

**Organic Chemistry I - 1158
CHEM 2451 Section 1
Summer Quarter, 2018**



Instructor: Ogar Ichire (Leo) Ph.D.

E-mail: ogar.ichire@du.edu

Phone: 303.871.2815

Office: F.W Olin 205A

Lecture: MTWRF 9:20 a.m. – 11:20 am (F.W. Olin 205)

Office Hours: Open Door

Required Text: *Organic Chemistry, Sixth Edition*, by Marc Loudon and *Study Guide and Solutions Manual to Accompany Organic Chemistry, 6th Edition*, by Marc Loudon and Joseph G. Stowell.

The Help Center in the library has four other textbooks to provide you with a pool of problems to assist you understand the concepts taught in class. Check the textbooks out.

Recommended Model Kit: Molymod #62053 Organic Chemistry Molecular Model Set by Indigo Instruments or other similar kit (typically available on Amazon)

Course Goals:

Specific course goals have been developed in line with the chemistry department mission and department learning outcomes (see current university catalog).

Students at the end of this course will:

- 1) Understand and apply current chemical theories in the following areas:
 - a. Use of the language and terminologies of organic chemist (nomenclature, concepts, and fundamental transformations).
 - b. Use of fundamental concepts to understand and predict structures, properties, reactivity, and mechanisms of organic compounds.
 - c. Use of molecular models and/or modeling software to explain reactivity, stability, and function.
- 2) Communicate understanding of organic principles
 - a. In writing on exams, quizzes, and assignments.
- 3) Develop critical thinking skills by

- a. Applying knowledge to new findings in chemical science.
 - b. Posing questions and answering question on multiple cognitive levels
- 4) Develop awareness of modern issues in chemistry by
 - a. Understanding the impact of organic chemistry in our daily life and professional knowledge.
 - b. Examining ethical issues which relate to applied organic chemistry.

Getting the most out of this class:

- Review your general chemistry notes the first week of class and take the class reading seriously. Preferable, read the whole chapter before class.
- Conduct searches after each class to find applications of the chemistry covered in class
- Solve as many problems as possible instead of memorizing. The concepts taught in class will be tested in the form of applied problems. So, solve problems to show you understand the chemistry.
- Seek help early. Do not allow confusion on concepts to pile up

Lectures: The lectures will generally follow the textbook and a lot of added materials for better understanding. Most lectures will be presented on the board. ***Attending every class and taking meaningful notes is incredibly important for this complex subject.*** Staying up with the reading will help you to understand the lecture better and take more meaningful notes. We will solve problems during class. Working problems will be a pillar of your success in organic chemistry and by working through these together I hope to provide you with insights and techniques for reasoning through concepts and using them to solve problem.

Problems You should work as many of the text's problems as possible. The exams will focus on problems involving reactions, mechanisms and synthesis. The only way to prepare for these problems is to practice, practice, and practice. The recommended problems can be found in textbooks, in-class problems, and additional problems will be presented in class and during recitation (if applicable). These problems represent a bare minimum of problems to be completed.

The problems interspersed within the chapter will help you test your proficiency in the individual topics and should be solved as you review your lecture notes for a section. The end-of-chapter problems are used to pull the individual topics and concepts together. **A good strategy may be to do all of the odd-numbered problems initially, and then the even ones as part of your exam review.** Keep a dedicated notebook for all solved problems, it will come in handy for quick revision before exams.

Solving problems together can also be very helpful and I encourage you to go over solutions to problems in small groups after working the problems independently. Your

peers may have an alternate way of looking at a problem than you, which can add to your toolbox of problem solving skills. Also, helping to teach the subject to your mates is one way to understand the material yourself.

Worksheets (WS): Worksheets are designed to help you practice standardized questions. It is essential that you complete the worksheets to assess your understanding of class material and apply your knowledge to solve challenging problems. Worksheets are worth 70 points – take them seriously.

Exams: There will be two midterm exams, worth 100 points each, and a final exam also worth 100 points. If your final exam score is higher than either midterm exam score, the lowest score will be switch with your final exam score. Note, every exam is equally important.

Class Summary: You expected to submit a weekly summary in your own words, reactions, mechanisms, and structures what you learned each week. This summary is worth 10 points each week. Keep a daily summary.

Final Grade: Your final grade will be determined out of the 400 available points on exams and worksheets (presentations and homework plus all earned bonus points).

