

Organic Chemistry II – Course Overview

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Office hours: Wednesday 11AM-12PM, 5-6 PM.
Office hours may also be arranged by appointment.

Course Objectives The objective of the second semester of organic chemistry (chemistry 209) is to introduce students to a series of more advanced topics. The chemistry and reactivity (reactions) of different functional groups will be explored, with particular emphasis on carbonyl groups. Interconversion between different functional groups, reaction mechanism, and reactive intermediates will be discussed. Regular problem sets will be provided.

Course Eligibility: Students must have taken the first semester of the organic sequence (chemistry 206) or an equivalent course.

Course Meetings: Lecture will be given in Small Physics Laboratory (Room 109) from MWF 10:00 AM 10:00–10:50 AM on Monday, Wednesday and Friday.

Course Requirements:

Hour exams (three):*	300 pts (40–60%)
Final exam:*	200 pts (20–40%)
Problem Sets (10):	100 pts (20%)
Total Points*	500 points

***Weighting Scheme:** I want to grade you on your best effort. Accordingly, I will adhere to the following plan: at the completion of the course, your lowest mean-relative exam performance (100 points) will be dropped. This dropped exam grade may be one of your hour exams or one-half of your final. You cannot drop problem sets. This plan provides you the opportunity to have the final exam count between 20% and 40% of your final grade. Approximate grade distributions for each exam will be announced in class.

Hourly and Final Exams There will be three in-class hour-long exams, one administered roughly every four weeks. Portions of these exams may be take-home. Exams will focus on recent topics. There will also be a three-hour comprehensive final exam.

Problem Sets: Problem sets will be available (via blackboard) on Fridays, and will be due in class the following Friday. Answer keys will be posted on the due date. Each problem set will be worth 10 points. Two points (2) are awarded for binding your problem set with a staple. Eight of the points (8) will be awarded for completion on the following scale: 8 (complete and satisfactory effort), 6 (complete), 4 (incomplete or inadequate effort), 2 (poor effort), 0 (nonexistent). *No late problem sets will be accepted.* No problem sets will be due during an exam week. Detailed answer keys are posted. You are to assess your own work and review your answers relative to the key answers.

Grading	Final grades will be determined by the sum of your points throughout the semester by the following scale: A-/A 86–100% B-/B/B+ 73–85.99% C-/C/C+ 60–72.99% Due to exam curving these thresholds may go down; they will not go up.
Class Attendance	In accord with College policy, class attendance is expected. See undergraduate catalog (p.42) for more information. Please notify me of any absences by email.
Disability Services	Students with disabilities must contact disability services in the dean of students office.
Honor Code	All students are bound by the Honor Code. Incidences of cheating will be reported to the Honor System. See the student handbook for more information on the Honor Code.
Textbooks:	<i>Organic Chemistry 5th Edition.</i> Brown, Foote, Iverson, Anslyn. <i>Student Study Guide and Solutions Manual for Organic Chemistry, 5th Ed.</i> Brown, Foote, Iverson, Anslyn.
Model Kits:	Model kits are <i>very strongly</i> recommended and may be used on exams. Any model kit will work, but for orgo II if you will purchase one, then I suggest the Bio-organic set from Maruzen (cat no 5000; ~\$50) http://www.maruzen.info/hgs/catalog/
Additional Material	Will be posted on blackboard under lectures and readings. Additional material may also be placed on reserved at the library.
Extra Credit Opportunities	Several opportunities exist for extra credit (and you should take full advantage of them). First, you may turn in the info sheet with your photo. You can attend any organic departmental seminar (which occur on Fridays at 3 pm) or job candidate seminar (3 over this semester). I will announce these lecture opportunities in class and/or on blackboard. You will earn 2 pts for attending each of these. Other opportunities may be possible throughout the semester.

