SYLLABUS – CHEM 223 off-semester – Organic Chemistry A – 1st Semester

Spring 2023 - LOYOLA UNIVERSITY CHICAGO (LUC)

Lecture:	#1674	**Section:**	001	**Tu + Thur**	**8:30 am – 9:45 am**	**Flanner – Auditorium**
Discussion:	#1675	**Section:**	002	Wed	8:15 am – 9:05 am	Flanner 105
	#1676	**Section:**	003	Wed	1:40 pm – 2:30 pm	Flanner 105
	#3573	**Section:**	004	Wed	2:45 pm – 3:35 pm	Flanner 105

*** *Please note that the University has scheduled this course to be taught and administered ON-CAMPUS – lectures, discussions, office hours, exams, and quizzes – NOT online, NOT by email, subject ONLY to changes mandated for public safety by the State of Illinois, the City of Chicago, and/or the University.*

Sr. Lecturer: Prof. C. Szpunar cszpuna@luc.edu Office: Flanner Hall **200B**

Student Office Hours: *typically available*: ***Tues and Thur: 10:30 am – 12:30 pm***
(additionally, Wed 9:15 – 10 am + Fri before 9:30 am, IF lecturer is available, IF lecturer is prepared for class, AND IF student schedule conflicts with regular office hours)

Required: (See bookstore for most up-to-date offerings, as publisher rep interacts directly with bookstore.)

1. Organic Chemistry, Klein, 3rd ed., Wiley, 2017, or 4th ed., Wiley 2021 – either edition acceptable, any format acceptable: hardbound, softbound, unbound – printed, 3-hole punched, or electronic version
2. Student Study Guide and Solutions Manual, Klein, 3rd ed. Wiley, 2017, or 4th ed., Wiley 2021 matched appropriately to accompany text version

Suggested / Recommended:

1. Molecular modeling kit, Darling, Duluth, or equivalent
2. WileyPlus online homework/practice tool: ***Course ID: TBA***

Optional Materials (found helpful by some students, **but students SHOULD NOT purchase immediately**); also, be sure to check Loyola University Chicago Library – Reserve Section for additional text resources.

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):*

>91% A, 91-90% a-, 90-88.5% b+, 88.5-75% B, 75-70% b-, 70-68.5% c+, 68.5-55% C, 55-50% c-, 50-45% D, <45% F

EXAMS – dates announced, may be curved, ***NO MAKE UPS – EXAMS*** **coordination mandate: 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 – dates announced ***NO MAKE UPS - QUIZZES*** **25%**

FINAL – date announced, scheduled by CAS, **no alt. date/time, *NO MAKE UPS*** **coordination mandate: 30%**
***** ***common-time (CAS mandated) and common-content (Chem Dept coordinated) FINAL EXAM***

***** ***Homework (HW)*** - per chapter, per topic, not assigned; student is 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 overall course grade.

*** Also please 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, conventional, step-by-step mechanisms for simple organic reactions.
4. discriminate amongst relative stabilities of reaction intermediates.
5. plan and write out effective, efficient, high-yield, multi-step syntheses using known reagents/conditions to transform functional groups and to add or remove carbons.
6. prepare for purification / separation / synthetic laboratory techniques for organic compounds.
7. analyze and interpret data from a combination of spectroscopic / analytical techniques used in separating and identifying organic compounds: IR, NMR, UV-vis, and mass spectrometry.

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

- Feel free to use your models at any time, even during a test or quiz. Many of us find a 3-dimensional (3D) representation helpful.
- Prepare for lectures by scanning the Klein-text headers and illustrations for the new material to be presented.
- Feel free to print out the Power-Point lecture highlights (via Sakai – Resources) before each lecture, to use for notetaking in lecture, to be ready to listen in lecture, to better acquire new concepts to be learned / applied.
- After lecture, read the corresponding text for enrichment. However, please note that **whatever is covered in lecture rules!** Use the text as a resource. We make adjustments, we fine-tune in lecture and in discussion.
- 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, nor unique, nor complete.
- Feel free to ask questions during discussion on homework problems or as yet-unassimilated lecture material, anything chemistry. Come prepared to do so!
- Explanations to HW problems or lecture concepts deemed particularly significant will be shared with all students, as appropriate, to the extent possible.

