

Organic Chemistry III
CHEM 2453 - 2
Spring Quarter 2023



Instructor: Brady Worrell

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Office: Seeley G. Mudd 130 (I am normally on campus M-F)

Lab: Seeley G. Mudd 239/243 (if not in office always check lab! Stop by for coffee if so inclined)

Lecture: T Th 8:00 – 9:50 AM, Boettcher Center Auditorium 102

Recitation: T 8:00 – 8:20~8:30 AM, Boettcher Center Auditorium 102

Office Hours: F 10:00 – 11:00 AM (SGM 130). I will also be on Zoom (my personal meeting room <https://udenver.zoom.us/j/5664144546>) *If these office hours do not work for you, please email me at least one day in advance and we can schedule a Zoom meeting.*

Textbook: *Organic Chemistry, Seventh Edition*, by Marc Loudon and Jim Parise (required)

Study Guide: *Study Guide and Solutions Manual to Accompany, Organic Chemistry, Seventh Edition*, by Marc Loudon and Jim Parise (recommended)

Course Objectives: This is the third and final section of a three-quarter series in organic chemistry. The scope of this course broadly focuses on the chemistry of carbon and compounds derived from this important element. In this final section we will be focusing on the chemistry and reactivity of: *i.* carbonyl compounds, *ii.* amines, *iii.* carbohydrates (sugars), and *vi.* aromatic heterocycles/nucleic acids (depending on time). I hope from this course you can obtain an understanding of chemical reactivity from the lens of an organic chemist and develop an appreciation for how organic molecules assemble, interact, and react. Ultimately from this course I hope to broaden your scientific literacy; *I strongly believe that this enhanced literacy will benefit your life no matter what career direction you ultimately pursue.*

Online Homework through Macmillan Achieve: There will be weekly problem sets to be completed online through the Macmillan Achieve system consisting each of 10 problems. These online homework assignments will be worth 100 points and there will be 7 in total. The online homework will be posted on Friday at 11 am and due Tuesday at 9 am. No online homework will be given during weeks 4 and 8. Any questions you may have on incorrect or difficult problems will be discussed in recitation.

Exams: There will be two 1 hour and 50-minute exams during the quarter worth 100 points each occurring during weeks 4 and 8 of the class. All examinations will be open note and open book. These exams will be “take home” format. Specifically, I will upload the examination to Canvas on Wednesday (the day before Thursday lecture) on weeks 4 and 8 at **8 am**. These exams will be due at 10 am on Thursday. No class will be held on these days. I will be available for questions or clarification, as needed, Wednesday 9 am – Thursday 10 am.

Final Examination: A final exam covering all core concepts and materials from week 1 to 10 will be given in week 11 of this course (June 6th, 8 am – 9:50 am, Boettcher Center Auditorium 102). You will find it most instructive to study materials covered on online homework, class notes, and previous test keys. *One of your scores on the previous two Exams can be dropped and the Final Exam can be doubled if this improves your overall score in the class. The final cannot be dropped.*

Final Grade: Your final grade will be determined out of the 400 available points obtained through online homework (100 pts), midterm (200 pts), and the final exam (100 pts, can be doubled if score is better than midterm). Although, in class/out of class engagement, attendance, and general participation *do not directly impact your final grade*, they will be considered in the case of borderline scenarios.

Point Structure:

Online homework: 100 points (6 total, 16.7 pts each)

Midterms: 200 points (2 total, 100 points each)

Final Exam: 100 points (1 total, can be doubled if better than midterm)

Total points in course: 400 points

Lecture and testing accommodations: I will make every effort to accommodate students with a learning disability. If you require special accommodations to be made, please email me at any time during the class (preferably within the first week). For further information, please see the University's Disability Services' website at: <http://www.du.edu/disability/dsp/index.html>. I am a very slow test taker and found time provided for testing to be insufficient and stressful. Therefore, I will not put a strict time limit on midterms and will give you ~25 hours for each examination. Although the final examination is time limited, exceptions can be granted. All examinations will be open book, open note. I hope for examination components of this course to test your comprehension of the material not your test taking ability.

Lectures: I will cover most material via drawn structures using my tablet in Notability which will be saved and uploaded to Canvas following the lecture. Lectures will be done live and will be recorded and uploaded to Canvas. If Powerpoint slides are periodically incorporated in lecture they will be posted afterwards on Canvas. *Although attendance to lecture is recommended, it is optional. No attendance will be taken, nor will attendance count towards your final grade.*

Canvas: The University of Denver uses Canvas as its learning management system. You may log in to <https://du.instructure.com> with your DU ID number and PioneerWeb password to access the course. Please ensure your settings allow for e-mail announcement notifications. Here are some helpful Canvas resources to get you started:

Canvas Student Quickstart Guide: <http://guides.instructure.com/m/8470>

Canvas Student Guide: <http://guides.instructure.com/m/4212>

Academic Integrity: I advocate for collaborative learning and teamwork, but I hope that each student will maintain high ethical standards. As such, I will support and enforce the Honor Code of the University of Denver: www.du.edu/honorcode

My commitment: It is my job to teach the students of this course the subject materials to the best of my ability. As such, *I am **your** employee.* Therefore, day or night, please contact me directly if you need help or need special accommodations. You are *never* bugging me.

Topics to be covered: this schedule is subject to change and any of the page numbers/topics covered are approximations. *The class schedule may go faster or slower but, it must be stressed, examinations will only cover materials presented in class.*

Week	Lecture	Topics	Readings
1		No lecture (Brady travelling for ACS, 3/28)	
	1 (3/30)	Chapter 19: The Chemistry of Aldehydes and Ketones Homework #1 – Posted 4/6, due 4/11	Pg 1024 – 1075 (19.1 – 19.15)
2	2 (4/4)		
	3 (4/6)		
3	4 (4/11)	Chapter 20: The Chemistry of Carboxylic Acid Homework #2 – Posted 4/13, due 4/18	Pg 1086 – 1116 (20.1 – 20.11)
	5 (4/13)		
4	6 (4/18)	Chapter 21: The Chemistry of Carboxylic Acid Derivatives	Pg 1129 – 1182 (21.1 – 21.12)
	No lecture. Midterm #1 – Posted 4/19 @ 8 am, due 4/20 @ 10 am		
5	7 (4/25)	Chapter 21: The Chemistry of Carboxylic Acid Derivatives, cont'd Homework #3 – Posted 4/27, due 5/2	Pg 1129 – 1182 (21.1 – 21.12)
	8 (4/27)		
6	9 (5/2)	Chapter 22: The Chemistry of Enolate Ions, Enols, and α,β -Unsaturated Carbonyl Compounds Homework #4 – Posted 5/4, due 5/9	Pg 1193 – 1263 (22.1 – 22.11)
	10 (5/4)		
7	12 (5/9)	Chapter 23: The Chemistry of Amines Homework #5 – Posted 5/11, due 5/16	Pg 1277 – 1316 (23.1 – 23.11)
	13 (5/11)		
8	14 (5/16)		
	No lecture. Midterm #2 – Posted 5/17 @ 8 am, due 5/18 @10 am		
9	16 (5/23)	Chapter 24: Carbohydrates Homework #6 – Posted 5/25, due 5/30	Pg 1328 – 1355 (24.1 – 24.7)
	17 (5/25)		
10	18 (5/30)	Chapter 26: The Chemistry of the Aromatic Heterocycles and Nucleic Acids	Pg 1426 – 1465 (26.1 – 26.6)
	19 (6/1)		
11	Final examination (covering all material throughout the quarter) – In person test, Boettcher Auditorium 102, June 6th (6/6) @ 8 am – 9:50 am		