Organic Chemistry II, CHEM 224, Spring 2019

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http://www.luc.edu/chemistry/facultystaff/beckerdaniel.shtml

Lecture	MoWe 4:15PM - 5:30PM Quinlan Life Sci Aud 142	CHEM 224-012 (2301)
Discussion I	Mo 1:40PM - 2:30PM Cuneo Hall - Room 311	CHEM 224-013 (3083)
Discussion II	Mo 2:45PM - 3:35PM Cuneo Hall - Room 311	CHEM 224-014 (3084)

Office Hours: Wednesdays 3:00 – 4:00 p.m. in FH-217A
Suppl. Instr.: Elliot Gild, Supplemental Instructor (SI), egild@luc.edu

Required Text: Organic Chemistry, Klein, 3rd edition, hard copy or eText
Required Key: Student Study Guide & Solutions for Organic Chemistry, Klein 3rd and/or WileyPlus
Prerequisites: CHEM 221 or 223 (Gen Chem B) & CHEM 112 (Gen Chem B Lab), or CHEM 106.

Required: Your favorite organic molecular model kit from wherever. Here are a few of options: Duluth Labs MM-005 Student Set; Darling Modeling Kit, or Prentice Hall Model Set

Extra Resources *Organic Chemistry as a 2nd Language I*, David R. Klein

CHEM 224 Course Description
Organic Chemistry II (CHEM 224) is a 3 credit hour lecture and discussion course covering nomenclature, properties, reactions & synthesis, stereochemistry, and mechanisms of organic molecules building on the chemistry alkanes, alkyl halides, alkenes, alkynes, and alcohols plus IR and mass spectrometry from the first semester, covering conjugated pi systems and electrocyclic reactions, aromatic compounds and aromatic substitution reactions, aldehydes and ketones, carboxylic acids and carboxylic acid derivatives, enols and enolates, amines, organometallics, carbohydrates, amino acids, peptides and proteins, lipids, and polymers.

Outcome: Assign and understand IUPAC names, predict reaction products and mechanisms, supply starting materials and reagents for reactions, interpret and predict spectra (MS, IR, and NMR) for organic molecules.

Why Orgo? Do you have an interest in human health, prescription medicines and drugs? Organic chemistry is utilized by medicinal organic chemists for the design and construction of new molecules (drugs!) that are prescribed by doctors and dispensed by pharmacists to treat diseases. Organic chemistry is also essential for inventing new dyes, plastics, resins, and detergents, and it is also used in creating new photoreceptors for renewable solar energy and LEDs for display panels (organic LEDs = OLEDs).

1. *Syllabus***:** The current syllabus is posted on Sakai and is subject to change (dated at the top) during the semester. *You are responsible for all changes announced whether or not you are in attendance.*

2. *Exams and Grading:* There are three 1-hour mid-term exams and one 2-hour final exam. The lowest of the three mid-term exams will be dropped. If you miss an hourly exam for any reason, that is the exam that will be dropped. No make-up mid-term exams will be given under any circumstances. The final exam is cumulative and cannot be dropped.

Mid-term exam	100 points	(Best two out of three mid-term exams)
Mid-term exam	100 points	
Mid-term exam	----------	(Lowest mid-term dropped, *or any exam missed is the drop*)
Final Exam	150 points	
TOTAL	350 points	

This grading standard will be applied: 93% A, 90% A-, 87% B+, 83% B, 80% B-, 77% C+, 73% C, 70% C-, 65% D, 60% D-, <60% F. A curve for each individual exam may be applied based on the specific average and standard deviation, and will be provided upon return of the exam, along with exam grade distribution statistics.

You must bring a form of photo identification to the exam, which you may be asked to show. All exams are closed book and closed notes. When you are finished with your exam, please bring your completed exam to the front, and leave the room quietly without disturbing the other students.

There are no make-up exams. If you miss an exam for any reason, the final exam will be weighted to compensate for the missed exam. Exams will be graded and returned as quickly as possible, usually by the following class period. All grading questions, points of clarification, and grading errors must be brought to the instructor's attention no later than one week after the graded exam is returned.

