

Syllabus for Organic Chemistry CHEM S220

YSS-A-2024; *Subject to updates*

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Please feel free to reach out to me if you have questions about this course.

Welcome to organic chemistry lecture.

Any student who has met the prerequisites as described below is welcome in this class. Students journey to this course along different pathways and possess a range of abilities, skills, knowledge, experiences, and expectations. We invite students to ask questions. Your input is necessary to a healthy teaching and learning environment. If you are experiencing a barrier that prevents your full participation in this course, contact me, christine.dimeglio@yale.edu, to discuss strategies for your best performance. We endorse, applaud, and enthusiastically commit to the Chemistry Department Diversity Statement, found here: <https://chem.yale.edu/diversity>

Canvas

Course content is organized, managed, delivered, and archived at <https://canvas.yale.edu/>, the **learning management system employed at Yale**. Canvas allows students to access curricular content 24/7 throughout the duration of the course. Students are required to use Canvas, and to bring technology for accessing Canvas to class every day. **Canvas/Syllabus** describes the course schedule and policies, **Canvas/Modules** is the central hub for accessing curricular content and **Canvas/Announcements** for sharing course-wide, time sensitive information.

Prerequisites

After two terms of college level general chemistry or exam placement into organic chemistry.

Attendance

Attendance and participation are **mandatory** in Yale Summer Sessions, including lecture sessions, problem-solving sessions, and assigned asynchronous lectures. We may utilize both in-person and remote modalities during the term, so students need access to zoom software and reliable internet access. Students facing illness, injury, family emergency, or Covid-related isolation will contact the instructor and Dean Follansbee by email as soon as possible.

Emergency Absences

When a student needs to be absent for the reasons above, they will contact the instructor if they are absent for 1 day, and Dean Follansbee if their absence is extended to more than 1 day. The plan of action will vary with circumstances.

Student Accessibility Services

Students who require accommodations related to timed assessments (quizzes, exams, etc.) work with the Student Accessibility Services Office in advance of the summer term. Students forward their accommodation, and their letter from SAS, to Christine.dimeglio@yale.edu. **Reach out by email ASAP** to explain your needs and we will put accommodations in place while awaiting paperwork.

Course Scheduled Events (Eastern Time)

- Lectures: M, Tu, W, Tr, F: 9:30-10:45 AM. ROOM 160 Sterling Chemistry Lab
Friday meetings may include asynchronously delivered recorded lecture, except Friday, 6/28, which will be in person.
- Q and A: Brief time for clarifying lecture points following each lecture, M-Tr 10:45-11:00 am
- Problem Solving Discussion Session: Tu/Tr 11am-noon;
- Email and Zoom: Both tools are employed as needed to engage in Q and A. Questions of interest to the group will be made available to all using the Canvas/Announcements feature.

Materials

Required Materials

*Textbook: Organic Chemistry by Marc Louden and Jim Parise, Roberts and Company publishers, 7th ed.
ISBN-13 978-1-319-18842-9

Suggested Materials

*Corresponding Solutions Manual: ISBN 9781319363772

Organic molecular modeling kits at amazon.com for inexpensive options (by Mega Molecules as an example).

*Please note you are welcome to use an earlier version of the textbook/solutions manual, but you will need to find corresponding problems.

Schedule

	Topics	Lecture/Textbook Chapter	
May 27	Bonding	1A	
28	Bonding	1B	PS: Resonance
29	Alkanes	2	
30	Acids and bases	3A	PS: Bronsted/Lowry acids/bases
31	Acids and bases (VIDEO LECTURE CANVAS)	3B	Quiz 1 CH1-CH3, Canvas, due 6/3, 1 pm Canvas/Quizzing opens 5/31, noon.
June 3	Alkenes, alkyne	4A	
4	Reaction rates	4B	PS: Making study guides
5	Addition reactions of alkenes	5A	
6	Addition reactions of alkenes, alkyne	5B	PS: Addition reactions
7	Stereochemistry (VIDEO LECTURE CANVAS)	6A	Quiz 2 CH4-CH5B, Canvas, due 6/9, 1 pm Canvas/Quizzing opens 6/7, noon.
June 10	Stereochemistry	6B	
11	Cyclic compounds and stereochemistry	7A	PS: Stereochemistry
12	Stereochemistry of reactions	7B	
13	Exam 1 CH1A-6B, In person, room 160, 70 minutes		
14	Intermolecular Interactions (VIDEO LECTURE CANVAS)	8	Quiz 3 CH7A-CH8, Canvas, due 6/17, 1pm Canvas/Quizzing opens 6/14 noon.
June 17	Alkyl halides, substitution, elimination	9A	
18	Alkyl halides substitution, elimination	9B	PS: SN1, SN2, E1, E2, Solvents, LG
19	Summary of substitution, elimination OMR reagents, carbenes	9C 10A	
20	Radical reactions/alcohols	10B	PS: see 6/18 and carbenes and OMR
21	Reactions of alcohols (VIDEO LECTURE CANVAS)	11A	Quiz 4 CH9A-CH10B, Canvas, due 6/24, 1p Canvas/Quizzing opens 6/21 noon.

June 24	Reactions of alcohols	11B Optional Review: 11am-noon CH1-8
27	Ethers, epoxides, sulfides, glycols	CH12A PS: Review: CH9-11
28	Ethers, epoxides, sulfides, glycols	CH12B Optional Review: 11am-noon CH9-10
29	Review CH11-12 and Practice Exam	PS: Practice Exam
30	Exam 2 In person, room 160 SCL, 70 minutes	comprehensive

Assessments

- Exam 1 (30%) and Exam 2 (30%) are delivered in person.
- The 4 quizzes are delivered by Canvas and are multiple-choice, auto-graded. The lowest quiz score will be dropped. (30%)
- Participation (10% - problem-solving sessions)

Policy regarding missed assessments

- If students miss a quiz, this will count toward a dropped quiz.
- If absent for Exam 1, the final exam will be 60% of the letter grade, with additional questions added to better represent the missed material on Exam 1.
- Students missing multiple assessments, or Exam 2, will need to discuss their status with YSS Dean Alexander Rosas.

Honor Code and Academic Integrity:

Students must work independently on all assessments in this course.

Useful websites

<https://www.masterorganicchemistry.com/>

<http://www.chem.wisc.edu/areas/organic/index-chem.htm>

<http://www.organic-chemistry.org/>

<http://www2.chemistry.msu.edu/faculty/reusch/VirtTxtJml/intro1.htm> (some practice problems with answers)

http://www.departments.bucknell.edu/chemistry/courses/chem211/problem_sets/ (practice problems with answers for org. chem I)

<http://www.aceorganicchem.com/organic-chemistry-practice-exams.html> (test bank of questions and answers in organic chemistry)

<https://legacyweb.chemistry.ohio-state.edu/flashcards/> (organic chemistry flash cards)

http://evans.harvard.edu/cgi-bin/problems/search2a_selectKeywords.cgi (challenging problems in organic chemistry)