

**Organic Chemistry III**  
**CHEM 2993**  
**Spring Quarter 2021**



**Instructor:** Brady Worrell

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**Office:** Seeley G. Mudd 120 (I am normally on campus M-F)

**Lab:** Seeley G. Mudd 239/243 (if not in office always check lab!)

**Lecture:** T Th 8:00 – 9:50 AM, Zoom (10-minute coffee/bathroom break from 8:50 – 9:00 AM)

**Recitation:** T 8:00 – 8:30(ish) AM, Zoom (during normal class period)

**Office Hours:** W 9:00 – 10:00 AM, F 1:00 – 2:00 PM, Zoom (my personal meeting room <https://udenver.zoom.us/j/5664144546>) *If these office hours do not work for you, please email me one day in advance and we can schedule a Zoom meeting.*

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

**Study Guide:** *Study Guide and Solutions Manual to Accompany, Organic Chemistry, Sixth 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), *iv.* activated esters (thio-, phosphate, etc), *v.* aromatic heterocycles/nucleic acids, and *vi.* amino acids, peptides, and proteins. 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; this enhanced literacy will benefit your life no matter what career direction you ultimately pursue.

**Online Homework through Sapling:** There will be weekly problem sets to be completed online through the Sapling system consisting of 10 total problems each. These online homework assignments will be worth 100 points and the number of assignments may range from 7-8 total. Your lowest problems set will be dropped with the remaining 6-7, making up the total 100 points.

Please go to [www.saplinglearning.com/login](http://www.saplinglearning.com/login) to register for an account.

Detailed registration instructions can be found here:

<https://www.youtube.com/watch?v=zvQV0pDLzyw>

Technical support information can be found here:

<https://macmillan.force.com/macmillanlearning/s/contactsupport>

**Exams:** There will be two 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 and will consist of 15 problems. 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 9 am on Thursday with class commencing at 9 am to 10 am. I will be available for questions or clarification, as needed, Wednesday 8 am – Thursday 9 am.

**Final Examination:** A final exam covering all core concepts and materials from week 1 to 10 will be given in week 10 of this course. The student will find it most instructive to study materials covered on online homework and class notes.

**Final Grade:** Your final grade will be determined out of the 400 available points obtained through online homework, exams, and the final exam. 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 (7-8 total, 1 dropped)

*Exams:* 200 points (2 total, 100 points each)

*Final Exam:* 100 points (1 total)

*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 limits on examinations and will give you ~25 hours for each examination. You can take as long as you need and, within reason, you will be accommodated. 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 Powerpoint which will be saved and uploaded to Canvas following the lecture. Lectures will be done live and will be recorded/uploaded to Canvas following class. If PowerPoint slides are periodically incorporated in lecture they will be posted afterwards on Canvas. *Although attendance to lecture is recommended, it is optional.*

**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](http://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	1 (4/1)	Chapter 19: Aldehydes and Ketones	pg 946 – 962 (19.1 – 19.6)
2	2 (4/6)	Chapter 19: <i>continued</i>	pg 963 – 996 (19.7 – 19.15)
	3 (4/8)	Chapter 20: The Chemistry of Carboxylic Acids	pg 1004 – 1018 (20.1 – 20.6)
3	4 (4/13)	Chapter 20: <i>continued</i>	pg 1019 – 1035 (20.7 – 20.11)
	5 (4/15)	Chapter 21: The Chemistry of Carboxylic Acid Derivatives	pg 1044 – 1060 (21.1 – 21.6)
4	6 (4/20)	Chapter 21: <i>continued</i>	pg 1061 – 1092 (21.7 – 21.12)
	<b>Exam #1 (covering Chapters 19 – 21) – posted 4/21 @ 8 am, due 4/22 @ 9 am</b>		
	7 (4/22)	Chapter 22: The Chemistry of Enolates/Enols	pg 1103 – 1138 (22.1 – 22.6)
5	8 (4/27)	Chapter 22: <i>continued</i>	pg 1141 – 1170 (22.7 – 22.12)
	9 (4/29)	Chapter 23: The Chemistry of Amines	pg 1183 – 1202 (23.1 – 23.7)
6	10 (5/4)	Chapter 23: <i>continued</i>	pg 1203 – 1222 (23.8 – 23.12)
	11 (5/6)	Chapter 24: Carbohydrates	pg 1232 – 1253 (24.1 – 24.6)
7	12 (5/11)	Chapter 24: <i>continued</i>	pg 1255 – 1275 (24.7 – 24.11)
	13 (5/13)	Chapter 25: The Chemistry of Activated Esters	pg 1283 – 1293 (25.1 – 25.5)
8	14 (5/18)	Chapter 25: <i>continued</i>	pg 1296 – 1318 (25.6 – 25.8)
	<b>Exam #2 (covering Chapters 22 – 25) – posted 5/19 @ 8 am, due 5/20 @ 9 am</b>		
	15 (5/20)	Chapter 26: The Chemistry of Aromatic Heterocycles and Nucleic Acids	pg 1327 – 1338 (26.1 – 26.3)
9	16 (5/25)	Chapter 26: <i>continued</i>	pg 1339 – 1363 (26.4 – 26.6)
	17 (5/27)	Chapter 27: Amino Acids, Peptides, and Proteins	pg 1373 – 1399 (27.1 – 27.6)
10	18 (6/1)	Chapter 27: <i>continued</i>	pg 1403 – 1434 (27.7 – 27.10)
	<b>In class final examination (covering Chapters 19 – 27) posted 6/2 @ 8 am, due 6/3 @ 10 am</b>		