

SYLLABUS – CHEM 223 – off-semester – Organic Chemistry A – 1<sup>st</sup> Semester – TuThur Lecture

Spring 2019 - LOYOLA UNIVERSITY CHICAGO (LUC)

Lecture:	#2019	Section:	001	TuThur	8:30 – 9:45 am	LSB 142
Discussion:	#2020	Section:	002	Friday	11:30 am – 12:20 pm	Flanner 007
	#2021	Section:	003	Friday	12:35 pm – 1:25 pm	Flanner 105

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: **Mon:** 11:30 am – 1:00 pm **Tues:** 11 am – 1 pm  
**Thurs:** 10 – 11:15 am (1<sup>st</sup> Thursday of the month), 10 am – 12 noon (other Thursdays)  
 (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

## 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

## 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 – **Course ID: 672819**

## Suggested / Recommended Materials:

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

Optional Materials (found helpful by some students, but hold off initially – **do not purchase immediately**):

1. Organic Chemistry as a Second Language: First Semester Topics, 4E ed., Klein, 2017, Wiley (ISBN 978-1-119-11066-8 (PBK))
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 (adj Jan 16, 2019):

**>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 – 2 – dates scheduled, announced (subject to change, although unlikely) NO MAKE UPS 40%**

- 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, any 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 by the College of Arts and Sciences (CAS) 35%**

\*\*\* Please note that 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 or any additional extra course credit with NOT be considered.

**Course Objective:** To guide, encourage, and foster the learning and understanding of Organic Chemistry – nomenclature, structures, properties, mechanisms, syntheses, and spectroscopy – 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 classes of organic compounds, their methods of preparation, and typical reactions.
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 instruments used in separating and identifying organic compounds: IR, NMR, and UV-vis spectrophotometers and mass spectrograph.

**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 assigned 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 on any item in question (quiz or exam).**

Please 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 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 assigned 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 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.*

**Homework/Participation:** Students are required to hand in **at the beginning of LECTURE** at least 10 completed problems (or parts of problems) from the previous day's lecture to earn full participation credit, with his/her name on each page. **No assignment is expected on EXAM DAYS.** For each missed assignment, students will be docked **0.2%** from their homework/participation points. Each day's homework may NOT be turned in at a different time and will NOT be accepted late. No exceptions!!!

#### **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/SAC 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, NOR 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/SAC exam time **must overlap** the official exam time to be fair to ALL students. The student should note the posted SSWD/SAC 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) – Spring 2018

<u>Week</u>	<u>Date</u>	<u>Ch-Lecture</u>	<u>Topic</u>	<u>***EVENT***</u>
1	Jan 15 Jan 17	1-1 1-2	Review – Gen Chem: Electrons, Bonds, Molecular Properties	
2	Jan 21 Jan 22 Jan 24	*** 2-1 2-2	Molecular Representations	***** Monday ***** MartinLutherKing Day HOLIDAY
3	Jan 29 Jan 31	3-1 3-2	Acids and Bases	
4	Feb 5 Feb 7	4-1 4-2	Alkanes and Cycloalkanes	
5	<b>Feb 12</b> Feb 14	*** 5-1	Stereochemistry / Stereoisomerism	***** <b>Tuesday</b> ***** <b>EXAM I (Chapters 1-4)</b>
6	Feb 19 Feb 21	5-2 5-3		
7	Feb 26 Feb 28	6 7-1	Chemical Reactivity and Mechanisms Alkyl Halides: Nucleophilic Substitution and Elimination Reactions	
8	Mar 4-9	***		***** Monday-Saturday ***** MIDTERM Spring BREAK ***
9	Mar 12 Mar 14	7-2 8-1	Addition Reactions of Alkenes	
10	Mar 19 Mar 21	8-2 9-1	Alkynes	
11	Mar 25 <b>Mar 26</b> Mar 28	*** *** 9-2		***** Monday ***** (last day to withdraw with a W) ***** ***** <b>Tuesday</b> ***** <b>EXAM II (Chapters 4-8)</b>
12	Apr 2 Apr 4	10-1 10-2	Radical Reactions: Alkanes to Alkyl Halides	
13	Apr 9 Apr 11	11 12-1	Synthesis Alcohols and Phenols	
14	Apr 16 Apr 18	12-2 14-1	Spectroscopy – IR and MS	
	Apr 19 – Apr 22			***** Good Friday – Easter Monday ***** EASTER BREAK
15	Apr 23 Apr 25	14-2 13	Ethers, Epoxides, Thiols, and Sulfides (student to finish on his/her own, if time does not permit)	
16	<b>May 4 Sat</b>		<b>Cumulative FINAL EXAM, 9:00 – 11:00 am, LSB 142</b>	