

**SYLLABUS – CHEM 223 – Organic Chemistry A – 1<sup>st</sup> Semester**  
 FALL 2019 - LOYOLA UNIVERSITY CHICAGO (LUC)

<b>Lecture:</b>	#1067	<b>Section:</b> 001	<b>Mon+Wed+Fri</b>	<b>10:25 am – 11:15 am</b>	<b>Flanner – Auditorium</b>
<b>Discussion:</b>	#1068	<b>Section:</b> 002	Mon	11:30 am – 12:20 pm	Flanner 105
	#1069	<b>Section:</b> 003	Mon	12:35 pm – 1:25 pm	Flanner 105
	#3694	<b>Section:</b> 004	Mon	1:40 pm – 2:30 pm	Flanner 105

**Senior Lecturer:** Dr. C. Szpunar

Office: Flanner Hall **200B**

Contact: best in person, 773-508-3128, cszpuna@luc.edu

Emergency Message via Chemistry Dept. Office, 773-508-3100, fax: 773-508-3086

**Office Hours:** **Tu:** 11 am – 1 pm

**Thur:** 10 am – 11:15 am (1<sup>st</sup> Thurs of the month), 10:00 am – 12:00 pm (all other Thursdays)

**Fri:** 11:30 am – 1:00 pm

(before class, ONLY IF lecturer is prepared for class AND student schedule conflicts w/regular office hours)

**N.B.:** Answer keys will be posted in the glass case outside Flanner 200B. No photographing pls!

**Required:** (See bookstore for most up-to-date offerings as publisher deals directly with bookstore.)

1. Organic Chemistry, Klein, 3<sup>rd</sup> ed., Wiley, 2017
2. Student Study Guide and Solutions Manual, Klein, 3<sup>rd</sup> ed. Wiley, 2017

Package Option 1: **ISBN 978-1-119-38071-9**

1. Soft, unbound, printed 3-hole punch text
2. Paperback solutions manual/study guide
3. Wiley Plus plus Orion – the online homework/practice tool – **Course ID: 701616**

Package Option 2: **ISBN 978-1-119-43349-1**

1. Soft, unbound, printed 3-hole punch text
2. Etext solutions manual/study guide
3. Wiley Plus plus Orion – the online homework/practice tool

**Suggested / Recommended Materials:**

1. Molecular modeling kit, Darling, Duluth, or equivalent
2. WileyPlus online homework/practice tool

**Optional Materials** (found helpful by some students, **do not purchase immediately**):

1. Organic Chemistry as a Second Language, 4e, I, Klein (2017), Wiley (ISBN 978-1-119-11066-8)
2. Barron's Orgo Cards: Organic Chemistry Review, Wang, Razani, Lee, Wu, and Berkowitz (ISBN 0-7641-7503-3) \*or\* Organic Chemistry Study Cards, R Van De Graaff, K Van De Graaff, and Prince, Morton Publishing, 2003 (ISBN 0-89582-577-5) \*or\* equivalent

**Grading** (weighting below) with approximate curved-grade guidelines:

**>90% A, 90-88% a-, 88-86% b+, 86-71% B, 71-69% b-, 69-67% c+, 67-51% C, 51-49% c-, 49-45% D, <45% F**

**EXAMS** – 3 – dates scheduled, announced (subject to change, although unlikely) **NO MAKE UPS** **45%**  
 (subject to change, although unlikely, 50-minute exam)

- UNEXCUSED ABSENCES merit a zero score.
- EXCUSED ABSENCES are handled on a case-by-case basis; grade weighting may be adjusted, depending on the circumstance(s); however, an excused absence **MUST BE CORROBORATED and DOCUMENTED**, e.g., accompanied by a note from the doctor, dentist, hospital rep, or funeral director; by a court summons, plane ticket stub, hospital release form, obituary, or other. With proper documentation, religious observance, representing the university, or personal emergency constitutes an Excused Absence.

**QUIZZES** – TBD – **unannounced** (during lecture or discussion or as take-home, **NO MAKE UPS**) **20%**

**HOMEWORK** – as needed per topic / chapter, due at each next lecture as participation, see below **5%**

**FINAL EXAM** – date scheduled and announced (scheduled by CAS) **30%**

\*\*\* Please note. Because this course, *Organic Chemistry*, is **cumulative, comprehensive, and improvement-based**, and because the final exam is deemed a culminating measure of a student's progress, any student meriting an F on the final exam may achieve a recorded course grade no higher than D, despite total points; a final-exam score of D may merit a course grade no higher than C, despite total points; and a final-exam score of C may merit a course grade no higher than B, despite student's standing otherwise (*i.e.*, despite total points.)