Academic Honesty: Essential, expected, and enforced. Be advised!!!

Upon student notification, dishonesty dictates consequences which will 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 and investigation.

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 .

As per the Aug. 6, 2021 CAS policy-and-procedures directives, students are hereby reminded: "that materials from the course cannot be shared outside the course without the instructor's *written permission.* Students may not be aware of copyright and intellectual property rights. As noted in various University communications … privacy … about recording of online class sessions" is mandated.

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

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 or discussions.

Study Strategies, Suggestions, and Warnings: Students should approach the study of Organic Chemistry in a manner similar to tackling a new foreign language. Persistent, continuing study will provide a basis to understanding future material – *building constantly, incessantly, and relentlessly* on the structural and mechanistic information presented previously and, hopefully, already acquired by the student. Over two semesters, this course will cover: bonding, functional groups, properties of aliphatic and aromatic compounds, nomenclature, structures, stereochemistry, reaction mechanisms, multi-step syntheses, and spectroscopic techniques. Because this course is cumulative and builds heavily on prior material, the best plan is to study Organic Chemistry regularly, every day, *similarly to practicing the piano, similarly to learning a language. "Organic Chemistry has its own language – Organese,"* according to Szpunar.

For study purposes, small student-formed study groups and **collaboration with others on HW problems is strongly encouraged**, especially in a timely fashion BEFORE an exam or quiz, to better understand and integrate the new material and in preparation for any assessment. "What one person sees, another person may see differently." Different perspectives, approaching and tackling a problem in different ways, from various angles, are often quite helpful to all involved in this sanctioned collaboration.

Experience has illustrated that positive outcomes (for exam and course grades) – the secret to any student's 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!!!

Experience has demonstrated that overnight cramming will probably NOT produce success! The student should scan the text chapter / segment to be covered BEFORE each lecture to improve lecture comprehension. After each lecture, careful detailed reading of the chapter/segment/topic and focused working of the homework problems are appropriate, necessary, essential, and expected**.**

*In 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 laboratory, 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 a student's second attempt, the student must secure approval for a third attempt. Students must contact the Chemistry & Biochemistry Department, request permission to register, and obtain a signature from the department to do so. Approval is also required from the student's Academic Advisor to secure final permission for the attempt.

Accommodations (SSWD/SAC):

Typically, normally, usually, any student requesting accommodation(s) for extra exam time, different test venue, special visual or hearing equipment, and/or other course accommodations / considerations should present his/her required SSWD/SSA letter to the lecturer, and discuss **in private**. Please do so by the second week of the regular term, but NOT later than 10 days BEFORE a scheduled exam, as per SSWD/SSA guidelines.

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 registered 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, when any such accommodation might be requested.

SAC Syllabus Statement

Please utilize the following statement in your syllabus regarding SAC, per Director B.Burns, May 23, 2022.

"Loyola University provides reasonable accommodations for students with disabilities. Any student requesting accommodations related to a disability or other condition is required to register with Student Accessibility Center (SAC), located in Sullivan Center, Suite 117. Professors receive the accommodation notification from SAC via Accommodate. Students are encouraged to meet with their professor individually in order to discuss their accommodations. All information will remain confidential. Please note that in this class, software may be used to record class lectures in order to provide equal access to students with disabilities. Students approved for this accommodation use recordings for their personal study only and recordings may not be shared with other people or used in any way against the faculty member, other lecturers, or students whose classroom comments are recorded as part of the class activity. Recordings are deleted at the end of the semester. For more information about registering with SAC or questions about accommodations, please contact SAC at 773-508-3700 or SAC@luc.edu."