3. *Homework:* Organic chemistry is a new language that is spoken in structures. The best way to learn a language is to practice speaking and writing it, so the best way to learn organic is to work problems every day. Homework problems will be recommended for each chapter but not collected, so you must be disciplined about working problems and keeping up with the pace of the lecture. Experience has demonstrated a direct correlation of success in organic with consistently working the assigned problems in the book and writing out the answers.

4. *Discussion:* The discussion section will be devoted to working through problems and answering questions about the homework problems and lecture/text material. *Attendance and participation are expected.*

5. *Final Exam:* The University sets the schedule for all final exams. The final will be held on Monday, April 29 from 4:15 - 6:15 p.m. in Cudahy Hall 202. You will have no more than 2 hours to complete the exam. Additional time will not be granted, even if you arrive late. There will be no make-up final exams given under any circumstance, and the exam will not be given early. Individual students who have four (4) final examinations scheduled for the same date may request to have one of those exams rescheduled. If a student reportshaving four final examinations scheduled for the same date, students should be directed to e-mail a petition to Lester Manzano, Assistant Dean for Student Academic Affairs, CAS Dean's Office (lmanzan@luc.edu).

6. *Academic Honesty:* 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, which can be viewed at: http://www.luc.edu/cas/advising/academicintegritystatement/ A basic mission of a university is to search for and to communicate the truth as it is honestly perceived. A genuine learning community cannot exist unless this demanding standard is a fundamental tenet of the intellectual life of the community. Students of Loyola University Chicago are expected to know, to respect, and to practice this standard of personal honesty. Academic dishonesty can take several forms, including, but not limited to cheating, plagiarism, copying another student's work, and submitting false documents. Note that I grade all exams individually and personally, and I pay especially close attention to written answers in order to check your understanding and to assign appropriate credit for work demonstrate. I grade each page in order (i.e., I grade page 1 on all exams, then page 2 on all exams, etc.) to ensure that partial credit is awarded consistently and fairly. Thus, it is very obvious to me when two exams have identical written answers. Therefore, resist the temptation to ever let your eyes drift during an exam, first of all because copying is cheating, and secondly, because I am very good at detecting duplicate answers. Also, please be mindful of your own exam by not providing an attractive nuisance for wandering eyes of other potentially weak-willed individuals. All exams are closed book and closed note. Academic dishonesty includes using notes or books during exams, looking at another student's test during the exam period, or talking during an exam. The consequence of academic dishonesty is failure of the exam, and the incident will be reported to the Chemistry Department Chair and the Office of the Dean. Additional sanctions including expulsion from the University may be imposed. Any student caught cheating will, at the very minimum, receive a grade of F for the item that was submitted.

7. Supplemental Instruction (SI) and Tutoring: There are Supplemental Instruction (SI) study sessions available for this course. SI sessions are led by an SI leader, who is a student that has recently excelled in the course. Session attendance is open to all and is voluntary, but extremely beneficial for those who attend weekly. Times

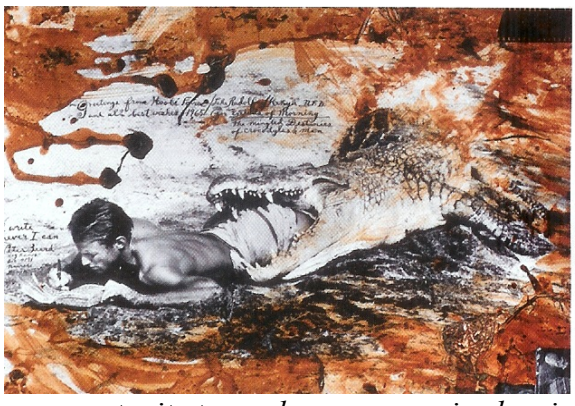
and locations for the SI session can be found here: www.luc.edu/tutoring. Students who attend these interactive sessions find themselves working with peers as they compare notes, demonstrate and discuss pertinent problems and concepts, and share study and test-taking strategies. Research shows students whom regularly attend sessions have higher grades at the end-of-the-semester and more deeply understand course concepts than those who do not. Students are asked to attend SI sessions with their Loyola ID, lecture notes, and textbook. The Tutoring Center offers free small group tutoring and lab (drop-in) tutoring for Loyola students. The groups meet once a week through the end of the semester and are led by a student who has successfully completed study in the course material. To learn more or request tutoring services, visit the Tutoring Center online at www.luc.edu/tutoring. The Student ACS (American Chemical Society) affiliate also offers tutoring for free ever week in Flanner Hall.

