

Provisional Syllabus for Organic Chemistry CHEMS221, Summer 2024

The Organic Chemistry Laboratory (ChemS223L) will be offered in the 2024 YSS

Lectures: M, T, W, Tr, F: 9:30-10:45 a.m. New Haven time:
 Discussion Sessions: T, Tr: 11:00-12:00 noon New Haven time. F section is optional and demand-led
 Office Hours: TBA
 Instructor: Session B: Jonathan Parr, jonathan.parr@yale.edu
 Required Materials:

- A) Textbook: Organic Chemistry by Marc Louden and Jim Parise, Roberts and Company publishers, 2021 7th ed: Paperback: **ISBN:9781319188429**
 Ebook: **ISBN:9781319337315**
 B) Access to a computer with ChemDraw installed.

Suggested Materials:

- A) Organic molecular modeling kit. Inexpensive options can be found through popular online suppliers (e.g. Mega Molecules)
 B) *Organic Chemistry as a Second Language*; David Klein, ISBN-13: **978-1118010402**

This class welcomes participation from any student that has satisfied the appropriate prerequisite, which is Chem220 or equivalent – please check with Parr if you have any questions about your preparedness.

The instructors believe that the class is enhanced and enriched by the participation of students with a diversity of backgrounds and perspectives. Our intent is to respect all participants in the course equally, regardless of gender or gender identity, age, ethnicity, race, culture, religion or socioeconomic status and are especially committed to increasing the representation of those populations that have been underrepresented in the past. Please let us know if you experience any barriers to success in this class and we will work with you to do what can be done to help.

Lecture Schedule

Date	Topics	Textbook Chapter	Lecture
July 1	Nuclear Magnetic Resonance What is it and how does it work?	14.1-4	1
July 2	Nuclear Magnetic Resonance What information can NMR give us?	14.5-.9	2
July 3	Dienes, resonance and aromaticity	28.2, 15.3	3
July 4*	How double bonds interact to show new behaviors	15.4	4
July 5	Dienes, resonance and aromaticity Characteristic reactions of conjugated systems	15.4-.7	5

- Not a holiday for us.

Lecture Schedule continued

Date	Topics	Textbook Chapter	Lecture
July 8	The chemistry of benzene and its derivatives First Quiz	16.4	6
July 9	The chemistry of benzene and its derivatives	16.5,.6	7
July 10	Allylic and benzylic reactivity	17	8
July 11	The chemistry of aryl and vinylic halides; transition metal catalysis	18.1-.3, .5,.6	9
July 12	Transition metal catalysis; Phenols and NAS	18.1-.3, .5,.6 18.4, .7-.11	10
July 15	The chemistry of aldehydes and ketones	19.1-.8	11
July 16	The chemistry of aldehydes and ketones	19.8-15	12
July 17	The chemistry of carboxylic acids	20	13
July 18	Midterm Test		
July 19	The chemistry of carboxylic acids	20	14
July 22	The chemistry of carboxylic acid derivatives	21.5,.7	15
July 23	The chemistry of carboxylic acid derivatives	21.8-.11	16
July 24	The chemistry of enolates, enols and α,β -unsaturated carbonyl compounds	22.3-.5	17
July 25	The chemistry of enolates, enols and α,β -unsaturated carbonyl compounds	22.6-.8	18
July 26	The chemistry of enolates, enols and α,β -unsaturated carbonyl compounds Second Quiz	22.9-.12	19
July 29	The chemistry of amines	23.11,.7-.9	20
July 30	The chemistry of amines	23.10-.12	21
July 31	The chemistry of amines	23.10-.12	22
Aug 1	Review		
Aug 2	Final Exam 3: Cumulative		

Two Quizzes, lowest one dropped (20%)

Daily Questions (10%)

Midterm (30%).

Final (40%)

STUDENTS WITH ACCOMMODATIONS SHOULD COMMUNICATE WITH THE INSTRUCTORS BY EMAIL THE FIRST WEEK OF CLASS.

Honor Code and Academic Integrity: Students are welcome use any resources they choose, anytime they choose, except during Exams. On exams, students must work independently, without communicating with other people in any form whatsoever. Details of the academic regulations can be seen [here](#).

Useful Web Resources.

<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)