

## CHEM 223 Syllabus – Organic Chemistry A

The purpose of this syllabus is to describe the course, resources, and policies. It is meant help all students understand the expectations and requirements for the course, and it should be used as a reference for questions about policies. When updates to the syllabus are made during the term, a new version will be posted electronically, and all students will be notified.

**Course:** Chemistry 223 – Organic Chemistry A (3 credits: Lecture & Discussion)  
**Prerequisites:** Completion of Chemistry 102/106 & Math 118 with a grade of C- or better.  
 A student missing a prerequisite may be withdrawn at any time.  
**Time Zone:** This syllabus lists dates/times using Chicago local time (U.S. Central Time Zone)  
**In-Person Learning:** All graded assignments scheduled during class time are available in class only.

**Lectures:** Mon/Wed 4:15-5:30 PM Flanner FH-105 CHEM 223-015 (2991)  
**Discussions:** Wed 5:45-6:35 PM Flanner FH-105 CHEM 223-016 (2992)

**Section Instructor:** Daniel P. Becker, Ph.D.  
**Office:** Flanner Hall FH-217A  
**Email:** [dbecke3@luc.edu](mailto:dbecke3@luc.edu)  
**Office Hours:** Mondays 1:30-2:30 PM in Flanner 217A or via appointment.  
 Appointments may be made to meet in person or via Zoom ID 235 110 7365.

**Course Coordinator:** Dr. James Devery, Ph.D. [jdevery@luc.edu](mailto: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 Common 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.

### Supplemental Instructor (SI): Lleyton Choyna

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 while it is voluntary, it is extremely beneficial for those who attend weekly. Times and locations for the SI session can be found here: [www.luc.edu/tutoring](http://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 who 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 arrive with their Loyola ID number, lecture notes, and textbook.

### Required Course Materials

*Required Text:* Organic Chemistry, Klein, 4<sup>th</sup> or 3<sup>rd</sup> Edition (print or eText)  
*Required SSM:* Organic Chemistry, Klein, 4<sup>th</sup> or 3<sup>rd</sup> Edition, resp., Student Solutions Manual (SSM)  
 Make sure you have a matching pair, both 4<sup>th</sup> Ed. or both 3<sup>rd</sup> Ed.

Print 4<sup>th</sup> Ed. 1) Klein, Organic Chemistry 4th Edition Loose-Leaf text, ISBN 978-1119659594  
 2) Klein, Organic Chem 4th Ed. Solution Manual (SSM), ISBN 978-1119659587

Print 3<sup>rd</sup> Ed. 1) Klein, Organic Chemistry 3rd Edition Loose-Leaf text, ISBN 978-1119340577  
 2) Klein, Organic Chem 3rd Ed. Solution Manual (SSM), ISBN 978-1119378693

E-text If you prefer, you can purchase an e-text that includes both book and SSM at:  
<https://www.vitalsource.com/products/organic-chemistry-integrated-e-text-with-david-r-klein-v9781119776741>

**Recommended:**

Any organic molecular model kit. Here are just a couple of options.

- Duluth Labs MM-005 Student Set at <https://duluthlabs.com/products/mm-005-organic-chemistry-molecular-student-set>
- Molecular Visions Organic Model Kit (#3) [Molecular Model Kits](#)/KIT #3 ISBN 978-09648837-4-1 --MOLECULAR VISIONS Organic Kit

**Extra Resources**

*WileyPlus online module (can be purchased separately); with eText and answers to all problems, can substitute for the answer key (SSG/SM)*

*Organic Chemistry as a 2<sup>nd</sup> Language I (1<sup>st</sup> semester topics), David R. Klein*

*Organic Chemistry as a 2<sup>nd</sup> Language II (2<sup>nd</sup> semester topics), David R. Klein*

*Pushing Electrons* by Daniel Weeks a workbook for extra help with *mechanisms*

**Course Content & Learning Outcomes**

Topics will include nomenclature, structures, properties, reactions, mechanisms and synthesis of alkanes, alkyl halides, alkenes, alkynes, alcohols and ethers; study of molecular structure, geometry, and properties; functional groups; reactive organic species; stereochemistry; spectroscopy; spectrometry. If successful, the student will be able to:

1. identify the various classes of organic compounds, their methods of preparation, and typical reactions.
2. name and draw specific organic compounds.
3. visualize and interpret multiple representations of organic molecules depicting connectivity, configuration, and conformations.
4. postulate logical reaction mechanisms for organic reactions.
5. discriminate among relative stabilities of reactive intermediates.
6. plan and write out single and multi-step syntheses using known reagents and conditions.
7. identify and compare general physical properties of organic compounds.
8. analyze, interpret, and predict spectral data (MS, IR, NMR) used in identifying organic compounds.
9. describe and analyze how organic chemistry affects the way we live and die.

*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).