*****Lecture Outline –** ***Klein Text Reference*** **– by Topic** (as adjusted for Klein 4th edition)

Week	*Date*	*Ch-Lect*	*Lecture Topic / Assignment / Activity*
1	Jan 16		**** Holiday – Martin Luther King Day ****
	Jan 17	1-1	Review – Gen Chem: Electrons, Bonds, Molecular Properties
	Jan 18		*Wed discussion*
	Jan 19	1-2	
2	Jan 24	2-1	Molecular Representations
	Jan 25		*Wed discussion*
	Jan 26	2-2	
3	Jan 31	3-1	Acids and Bases
	Feb 1		*Wed discussion –* ***Quiz #1***
	Feb 2	3-2	
4	Feb 7	4-1	Alkanes and Cycloalkanes
	Feb 8		*Wed discussion*
	Feb 9		****** Thursday *** EXAM I (Chapters 1-3)***
5	Feb 14	4-2	
	Feb 15		*Wed discussion*
	Feb 16	5-1	Stereoisomerism
6	Feb 21	5-2	
	Feb 22		*Wed discussion –* ***Quiz #2***
	Feb 23	6-1	Chemical Reactivity and Mechanisms
7	Feb 28	6-2	
	Mar 1		*Wed discussion*
	Mar 2		****** Thursday *** EXAM II (Chapters 4-6)***
8	*Mar 6 to Mar 11*		**** Spring Break Week *** MIDTERM BREAK ****
9	Mar 14	10-1	Radical Reactions (Alkanes to Alkyl Halides)
	Mar 15		*Wed discussion*
	Mar 16	7-1	… / Alkyl Halides
10	Mar 21	7-2	Alkyl Halides: Nucleophilic Substitution and Elimination Reactions
	Mar 22		*Wed discussion*
	Mar 23	7-3	
11	Mar 28	8-1	Addition Reactions of Alkenes **** last day to withdraw with a W*
	Mar 29		*Wed discussion –* ***Quiz #3***
	Mar 30	8-2	
12	Apr 4	9-1	Alkynes
	Apr 5		*Wed discussion*
	Apr 6	9-2 / 11	….. / Synthesis

Apr 7 to Apr 10 ***** Easter Break, Good Friday to Easter Monday *****

13	Apr 11	12-1	Alcohols and Phenols
	Apr 12		*Wed discussion*
	Apr 13		*** ***Thursday*** *** ***EXAM III*** ***(Chapters 7-11)***
14	Apr 18	12-2	
	Apr 19		*Wed discussion*
	Apr 20	14-1	Spectroscopy – IR and MS
15	Apr 25	14-2	
	Apr 26		*Wed discussion*
	Apr 27	13	Ethers, Epoxides; Thiols and Sulfides (student to finish on his/her own, if time does not permit)

16 ***May 3, Wednesday evening, 7 – 9 pm, after STUDY DAY ends***
Cumulative FINAL EXAM, location TBD, check Sakai Overview for updates, as announced in class, as mandated by CAS for all OC sections testing simultaneously

Chemistry Department Coordination ADDENDUM – Verbatim (Fall 2022)

1. **Letter Grade Cutoffs*:**

A	90.0%	C+	65.0%
A-	85.0%	C	60.0%
B+	80.0%	C-	55.0%
B	75.0%	D	40.0%
B-	70.0%	F	< 40%

*the final exam is mandatory to earn a passing grade

2. **Universal Absence Accommodation Policy**

The purpose of a universal absence accommodation policy is to account for emergency circumstances (e.g., serious illness, caring for a family member, car accident) that require you to be absent from class, while maintaining fairness in grading for students who attend and complete all in-class graded assignments. We believe that class attendance and participation are essential for your success in this class, and that your health is important to us and our shared community. Please use good judgement and stay home if necessary/prudent for your circumstances.
This is the universal accommodation policy for in-class graded assignments:

- One missed in-class exam due to absence for any reason is already accommodated in the course grading system. Given that only the best two in-class exams are included in this calculation, a missed exam would be the one not included in this calculation, as it would be the lowest score (0%) of the three exams.

