

Syllabus – Organic Chemistry I

Course Information

Chemistry 223 – Organic Chemistry I

Instructor: Dr. James Devery

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Weekly Schedule

Lecture: Tuesday, Thursday 8:30-9:45 AM in Sullivan Center - Galvin Auditorium

Discussion: Tuesday 10:00 AM-10:50 AM or 11:30-12:20 PM in Flanner Hall 105

Office Hours

Monday 2:00-3:00 PM

Wednesday 9:30-10:30 AM

Thursday 10:00-11:00 AM

Email

You must use your Loyola email address for all communication during this course, especially official communication regarding grades. Emails from outside sources can be blocked by spam filters.

Course Description

"A lecture, discussion and laboratory course for chemistry majors covering structure and bonding in organic molecules; nomenclature, chemical and physical properties and reactions of non-aromatic hydrocarbons, alkyl halides, alcohols, ethers; stereochemistry and conformational analysis; and spectroscopy.

Outcome: Students will understand the chemical behavior of organic molecules and the mechanisms of reactions."

Textbook and Additional Course Materials

Textbook: Organic Chemistry (8th Edition)

Authors: L. G. **Wade** Jr.

Publisher: Prentice Hall

ISBN-10: 0-321-76841-8

Molecular Model Kit: Molecular Visions Organic Model Kit (#3) or Preferred Kit

Website: sakai.luc.edu

Grading

5 Quizzes (30 points)	150	15%
3 Midterm Exams (200 points)	600	60%
1 Final Exam (250 points)	250	25%
Total	1000	100%

Quizzes

There are **seven** quizzes offered during the semester during the Discussion Section on the dates listed below. The quizzes will be worth 30 points each. *The **two** lowest scored quiz will be dropped.* **THERE ARE NO MAKEUP QUIZZES.** If you miss one quiz, it will be dropped, leaving 1 additional drop. **The quiz on December 1 will not be dropped.**

Quiz Dates: September 1, September 8, September 22, October 13, October 27, November 10, December 1

Midterm Exams

There are **three** midterm exams during the semester on the dates listed below. The midterm exams cover lecture topics and will be held during the Lecture. EACH EXAM COUNTS.

Midterm Exam Dates: September 24, October 20, November 17

Final Exam

The final exam will take place on **Saturday, December 12 at 9:00-11:00 AM in Flanner Hall 133**. *The final exam is cumulative.* All topics discussed during lecture over the semester are on the final.

IMPORTANT: I must be made aware of any exam conflicts by **Friday, September 17**. I will arrange an alternative exam time **ONLY** if notified before this date.

Final Grades

A guideline for grades is shown below. At minimum, you will receive the grade indicated. However, if the class average is below ~75%, there will be a curved grading system.

A = 94–100%
A– = 89–93%
B+ = 86–88%
B = 81–85%
B– = 78–80%
C+ = 75–77%

C = 66–74%
C– = 63–65%
D+ = 56–62%
D = 50–55%
F = 0–49%

Excused Absences for Exams

Missed exams will be handled on a case-by-case basis. If you miss an exam because of an illness, death in the family, or any other extenuating circumstance, you must provide written evidence (i.e.- note from doctor, etc.). Once approved, an alternative exam date and time will be assigned. If you miss the final exam with no prior notice, you will receive a zero on the exam and a course letter grade will be assigned.

Class time

Lecture

Important! Feel free to bring your books and modeling kit to class **AND USE THEM**. Prepare for lecture by scanning the textbook. Lectures will be the *most critical source* of information for this course. Remember, any questions not addressed during lecture can be addressed during discussion. If you miss a lecture, please get the notes from another student in class.

Discussion

The discussion section will develop your problem solving skills through working problems and taking quizzes. Come prepared for discussion. Be ready to ask questions on lecture concepts, textbook problems, previous quizzes, or previous exams. *No one will be admitted into the room once the quiz has begun.*

Study Strategies and Suggestions: You can approach Organic Chemistry in a manner similar to studying a foreign language. Every topic you learn impacts the next topic. Because the material continues to build in complexity, practice is the best way to learn the material. Practice is done by working problems. Honest collaboration is encouraged. Experience dictates that positive outcomes (for exam and course grades) are directly proportional to working and understanding the assigned

problems on a regular basis, i.e., applying the concepts learned to non-generic situations.

Typically, Organic Chemistry is not self-taught. Overnight cramming will probably not produce success! The student should quickly read the chapter/segment to be covered BEFORE lecture to improve lecture comprehension. After lecture, careful detailed re-reading of the chapter/segment and focused working of the assigned problems are appropriate, necessary, essential, and expected. In addition to student's participation in lecture, discussion, reading, and homework, joining and contributing to a study group is strongly encouraged.

If anticipating a passing grade of C, the minimal time per week devoted to Organic Chemistry is estimated at 4 hr for lecture and discussion, 4-10 hr for reading, and 4-10 hr for homework.

Problem Sets and Textbook Problems

In addition to the suggested textbook problems, multiple problem sets will be provided throughout the semester to help you practice. These will be found on Sakai (sakai.luc.edu/) as the semester proceeds. The problem sets will NOT be graded and are there to help you prepare for the quizzes and exams.

Class Etiquette

"...treat people the same way you want them to treat you..."

Come to class on time.

No talking.

Mute electronic devices.

No eating.

No sleeping.

Students with multiple violations of classroom etiquette will be subject to point deductions throughout the semester.