**Student Accommodations**

Loyola University Chicago provides reasonable accommodations for students with disabilities. Any student requesting accommodations related to a disability or other condition is required to register with the Student Accessibility Center (SAC). Professors will receive an accommodation notification from SAC, preferably within the first two weeks of class. 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 audio record class lectures in order to provide equitable 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](mailto:SAC@luc.edu).

**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.

### **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, submitting false documents, and deliberately disrupting the performance of other class members. Standards apply to both individual and group assignments.

An instance of academic misconduct (including those detailed on the website provided above or in this syllabus) will be reported to the Department Chair and the academic Dean's office. A violation will result in a grade of 0 for the assessment/exam/assignment.

### **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/athletheadvising/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.

### **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.

### **Other Items**

- A link to the official Loyola calendar can be found here: <https://www.luc.edu/academics/schedules/>
- The Withdraw deadline for the semester is on Friday, November 3.
- Loyola uses SmartEvals to provide instructor & course feedback. OIE will send emails near end of the term.

## **Class Recording & Content Information**

In general lecture, meetings may be recorded. The following is a mandatory statement for all courses in the College of Arts & Sciences (CAS). We will discuss class norms and standards during the first week and continue the discussion as needed throughout the semester.

### **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.

### **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.

### **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 2023 semester, students can convert a class to "Pass/No-Pass" or "Audit" through Monday, September 11th. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

### **Final Exam**

The University sets the schedule for all final exams. The final will be held on:

**Thursday, December 14<sup>th</sup>, 7:00 PM**

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](mailto:apatricoski@luc.edu)).

### **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:

- Missed in-class exams due to absence for any reason will result in the final exam counting proportionately more.

## Course Grading System

The standards for each letter grade are listed here according to all required course components. Each student will receive a midterm grade via LOCUS at least one week prior to the Withdraw deadline for the semester. Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

### Grading Scheme (Modify highlighted as needed)

Homework	10%
Unit Exams	60% (3 midterm exams X 20% each)
Final Exam	30%*
Total score	100%

\*Taking the final exam is mandatory to earn a passing grade

### Letter Grade Cutoffs

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

### 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.***

### Course Topics

- Chapter 1: Review
- Chapter 2: Drawing Molecules
- Chapter 3: Acids & Bases
- Chapter 4: Alkanes and Cycloalkanes
- Chapter 5: Stereochemistry
- Chapter 6: Chemical Reactivity & Mechanisms
- Chapter 7: Alkyl Halides
- Chapter 8: Alkenes
- Chapter 9: Alkynes
- Chapter 10: Radicals
- Chapter 11: Total Synthesis
- Chapter 12: Alcohols
- Chapter 13: Ethers
- Chapter 14: IR and MS

**Organic Chemistry 223 Tentative Schedule (subject to change)**

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	8/28 Ch 1: Gen Chem Review	8/29	8/30 ...Ch 1...	8/31	9/1
2	9/4 <b>Labor Day</b> <b>No classes</b>	9/5	9/6 Ch 2: Molecular Representations	9/7	9/8
3	9/11 Ch 3: Acids & Bases	9/12	9/13 ...Ch 3...	9/14	9/15
4	9/18 Ch 4: Alkanes & Cycloalkanes	9/19	9/20 <b>Midterm I Ch 1-4</b>	9/21	9/22
5	9/25 Ch 5: Stereoisomerism	9/26	9/27 ...Ch 5...	9/28	9/29
6	10/2 Ch 6: Reactivity & Mechanisms	10/3	10/4 ...Ch 6...	10/5	10/6
7	10/9 <b>Mid-semester</b> <b>Break</b>	10/10 <b>Mid-semester</b> <b>Break</b>	10/11 Ch 7: Subst/Elim Alkyl Halides	10/12	10/13
8	10/16 ...Ch 7...	10/17	10/18 <b>Midterm II Ch 1-7</b>	10/19	10/20
9	10/23 Ch 8: Alkene Additions	10/24	10/27 ...Ch 8...	10/26	10/27
10	10/30 Ch 9: Alkynes	10/31	11/1 ...Ch 9...	11/2	11/3
11	11/6 Ch 10: Radical Reactions	11/7	11/8 ...Ch 10...	11/9	11/10
12	11/13 Ch 11: Synthesis	11/14	11/15 <b>Midterm III Ch 1-11</b>	11/16	11/17
13	11/20 Ch 12: Alcohols & Phenols	11/21	11/22 <b>Thanksgiving</b> <b>Break</b>	11/23 <b>Thanksgiving</b> <b>Break</b>	11/24 <b>Thanksgiving</b> <b>Break</b>
14	11/27 Ch 13: Ethers & Epoxides & Sulfur	11/28	11/29 ...Ch 13...	11/30	12/1
15	12/4 Ch 14: IR & MS	12/5	12/6 ...Ch 14...	12/7	12/8
16	12/11	12/12	12/13 <i>Study Day</i>	12/14 7-9 p.m. <b>Final Exam</b> Cumulative Ch 1-14	12/15