SYLLABUS – CHEM 223 – Organic Chemistry A – 1st Semester
FALL 2020 - LOYOLA UNIVERSITY CHICAGO (LUC)

Lecture:	#1062	**Section:** 001	Mon+Wed+Fri	**10:50 am – 11:40 am**	**Flanner – Auditorium**
Discussion:	#1063	**Section:** 002	Mon	12:10 pm – 1:00 pm	Flanner 105
	#1064	**Section:** 003	Mon	1:30 pm – 2:20 pm	Flanner 105
	#3159	**Section:** 004	Mon	2:50 pm – 3:40 pm	Flanner 105

Sr. Lecturer: Prof. C. Szpunar
Student Office Hours: via email - cszpuna@luc.edu – *availability as announced, MWF*
Office: Flanner Hall **200B**
Emergency Message via Chemistry Dept. Office: 773-508-3100, fax: 773-508-3086

Required: (See bookstore for most up-to-date offerings as publisher deals directly with bookstore.)
1. Organic Chemistry, Klein, 3rd ed., Wiley, 2017
2. Student Study Guide and Solutions Manual, Klein, 3rd 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: 767856**

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, First-Semester Topics, 5th ed. Semester I, Klein (Aug 2019), Wiley (ISBN 978-1-119-49348-8, 1-119-49438*X) *or* equivalent previous editions
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* any type of flash cards, including self-made

Grading Guidelines *(approx. weighting below):*

>90% A, 90-89% a-, 89-88% b+, 88-71% B, 71-70% b-, 70-69% c+, 69-51% C, 51-49% c-, 49-45% D, <45% F

EXAMS – 3 – dates announced – ONLINE – ***NO MAKE UPS*** **45%**

- 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 – to be determined – to be announced – ONLINE ***NO MAKE UPS*** **QUIZZES** **25%**

FINAL – date announced (scheduled by CAS), **no alternative date/time, *NO MAKE UPS*** **30%**

Homework - per chapter/topic; feel free to work any, all, and as many problems to apply/master concepts – **recommended for student success.**

*** Please note that this course, Organic Chemistry, is ***cumulative, comprehensive, and improvement-based.*** The final-exam grade – deemed a culminating measure of a student's progress – and the student's LUC-Early-Alert status grade may also be taken into account, subjectively, in assigning the student's course grade.

*** Also note that once an overall course grade has been posted officially on LOCUS, any subsequent requests for an INCOMPLETE GRADE or for any additional extra 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, syntheses, and spectroscopy – by the individual student, helping him/her to connect, extrapolate, integrate, and apply the many different aspects learned, using critical thinking.

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

1. identify the various classes / families of organic compounds, their properties, their methods of preparation, and some typical reactions / transformations.
2. name and draw specific organic compounds.
3. postulate logical / acceptable reaction mechanisms for simple organic reactions.
4. discriminate amongst relative stabilities of reaction intermediates.
5. plan and write out effective, efficient multi-step syntheses using known reagents / conditions to transform functional groups and to add or remove carbons.
6. prepare for typical purification / separation techniques of organic compounds required in the laboratory.
7. analyze and interpret data from a combination of spectroscopic / analytical techniques used in separating and identifying organic compounds: IR, NMR, and UV-vis, and mass spectrometry.

*****Online Lectures – Attention and Participation:** ***Important and essential.*** N.B. (Note well!)

- Feel free to use your models at any time. Many of us need to see a 3-dimensional (3D) representation.
- Prepare for lectures by scanning the Klein-text headers and illustrations for the new material.
- Use the Power-Point lecture highlights in combination with detailed PP comments, to acquire new concepts to be learned / applied, in lieu of normal face-to-face lectures.
- Take advantage of the Panopto clips/bits which may be added at a later date, for enrichment.
- Then, read the corresponding text. However, whatever is covered in lecture rules! Use the text as a resource.
- Subsequently, do HW problems to assimilate the concepts, as many as needed to acquire the concepts – the key to success! Use the Klein study guide to help explain the HW-problem responses. Note that the study-guide answers may not be all encompassing; the study-guide answers may not be unique, nor complete.
- Feel free to ask questions by email – homework or as yet-unassimilated lecture material, anything chemistry. Please try to be concise.
- Explanations to HW or lecture questions deemed particularly significant will be shared via email with all students.

Academic Honesty: Essential, expected, and enforced.

Upon student notification, dishonesty dictates consequences which may 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.
Please refer to the LUC CAS Academic Integrity Statement and the sanctions for academic misconduct:
http://www.luc.edu/cas/advising/academicintegritystatement .

