

CHEM 333 Spring 2013

Organic Chemistry I

California State University Northridge

Lecture:

Instructor: Professor Thomas Minehan
Office: Science 2314
Office hours: TR 12:00-1:00 pm
E.mail: thomas.minehan@csun.edu

Class Meetings: TR, 5:00-6:15 pm
Discussion: T or R, 6:30-7:20
Eucalyptus 2221

Text & supplies: Wade, *Organic Chemistry*, 7th/8th 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://tminehan.com/>

Prerequisite for Enrollment in Chemistry 333

A passing grade in Chemistry 102 or its equivalent

About the Course: In this course you will be introduced to the fundamental principles of organic chemistry. After a thorough examination of the structure, properties and stereochemistry of organic molecules, the basic organic reactions used to prepare common functional groups will be studied. In this context, the mechanistic principles underlying the reactions studied will also be emphasized. Finally, the course will familiarize the student with the common spectroscopic techniques chemists use for determination of the structure of organic molecules: NMR, IR, and mass spectrometry.

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:

- Homework (Sapling): 50 pts.
- Two hourly exams 2 x 100 = 200 pts (dates on schedule following)
- Final Exam (cumulative): 200 points. December 16, 5:30-7:30 pm
- Best 5 out of 6 quizzes (see below): 5 x 10 = 50 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 Tuesday at the beginning of class. Each quiz will last 10 minutes and will cover material from the previous week's lecture.

Homework is through the Sapling online learning system (~\$40/semester).

Welcome video: <https://vimeo.com/72453315>

Sapling Learning - Organic Chemistry Question Sets

Sapling's chemistry questions are delivered in a web browser to provide real-time grading, response-specific coaching, improvement of problem-solving skills, and detailed answer explanations. Dynamic answer modules enable one to interact with 3D models and figures, utilize drag-and-drop synthetic routes, and draw chemical structures—including stereochemistry and curved arrows. Altogether, Sapling is cheaper than a tutor, provides more value than a solutions manual, and goes beyond a mere assessment exercise to give a learning experience.

Instructions:

1. Go to <http://saplinglearning.com> and click on your country ("US Higher Ed" or "Canada") at the top right.
- 2a. If you already have a Sapling Learning account, log in and skip to step 3.
- 2b. If you have a Facebook account, you can use it to quickly create a Sapling Learning account. Click "Create an Account", then "Create my account through Facebook". You will be prompted to log into Facebook if you aren't already. Choose a username and password, then click "Link Account". You can then skip to step 3.
- 2c. Otherwise, click "create account". Supply the requested information and click "Create my new account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
3. Find your course in the list (you may need to expand the subject and term categories) and click the link.
4. Select a payment option and follow the remaining instructions.
5. Work on the Sapling Learning training materials. The activities, videos, and information pages will familiarize you with the Sapling Learning user environment and serve as tutorials for efficiently drawing molecules, stereochemistry, etc. within the Sapling Learning answer modules. These training materials are already accessible in your Sapling Learning course.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to support@saplinglearning.com explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.

To optimize your Sapling Learning experience, please keep your internet browser and Flash player up to date and minimize the use of RAM-intensive programs/websites while using Sapling Learning.

***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 2308 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 organic functional group structure and reactivity. Furthermore, students should be able to propose reasonable mechanisms for simple organic reactions, and to suggest a rational synthetic sequence for the preparation of simple organic molecules.

What instructional methods will be used in this course? The 2.5 hour weekly lectures will incorporate both problem solving and class discussion. Questions during class are strongly encouraged, but because of time constraints, faculty office hours and the discussion course 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: Professor Thomas Minehan

<u>Dates</u>	<u>Topics</u>	<u>Reading</u>
Aug 26, 28	Introduction and Review	Chapter 1
Sep 2, 4	Structure & Properties of Organic Molecules	Chapter 2
	Sep 2: quiz #1	
Sep 9, 11	Structure and Stereochemistry of Alkanes	Chapter 3
Sep. 16, 18	The Study of Chemical Reactions	Chapter 4
	Sep 16: quiz #2	
Sep. 23, 25, 30	Stereochemistry	Chapter 5
Oct 2	Exam #1 (Chapters 1-5)	
Oct. 7, 9	Alkyl halides	Chapter 6
Oct 14, 16	Structure of Alkenes	Chapter 7
	Oct 14: quiz #3	
Oct 21, 23, 28	Reactions of Alkenes	Chapter 8
	Oct 28: quiz #4	
Oct. 30	Exam #2 (Chapters 1-8)	
Nov. 4, 6	Alkynes	Chapter 9
Nov. 13, 18	Structure of Alcohols	Chapter 10
	Nov. 18: quiz #5	
Nov. 20, 25	Reactions of Alcohols	Chapter 11

Dec. 2	Infrared/Mass spectroscopy	Chapter 12
Dec. 4, 9	NMR Spectroscopy	Chapter 13
	Dec. 9: quiz #6	
Dec. 16	FINAL EXAM 5:30 pm-7:30 pm (cumulative, Chapters 1-13)	