Academic Integrity

All students in this course are expected to have read and to abide by the demanding standard of personal honesty, drafted by the College of Arts & Sciences, that can be viewed at:

http://www.luc.edu/cas/pdfs/CAS_Academic_Integrity_Statement_December_07.pdf

Anything you submit that is incorporated as part of your grade in this course (quiz, exam, etc.) must represent your own work. Any students caught cheating will, **at the very minimum**, receive a grade of "zero" for the item that was submitted and this grade cannot be dropped. If the cheating occurred during a course exam, the incident will be reported to the Chemistry Department Chair and the Office of the CAS Dean. Depending on the seriousness of the incident, additional sanctions may be imposed.

Dropping and Withdrawal

Be aware of the following dates in the semester:

August 31: Last day to withdraw without a "W" grade

September 6: Last day to withdraw with a 100% Bursar credit

September 20: Last day to withdraw with a 50% Bursar credit

September 27: Last day to withdraw with a 20% Bursar credit

October 30: Last day to withdraw with a "W" grade, thereafter a "WF" will be assigned

Changes to Syllabus

There may be changes to the syllabus during the semester. ***You are responsible for all syllabus changes made in class whether or not you attend.***

Tutoring

The Center for Tutoring & Academic Excellence provides Loyola University students the opportunity to engage in Collaborative Learning conversations that will increase retention of course material, improve study habits, assist in achieving higher grades, and encounter new friends. For more information concerning our free tutoring services visit: www.luc.edu/tutoring/

Disabilities

Students with a university-documented disability should contact me immediately. If your disability requires that quizzes and exams be taken outside of the scheduled time or place, please consult: www.luc.edu/sswd/. Services for Students with Disabilities (SSWD) serves students with disabilities by creating and fostering an accessible learning environment.

Course Topics

Chapter 1: Introduction and Review

Chapter 2: Structure and Properties of Organic Molecules

Chapter 3: Structure and Stereochemistry of Alkanes

Chapter 4: The Study of Chemical Reactions

Chapter 5: Stereochemistry

Chapter 6: Alkyl Halides: Nucleophilic Substitution and Elimination

Chapter 7: Structure and Synthesis of Alkenes

Chapter 8: Reactions of Alkenes

Chapter 9: Alkynes

Chapter 10: Structure and Synthesis of Alcohols

Chapter 11: Reactions of Alcohols

Chapter 12: Infrared Spectroscopy and Mass Spectrometry

Chapter 13: Nuclear Magnetic Resonance Spectroscopy

Chapter 14: Ethers, Epoxides, and Thioethers

Course/Instructor Evaluation – IDEA

Loyola has recently switched to the IDEA program for instructor and course evaluations. At the end of the semester, you will complete an online evaluation of this course based on criteria set by IDEA and by the instructor. For this course, the main objectives are as follows:

- 1) Gaining factual knowledge (terminology, classifications, methods, trends)
- 2) Learning fundamental principles, generalizations, or theories
- 3) Gaining a broader understanding and appreciation of intellectual/cultural activity

Keep these objectives in mind throughout the course.

Week	Date	Day	Chapter	Description
1	25-Aug	Tues.	1	Intro and review: Lewis structures, bonding, resonance, acid-base conjugates, nomenclature.
	27-Aug	Thurs.		
2	1-Sep*	Tues.	2	Structure and properties: molecular orbital theory, hybridization, isomerism, functional groups.
	3-Sep	Thurs.		
3	8-Sep*	Tues.	3	Alkanes and cycloalkanes: nomenclature, conformational analysis, Newman projections, stereochemistry, chair conformations.
	10-Sep	Thurs.		
4	15-Sep	Tues.	5	Chirality: <i>R</i> & <i>S</i> , enantiomers, diastereomers, racemic mixtures, enantiomeric excess (ee), meso compounds.
	17-Sep	Thurs.		
5	22-Sep*	Tues.	4	Reaction energetics: free radical halogenations, thermodynamics, kinetics.
	24-Sep	Thurs.		
6	29-Sep	Tues.	6	Alkyl halides: nomenclature, structure, properties, synthesis, nucleophilic substitution, and β -elimination.
	1-Oct	Thurs.		
7	6-Oct	Tues.	no class	Midterm Break
	8-Oct	Thurs.	7	Alkenes: cont.
8	13-Oct*	Tues.	8	Alkenes: reactions
	15-Oct	Thurs.		
9	20-Oct	Tues.	9	Exam II (6-8) Alkynes: nomenclature, structure, properties, synthesis, and reactions. Intro to multi-step synthesis.
	22-Oct	Thurs.		
10	27-Oct*	Tues.	10	Alcohols: nomenclature, structure, properties, and synthesis.
	29-Oct	Thurs.		
11	3-Nov	Tues.	11	Alcohols: reactions
	5-Nov	Thurs.		
12	10-Nov*	Tues.	14	Ethers and epoxides: nomenclature, structures, properties, synthesis and reactions.
	12-Nov	Thurs.		
13	17-Nov	Tues.	12	Exam III (9-12) Mass Spectrometry and infrared spectroscopy
	19-Nov	Thurs.		
14	24-Nov	Tues.		Thanksgiving
	26-Nov	Thurs.		
15	1-Dec*	Tues.	13	Proton and carbon nuclear magnetic resonance
	3-Dec	Thurs.		
	12-Dec	Sat.		Cumulative Final (9:00-11:00am)

*Denotes dates of quizzes.