\*\*\* Please note that once an overall course grade has been posted officially on LOCUS, any subsequent requests for an INCOMPLETE GRADE or any additional extra-course credit WILL NOT and CANNOT be considered.

**Course Objective:** To guide, encourage, and foster the learning and understanding of Organic Chemistry – nomenclature, structures, properties, mechanisms, and syntheses – by the individual student, helping him/her to connect, extrapolate, integrate, and apply the many different aspects learned.

**Student Outcomes:** If successful, the student will learn how to ...

1. identify the various families / classes of organic compounds, their properties, their methods of preparation, and some typical reactions / transformations.
2. name and draw specific organic compounds.
3. postulate a logical reaction mechanism for simple organic reactions.
4. discriminate amongst relative stabilities of reaction intermediates.
5. plan and write out multi-step syntheses using known reagents / conditions to transform functional groups.
6. prepare for basic purification/separation techniques of organic compounds required in the laboratory.
7. analyze and interpret data from various spectrophotometric techniques to identify organic-compound structures: IR, NMR, UV-vis. and mass spectrometry.

**Lecture and Discussion – Attendance and Attention: *Important and required.*** Feel free to bring your books and modeling kit to class. Better yet, use them. Prepare for lecture by prior scanning of new material. Come prepared for discussion; be ready to ask questions on relevant homework or yet-unassimilated lecture material

**Cell Phones: NONE.** Please be courteous and respectful of others. Silent mode during lecture and discussion. **Not allowed in sight or within hearing during exams, subject to confiscation.** NO phone conversations in lecture hall or in discussion class – before class, during class, after class – AT ANY TIME! No texting – before class, during class, after class – AT ANY TIME! If you must talk or text, take it outside!!!

**Photography: NONE.** No photography of posted quiz or exam keys. No photography of discussion or lecture blackboard or whiteboard content.

**Recording: NONE.** No recording of lectures.

**Academic Honesty: Essential, expected, and enforced.**

Upon student notification, dishonesty dictates consequences which include: (1) notification of Chemistry and Biochemistry Department Chair, (2) notification of the CAS Assistant Dean for Student Academic Affairs, and (3) notation in the student's official university record upon documentation.

**Immediate consequences will include a ZERO score on any item in question, *i.e.*, the quiz or the exam.**

Refer to the LUC CAS Academic Integrity Statement and the sanctions for academic misconduct:

<http://www.luc.edu/cas/advising/academicintegritystatement> .

Also refer to the procedures for academic grievances: [www.luc.edu/academics/catalog/undergrad/reg\\_academicgrievance.shtml](http://www.luc.edu/academics/catalog/undergrad/reg_academicgrievance.shtml) .

**Study Strategies and Suggestions:** One may approach the study of Organic Chemistry in a manner *similar to tackling a new foreign language*. Its study will provide a basis to understanding future material – *building constantly, incessantly, and relentlessly* on the structural and mechanistic information presented previously and, hopefully, acquired by the student. Over two semesters, the course will cover: bonding, functional groups, families of aliphatic and aromatic compounds, nomenclature, structures, stereochemistry, reaction mechanisms, multi-step syntheses, and spectroscopic techniques. Because the course is cumulative and builds heavily on prior material, the best plan is to study Organic Chemistry regularly, every day, similar to practicing the piano. Collaboration with others on homework problems is encouraged, especially in a timely fashion. Experience dictates that positive outcomes (for exam and course grades) are directly proportional to working and understanding the relevant problems on a regular basis, *i.e.*, applying the concepts learned to non-generic situations.

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

*If anticipating an acceptable/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.*

**Homework:** An individual student is required personally to hand in **AT LECTURE** – attendance required – at least 10 completed problems (or parts of problems) from the previous day's lecture to earn full participation credit. For each missed or incomplete assignment, students will be assessed **0.15 %** from their homework/participation points. Each day's homework may NOT be turned in late for ANY reason, will NOT be accepted late for ANY reason, and may NOT be turned in by another. **No exceptions!!!**

**Chemistry and Biochemistry Department Caution** (effective Aug. 4, 2016, adj Aug. 27, 2019):

A student who opts to withdraw from CHEM 223 lecture after midterm may be permitted to remain in CHEM 225 – the co-required laboratory.