Chemistry 209 - Syllabus

Fall Term 2010

Date	Lecture Number - General Subject	Chapter	
W 8/25	1 - Introduction and orgo I review		
F 8/27	2 - Review, "friendly diagnostic exam"		
M 8/30	3 - Orgo I review, exam highlights		
W 9/1	4 - Alcohols	10	
F 9/3	5 - Alcohols	10	Problem Set #1 (PS1) due 9/3
M 9/6	6 - Alcohols/Ethers <i>Class Meets Labor day</i>	10-11	
W 9/8	7 - Ethers, Sulfides	11	
F 9/10	8 - Epoxides	11	PS2 due 9/10
M 9/13	9 - Organometallics	15	
W 9/15	10 - Carbonyl chemistry	16	
F 9/17	11 - aldehydes and ketones	16	PS3 due 9/17
M 9/20	12 - Carbonyl chemistry	16-17	
W 9/22	13 - Acids, esters, amides	17	
F 9/24	Exam 1		
M 9/27	14 - Carbonyl chemistry	17-18	
W 9/29	15 - Acids, esters, amides, etc.	18	
F 10/1	16 -	18	PS4 due 10/1
M 10/4	17 - Carbonyl chemistry	18	
W 10/6	18 - Enolates, enamines	19	
F 10/8	19 -	19	PS5 due 10/8
M 10/11	<i>No Class - Fall Break / C-bus day</i>	X	
W 10/13	20 - Carbonyl chemistry	19	
F 10/15	21 - Enolates, enamines	19	PS6 due 10/15
M 10/18	22 - Conjugated systems	20	
W 10/20	23 - Conjugated systems	20	
F 10/22	Exam 2		
M 10/25	24 - Benzene and Aromaticity	21	
W 10/27	25 -	21	
F 10/29	26 - Benzene reactivity	22	PS7 due 10/29
M 11/1	27 - Benzene continued...	22	
W 11/3	28 -	22	
F 11/5	29 -	22	PS8 due 11/5
M 11/8	30 - Benzene / Amines	22-23	
W 11/10	31 - <i>Class Meets. Veteran's Day</i>	23	
F 11/12	32 - Amines	23	PS9 due 11/12
M 11/15	33 - Carbon-carbon bond formation	24	
W 11/17	34 - (Pericyclic reactions)	24	
F 11/19	Exam 3		
M 11/22	35 - Carbon-carbon bond formation	24	
W 11/24	<i>Thanksgiving Break</i>	X	
F 11/26	<i>No Class</i>	X	
M 11/29	36 - Carbon-carbon bond formation	24	
W 12/1	37 -	24	
F 12/3	38 - Review/catch-up		PS10 due 12/1
F 12/10	Final Exam 2:00-5:00 pm		

Strategies to help with Orgo II:

- 1) The second semester of organic chemistry focuses more on reactions and mechanism than orgo I. Your study habits will likely have to change. The course moves at a faster pace and is exponentially more complex. If you are having trouble with the material, get help early.
- 2) Review your class notes carefully. Actively read the text (take notes, highlight, outline concepts) and compare with your class notes. You need to conceptually unify ideas and concepts that are related. Often this is best accomplished by making an outline. Some people prefer flash cards to understand key reactions. If you make flash cards, you still need to group and organize them into conceptually united blocks. There are too many reactions, reagents, and mechanisms to memorize them all.
- 3) Work many problems. Organic chemistry is a problem-intensive, visually descriptive, and drawing-demanding course. You will be graded on your problem solving. When working problems, *Do not look at the answer until you have worked the problem.* It is very easy to look at the answer and convince yourself that you know how to work and solve the question. You should work problems without having to refer to the book for guidance. It is one skill to understand the concept and quite another to apply your understanding and work problems effectively. Repetition is the key exercise!

Suggested In-chapter Problems: **All**

These are the best problems—very fundamental and core to learning the basics.

Suggested End-of-chapter Problems:

Chapter 10	15, 16, 18, 23, 24, 26-29, 31, 34, 35, 39, 42, 44-45, 50-54
Chapter 11	10, 11, 13, 21, 24, 25, 26, 30, 31, 33, 34, 36, 42-44
Chapter 15	7, 10, 18, 19
Chapter 16	14-18, 20-25, 29-31, 36-38, 41-45, 50-52, 54, 58-59, 67, 68, 72
Chapter 17	17a-b, 18-20, 23, 26, 28, 32-35, 38-39, 42-44, 45-47
Chapter 18	12, 14-16, 18a-c, 19-20, 22, 24-25, 27-28, 30, 32, 35, 38, 41, 43, 47, 52, 62-64
Chapter 19	18, 19, 20, 22, 24, 28, 29, 32-34, 38-39, 41, 43-44, 45a-d, 50, 60-61, 66, 67, 70, 71
Chapter 20	7-11, 19
Chapter 21	8a-c, 12, 14-16, 23, 26, 27, 32, 34, 45-47, 49a-f, 51, 61
Chapter 22	7, 8, 14-17, 19, 20, 24, 25, 28, 30, 32, 33, 38, 44, 45, 49, 58
Chapter 23	16, 18, 21, 24, 25, 29, 30a-d, 34, 40, 43, 45, 47, 52, 54, 64
Chapter 24	11-14, 19, 23-26, 30, 33, 40, 42, 44, 48, 52