*** If any student submissions – quizzes or exams – are directed during the course to be delivered via Sakai Assignments or are part of take-home assignments, responses for this course are subject to the **Honor System**. Do your own work! Googled responses are NOT acceptable. Lecture dictates acceptability for all responses.

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, properties 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*.

For study purposes, collaboration with others on HW problems is strongly encouraged, especially in a timely fashion. However, collaboration is NOT acceptable for assessment, *i.e.,* on a quiz or test!!!

Experience dictates that positive outcomes (for exam and course grades) – the secret to student success – are directly proportional to working and understanding the relevant problems on a regular basis, *i.e*., applying the concepts learned to specific, non-generic situations and thinking creatively. Typically, normally, usually, Organic Chemistry is not efficiently self-taught!!!

Overnight cramming will probably NOT produce success! The student should scan the text chapter / segment to be covered BEFORE viewing the Power Point lecture highlights and assimilating the PP detailed comments (**what would have been said in lecture, if the course were not online**) to improve lecture comprehension. After each PP lecture, careful detailed reading of the chapter / segment and focused working of the homework (HW) problems are appropriate, necessary, essential, and expected**.**

In addition to student's viewing of PP lecture, assimilating the PP detailed comments, reading the text, and infusing comprehension with practice through homework problems, joining and contributing to a study group would typically, normally, usually be strongly encouraged. But, not during an assessment, not for a quiz, nor an exam. *If anticipation of 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.*

Chemistry and Biochemistry Department Laboratory 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 accompanying 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.

Accomodations (SSWD/SAC):

Typically, normally, usually, any student requesting accommodation(s) for extra exam time, different test venue, special equipment, and/or other course considerations would present his/her required SSWD/SSA letter to the Chair of the Chemistry and Biochemistry Department in the first or second week of the term, but NOT later than 10 days before a scheduled exam.

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 for his/her requests; he/she must schedule each accommodated exam at least one week prior to any exam, where any such accommodation might be requested. *** This online course will build in extra time for ALL students, for assessments and for technology-submission considerations. Other accommodations will be considered on a case-by-case basis.

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

Week	*Date*	*Chaps*	*Topic* ***EVENT***
1	Aug 24	1	Review – Gen Chem: Electrons, Bonds, Molecular Properties
	Aug 26		
	Aug 28		
2	Aug 31	2	Molecular Representations
	Sept 2		
	Sept 4		***** Quiz #1 – Assignment #1**
3	Sept 7	***	*** ***MONDAY*** *** ***LABOR DAY – HOLIDAY***
	Sept 9	3	Acids and Bases
	Sept 11		
4	Sept 14	4	Alkanes and Cycloalkanes
	Sept 16		
	Sept 18		******* Friday **** EXAM I – Assignment #2 (Chapters 1-4)***
5	Sept 21	5	Stereoisomerism
	Sept 23		
	Sept 25		
6	Sept 28	6	Chemical Reactivity and Mechanisms
	Sept 30		
	Oct 2		***** Quiz #2 – Assignment #3**
7	Oct 5	7	Alkyl Halides: Nucleophilic Substitution and Elimination Reactions
	Oct 7		
	Oct 9		
8	Oct 12		
	Oct 14		***** Wednesday ** EXAM II – Assignment #4 (Chapters 4-7)***
	Oct 16		
9	Oct 19	8	Addition Reactions of Alkenes
	Oct 21		
	Oct 23		
10	Oct 26	9	Alkynes
	Oct 28		
	Oct 30		***** Quiz #3 – Assignment #5**
11	Nov 2	10/11	Radical Reactions and Synthesis
	Nov 4		
	Nov 6		
12	Nov 9		
	Nov 11		
	Nov 13		****** Friday *** EXAM III – Assignment #6 (Chapters 7-11)***
13	Nov 16	12	Alcohols and Phenols
	Nov 18		
	Nov 20		
14	**Nov 23-27**		**** No New Instruction – feel free to review Ch1-12, to work ahead Ch 13-14* ****** THANKSGIVING HOLIDAY SHIFT off-campus***
15	Nov 30	14	Spectroscopy – IR (Infrared Spectroscopy) and MS (Mass Spectrometry)
	Dec 2		
	Dec 4	13	Ethers, Epoxides, Thiols, Sulfides (student to finish on his/her own, if time does not permit)
16	**Dec 7 Mon**		***Cumulative FINAL EXAM – Assignment #7 – via Sakai Assignments*** ***~~9:00 – 11:00 am, Flanner Auditorium, 133~~***