You may provide documentation for an absence, but it is not required. These accommodations are automatically available to all students. (If you will require documentation for an absence, please modify this statement)

3. **Final Exam**

The University sets the schedule for all final exams. The final will be held on:
Wednesday December 3rd, 7:00pm
Location will be updated on LOCUS when available.
You will have exactly 2 hours to complete the exam. Additional time will not be granted, even if you start late. There will be no make-up final exams given under any circumstance, and the exam will not be given early, either.
Instructors may not reschedule final exams for a class for another day and/or time during the final exam period. There can be no divergence from the posted schedule of dates for final exams. 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 reports having four final examinations scheduled for the same date, students should be directed to e-mail a petition to Adam Patricoski, Assistant Dean for Student Academic Affairs, CAS Dean's Office (apatricoski@luc.edu).

The room for the Common Final has not been assigned at this time.

4. **Course Coordinator:** Dr. James Devery (Ph.D.) jdevery@luc.edu

Chemistry 223 is a multi-section lecture & discussion course with common content and common outcomes across all sections. This course includes a Final Exam during the Common Final Exam Period as scheduled by the University. The Course Coordinator is responsible for consultation and coordination with instructors regarding policies, exam writing, and grading. Your Section Instructor is responsible for communicating with you regarding all course content and policies and is the first and primary person you should contact with questions about all aspects of the course. As needed, all Section Instructors will consult with the Course Coordinator throughout the semester.

5. **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). The Department advises that it is preferable to complete a course with a grade of C or C-, and to demonstrate growth in future coursework, than to withdraw from a course.

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: https://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.

6. 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, which can be viewed at:
https://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.

Any instance of dishonesty (including those detailed on the website provided above or in this syllabus) will be reported to The Chair of The Department of Chemistry & Biochemistry who will decide what the next steps may be. Evidence of cheating in this course will result in, at a minimum, a score of zero (which cannot be dropped from grade calculations) and penalty up to failure of the course. College policies include that instructors will report incidents of academic misconduct to their chairperson as well as to the Assistant Dean for Student Academic Affairs in the CAS Dean's Office. I will report incidents to the Chemistry & Biochemistry Department for further action(s)**.**

7. Loyola University Absence Policy for Students in Co-Curricular Activities (including ROTC):

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 i.e., "Athletic Competition & Travel Letter" 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 to the professor in the first week of a semester. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to allow the student to take the examination at another time. (https://www.luc.edu/athleteadvising/attendance.shtml)

Students who will miss class for an academic competition or conference must provide proper documentation to their instructor as early in the semester as possible.

8. Accommodations for Religious Reasons

If you have observances of religious holidays that will cause you to miss class or otherwise effect your performance in the class you must alert the instructor ***within 10 calendar days of the first class meeting of the semester*** to request special accommodations, which will be handled on a case by case basis.

9. Class Recording & Content Information

In general, lectures and discussions may NOT be recorded by students – lecturer's prerogative. Exception: As per SSWD/SSA guidelines and federal ADA guidelines, requesting/identified students may record upon prior authorization for self use only.

10. Privacy Statement

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, **recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member** and students registered for the course, and only during the period in which the course is offered. **Students will be informed of such recordings** by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. **Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use**.

11. Additional Content, Copyright & Intellectual Property Statement

By default, students may not share any course content outside the class without the informed written consent of the owner of that content. This includes any additional recordings posted by students, materials provided by the instructor, and publisher-provided materials. For example, lectures, quiz/exam questions, book figures/slides, and videos may not be shared online outside the class. In some cases, copyright/IP violations may overlap with breaches of academic integrity. Remember that obtaining consent to share materials is an active process.

12. Pass/Fail Conversion Deadlines and Audit Policy

A student may request to convert a course into or out of the "Pass/No-Pass" or "Audit" status only within the first two weeks of the semester. For the Fall 2022 semester, students are able to convert a class to "Pass/No-Pass" or "Audit" through Monday, September 12th. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

13. 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.***

Where ambiguity or overlap or redundancy occurs, please see lecturer privately for clarification.