8. *Students with Disabilities:* If you have any special needs, please let me know in the first week of classes. The university provides services for students with disabilities. Any student who would like to use any of these university services should contact the Services for Students with Disabilities (SSWD), Sullivan Center, (773) 508-3700. Further information is available at http://www.luc.edu/sswd/.

9. Course Repeat Rule: Effective with the Fall 2017 semester, students are allowed only three attempts to pass Chemistry courses with a C- or better grade. The three attempts include withdrawals (W). After the second attempt, the student must secure approval for a third attempt. Students must come to the Chemistry Department, fill out a permission to register form or print it from the Department of Chemistry & Biochemistry website:http://www.luc.edu/chemistry/forms/ and personally meet and obtain a signature from either the Undergraduate Program Director, Assistant Chairperson, or Chairperson in Chemistry. A copy of this form is then taken to your Academic Advisor in Sullivan to secure final permission for the attempt.

10. *Loyola University Absence Policy for Students in Co-Curricular Activities*: Students missing classes while representing Loyola University Chicago in an official capacity (e.g. intercollegiate athletics, debate team, model government organization) shall be allowed by the faculty member of record to make up any assignments and to receive notes or other written information distributed in the missed classes. Students should discuss with faculty the potential consequences of missing lectures and the ways in which they can be remedied. Students must provide their instructors with proper documentation (develop standard form on web) describing the reason for and date of the absence. This documentation must be signed by an appropriate faculty or staff member, and it must be provided as far in advance of the absence as possible. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to give the student the opportunity to take the examination at another time. (https://www.luc.edu/athleteadvising/attendance.shtml)

11. 7. *Strategies and Suggestions:* The best method of learning organic chemistry is to work the in-chapter and all of the Practice problems and write out the answers. *Then* check your answers versus the Solutions Manual (SG/SM). Devote at least 12-15 hours per week to organic chemistry and keep up with the lectures. Organic chemistry continually builds, like a language, so studying every day is most effective. Homework will not be collected, but it is essential to work problems in a timely fashion. Skim the current chapter before the lecture, so that you will be aware of the topics to be covered and get more out of the lecture.



Never miss an opportunity to work some organic chemistry problems.

Organic Chemistry 224 Tentative Schedule (subject to change)

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	1/14 Ch 15: NMR	1/15	1/16 …Ch 15…	1/17	1/18
2	1/21 Martin Luther King	1/22	1/23 Ch 16: Conjugated Pi and electrocyclics	1/24	1/25
3	1/28 …Ch 16…	1/29	1/30 Ch 17: Aromatic Compounds	1/31	2/1
4	2/4 …Ch 17…	2/5	2/6 Ch 18: Aromatic Substitution	2/7	2/8
5	2/11 Midterm I over Ch 15-17	2/12	2/13 …Ch 18…	2/14	2/15
6	2/18 Ch 19: Aldehydes & Ketones	2/19	2/20 …Ch 19…	2/21	2/22
7	2/25 Ch 20: Carboxylic Acids & Derivs	2/26	2/27 …Ch 20…	2/28	3/1
8	3/4 Spring Break	3/5 Spring Break	3/6 Spring Break	3/7 Spring Break	3/8 Spring Break
9	3/11 Ch 21: Enols & Enolates	3/12	3/13 Midterm II over Ch 18-20	3/14	3/15
10	3/18 …Ch 21…	3/19	3/20 …Ch 21…	3/21	3/22
11	3/25 Ch 22: Amines	3/26	3/27 …Ch 22…	3/28	3/29
12	4/1 Ch 23: Organometallics	4/2	4/3 …Ch 23…	4/4	4/5
13	4/8 Ch 24: Carbohydrates	4/9	4/10 Midterm III over Ch 21-23	4/11	4/12
14	4/15 Ch 25: Amino Acids & Peptides	4/16	4/17 …Ch 25…	4/18	4/19
15	4/22 Ch 26: Lipids	4/23	4/24 Ch 27: Polymers	4/25	4/26
16	4/29 4:15 p.m. Cumulative Final	4/30	5/1	5/2	5/3