If a student plans to continue with the laboratory portion of the sequence, that student must continue to attend all of the lectures until the week of the official drop date, to gain as much background knowledge as possible in preparation for each laboratory assignment and in order to work safely in the laboratory amongst the other students. If a student is considering withdrawing from lecture, but remaining in the lab, the student may seek assistance from the Department of Chemistry and Biochemistry Office in the week prior to the deadline for withdrawing, beginning Monday at 9:00 am through Friday at 4:00 pm.

**Chemistry and Biochemistry Department Course Repeat Rule** (effective Aug. 24, 2017):

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 obtain a signature from the Undergraduate Program Director, Assistant Chairperson, or Chairperson in Chemistry. A copy of this form must be approved by the student's Academic Advisor to secure final permission for the attempt.

**Accommodations** (SSWD/SAC):

Any student requesting accommodation(s) for extra exam time, different test venue, and/or other course considerations should present their required SSWD/SSA letter to the lecturer in the first or second week of the term, but NOT later than 10 days before a scheduled exam. **This request should be made in private, during office hours** – NOT before, NOT during, NOT after a regularly scheduled class.

Please note that when requesting extra exam time, the student MUST NOT have scheduled another class directly BEFORE and directly AFTER this course, which would preclude him/her from taking the scheduled exam AT THE TIME OF THE GIVEN EXAM, i.e., the SSWD/SSA exam time must overlap the official exam time to be fair to ALL students. The student should note the posted SSWD/SSA office schedule and must schedule each accommodated exam at least one week prior to any exam where such accommodation is requested.

**Lecture Outline for Klein ed.3 (tentative, subject to change)**

<u>Week</u>	<u>Date</u>	<u>Ch-Lect</u>	<u>Topic</u>	<b>***EVENT***</b>
1	Aug 26 Aug 28 <u>Aug 30</u>	1-1 1-2 1-3	Review – Gen Chem: Electrons, Bonds, Molecular Properties	
2	Sept 2 Sept 4 <u>Sept 6</u>	*** 2-1 2-2	Molecular Representations	<b>*** MONDAY ***** LABOR DAY – HOLIDAY</b>
3	Sept 9 Sept 11 <u>Sept 13</u>	3-1 3-2 3-3	Acids and Bases	
4	Sept 16 <b>Sept 18</b> *** <u>Sept 20</u>	4-1 4-2	Alkanes and Cycloalkanes	<b>***** Wednesday ***** EXAM I (Chapters 1-4)</b>
5	Sept 23 Sept 25 <u>Sept 27</u>	4-3 5-1 5-2	Stereoisomerism	
6	Sept 30 Oct 2 <u>Oct 4</u>	5-3 6-1 6-2	Chemical Reactivity and Mechanisms	
7	Oct 7-8 Oct 9 <u>Oct 11</u>	*** 6-3 7-1	Alkyl Halides: Nucleophilic Substitution and Elimination Reactions	<b>*** Monday/Tuesday ***** MIDTERM BREAK</b>
8	Oct 14 <b>Oct 16</b> *** <u>Oct 18</u>	7-2 7-3		<b>***** Wednesday ***** EXAM II (Chapters 4-7)</b>
9	Oct 21 Oct 23 <u>Oct 25</u>	8-1 8-2 8-3	Addition Reactions of Alkenes	
10	Oct 28 Oct 30 <u>Nov 1</u>	9-1 9-2 10-1	Alkynes Radical Reactions	<b>***** FRIDAY ***** (last day to withdraw with a W)</b>
11	Nov 4 Nov 6 <u>Nov 8</u>	10-2 10-3 11-1	Synthesis	
12	Nov 11 <b>Nov 13</b> *** <u>Nov 15</u>	11-2 12-1	Alcohols and Phenols	<b>***** Wednesday ***** EXAM III (Chapters 7-11)</b>
13	Nov 18 Nov 20 <u>Nov 22</u>	12-2 12-3 14-1	Spectroscopy – IR and MS	
14	Nov 25 <u>Nov 27-29</u>	14-2 ***		<b>***** WED-FRIDAY *** THANKSGIVING DAY – HOLIDAY *****</b>
15	Dec 2 Dec 4 <u>Dec 6</u>	14-3 13-1 13-2	Ethers, Epoxides; Thiols and Sulfides (student to finish on his/her own, if time does not permit)	
16	<b>Dec 9 Mon</b>		<b>Cumulative FINAL EXAM, 9:00 – 11:00 am, Flanner Auditorium, 133</b>	