Syllabus for Organic Chemistry CHEM S220 (updated as of 4-10)

YSS-A-2025

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

TA/CO-INSTRUCTOR Ruth Son, Ph.D., ruth.son@yale.edu

Welcome to organic chemistry lecture.

This class welcomes any student that has satisfied the prerequisites, described below. Students arrive with a range of abilities, skills, knowledge, experience, and expectations. You belong here. We invite and encourage you to ask questions. Your input is necessary to a healthy teaching and learning environment. Diverse intellectual engagement helps us thoughtfully construct educational materials, instructions, delivery style, and thereby grow personally and professionally. Contact me, Christine DiMeglio, to discuss strategies for your best performance.

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** allows 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, etc. will contact the instructor and Dean Alexander Rosas 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 Alexander Rosas 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 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, Th*, F: 9:30-10:45 AM. **ROOM 160 SCL** Sterling Chemistry Lab
- Q and A: 15-minute Q and A session following each lecture
- ***Tu and Th lectures include additional problem solving and lectures will last 90 minute**s. Q and A will follow Tu and Th lecture as usual from 11:00-11:15.
- Email always welcome; Zoom or in-person office hours, by appointment.

Materials

Required Materials

Textbook: Organic Chemistry by Marc Loudon and Jim Parise, Roberts and Company publishers, 7th ed. ISBN-13 978-1-319-18842-9**;** corresponding Solutions Manual: ISBN 9781319363772; please use the 7th edition since earlier editions have a different arrangement of material and problems.

Suggested Materials

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

Schedule

	SELECTED TOPICS FROM	Textbook Chapter	
May 26	Molecular Structures	1A	
27	Bonding	1B	PS1: Resonance (due 5/29)
28	Alkanes	2	
29	Acids and bases	3A	PS2: FG, Newman projections (due 5/31)
30	Acids and bases	3B	
June 2	Alkenes, alkyne	4A	Quiz 1 CH1-CH3A, 15 min 10:30-10:45
3	Reaction rates	4B	PS3: BA/BB and alkenes (due 6/5)
4	Addition reactions of alkenes	5A	
5	Addition reactions of alkenes, alkyne	5B	PS4: Addition reactions (due 6/7)
6	Stereochemistry	6A	
June 9	Stereochemistry	6B	Quiz 2 CH3B-CH5B, 15 min 10:30-10:45
	Practice Exam Posted		
10	Cyclic compounds and stereochemistry Post practice exam	7A	PS5: Stereochemistry (due 6/12)
11	Stereochemistry of reactions	7B	Questions after class on practice exam
12	**Exam 1 CH1A-6B** 75 minutes		**EXAM**
13	Intermolecular Interactions/Solvents	8	
June 16	Alkyl halides, substitution, elimination	9A	
17	Alkyl halides substitution, elimination	9B	PS6: Stereochemistry/cylcohexane Due 6/19
18	Summary of substitution, elimination	9C	Quiz 3 CH7A-CH8, 15 min, 10:30-10:45
	OMR reagents, carbenes	10A	
19	Radical reactions/alcohols	10B	PS7: REVIEW CH9A, B, C (due 6/21)

20	Reactions of alcohols	11A
June 23	Reactions of alcohols	11B Quiz 4 CH9A-CH10B 15 min, 10:30-10:45
24	Ethers, epoxides, sulfides, glycols	CH12A PS8: Rxn and mech,CH10-12 (due 6/26)
25	Ethers, epoxides, sulfides, glycols	CH12B conclusion Practice Exam Posted at 12 p
26	Study day, practice exam, Drop in study hall 10-11 am	Practice exam key posted at 12P Drop in study hall 1-2 pm
27	**Exam 2 CH7-12 (75 minutes)**	Key exam 2/posted grading/review

Assessments

- Exam 1 (30%) and Exam 2 (30%).
- The lowest quiz score will be dropped. Quizzing is worth 30%.
- Participation (10% - in class problem solving and submitting PS1-8, which are not graded, but given completion grades. No late assignments are accepted. Do all that you can and submit as is!)

Policy regarding missed assessments

- If a student misses a quiz, this will count toward a dropped quiz.
- If a student is 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.

Problem-solving resources

Solving problems in organic chemistry is the key to success. The textbook by Loudon, using the corresponding solutions manual for self-grading, will help you to master the material and prepare for quizzes and exams. Additional problem solving will come in the form of problem sets, with a key for self-grading, provided by Dr. Ruth Son. Students are required to submit these problem sets from Dr. Ruth for participation grades.

Honor code and academic integrity

Students must work independently on all graded 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)