There will be no makeup exams. If you miss an exam for any reason, that exam will be dropped and the final will count for 200 points. The final exam is not optional.

Grade	Range	Grade	Range
A	100 – 94 %	C-	<74 – 70%
A-	<94 – 90%	D+	<70 – 67%
B+	<90 – 87%	D	<67 – 64%
B	<87 – 84%	D-	<64 – 61%
B-	<84 – 80%	F	<60 – 0%
C+	<80 – 77%		
C	<77 – 74%		

Note: Final grades and percentage ranges are subject to change by the instructor

Extra Credit: If you want extra credit, keep a dedicated notebook of all solve problems. This notebook can be used to negotiate 12 extra points if you have solved numerous problems including all the in-class problems and your name appears 80% on the quiz sheet. Every class will have a quiz and those that get the correct answer will write their names on the yellow quiz sheet.

Cell Phone and Electronic Device Policy:

While I understand that mobile devices have become integral to our lives, they are disruptive to the learning environment. Therefore, I request that all electronic devices be turned off (not muted) during class (i.e.; please don't text/Facebook during class). If an emergency arises, and you need to contact the outside world during our lecture or recitation time, I request that you quietly leave the room and conduct your conversation outside.

Additionally, most all of our lectures will require far too much structural drawing for effective notes to be taken on a laptop so please leave these devices off during lecture.

Lecture and Testing Accommodations:

I will make every effort to accommodate students diagnosed with a learning disability. I will do this in complete confidence. I do, however, request that any student requiring these accommodations inform me the first day of class. For further information, please see the University Disability Services' website at <http://www.du.edu/disability/dsp/index.html>.

Academic Integrity:

While I advocate collaborative learning and teamwork, I also firmly believe that each individual should maintain the highest ethical standards. As such, I support and will strictly enforce the Honor Code of the University of Denver. www.du.edu/honorcode.

Honor Code Statement.

All members of the University of Denver are expected to uphold the values of *Integrity*, *Respect*, and *Responsibility*. These values embody the standards of conduct for students, staff, faculty, and administrators as members of the University community. These values are defined as:

Integrity: acting in an honest and ethical manner;

Respect: honoring differences in people, ideas, and opinions;

Responsibility: accepting ownership for one's own conduct.

Pioneer Pledge.

As a University of Denver Pioneer I pledge...

- to act with INTEGRITY and pursue academic excellence;
 - to RESPECT differences in people, ideas, and opinions and;
 - to accept my RESPONSIBILITY as a local and global citizen;
- Because I take pride in the University of Denver I will uphold the *Honor Code* and encourage others to follow my example.

Topics to be covered: Tentative Course Schedule – Subject to Change

	Date'18	Topic/Reading	Reading	Due
Wk1	6/18	Chemical Bonding and Structure Lewis dot structure, Octet Rule, Chemical bonding, formal charge, molecular geometry, polar covalent bond, Bond Theories Valence bond theory, Hybridization, molecular orbital theory, Resonance	Ch1 Ch 8.5	
	6/19	Molecular Representation of Organic Molecules Advanced Drawing of Organic Molecules, Lone pairs, Resonance, functional groups Acid and Bases Bronsted-Lowry definition: strength, pKa Lewis definition: Adducts, coordinate covalent bond	Ch 2 Ch 3	
	6/20	Functional Groups/Alkane Chemistry	Ch 2 (2.8)	
	6/21	Alkane Chemistry	Ch 2	
	6/22	Exam 1		WS1 & CS1
Wk2	6/25	Stereochemistry and cycloalkanes	Ch 6 & 7	
	6/26	Alkyl Halides	Ch 9 Ch10	
	6/27	Chemical Reactivity and Reaction Mechanism	Ch	
	6/28	Alkenes: Nomenclature Electrophilic Addition Reactions	Ch 5	
	6/29	Exam 2 (cumulative)		WS2 & CS2
Wk3	7/2	Nucleophilic Substitution	Ch 9	
	7/3			
	7/4 7/5	4th of July (Holiday) Elimination Reactions	Ch9	
	7/6	Final Exam (cumulative)		WS3 & CS3

Canvas and Class Notes:

Most lecture information will be presented on the board, however, when PowerPoint slides are used they will be posted on Canvas. Suggested problems and worksheets will also be posted on Canvas.