan/chem334.html>