

## Syllabus – Organic Chemistry I (Lecture)

The purpose of this syllabus is to describe the course, resources, and policies. It is meant to help all students understand the expectations and requirements for the course, and it should be used as a reference when questions about policy arise during the semester. When updates to the syllabus are made during the semester, a new version will be posted electronically, and all students will be notified. By design, some policies are incomplete in the first version of the syllabus and must be updated. Additional changes will be made if and when it becomes necessary for the entire class.

### Course Information

**Course:** Chemistry 221 – Organic Chemistry I (4 credits: Lecture, Discussion, & Lab)

**Prerequisites:** A completion of Chemistry 106 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 A student missing a prerequisite may be withdrawn at any time.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)

**Lectures:** MoWeFr 4:10PM–5:00PM (221 - 001) in Life Science Building 142

**Discussions:** You must attend the section for which you registered:

- Tu 11:30AM (002) in Dumbach 223
- Tu 1:15PM (003) in Institute of Environmental Sustainability 111

**Labs:** You must participate in the section for which you registered:

- We 5:50PM (004) in Life Science Building 115
- Th 11:30AM (005) in Life Science Building 115

**Instructor:** *Lecture & Discussion:* Dr. James Devery (Ph.D.)  
*Lab:* Mr. Timothy Thomas

### Instructor Contact Information

**Office:** Flanner Hall 215

**Email:** [jdevery@luc.edu](mailto:jdevery@luc.edu)

**Email timing:** In most cases I will be able to respond within 24 hours Monday-Friday when classes are in session. You are encouraged to use Office Hours to get immediate answers to your questions, and to use your classmates as resources for help. You are welcome to email me in the evenings/nighttime, and you can expect a response sometime during the next day.

**Slack:** [chem221f21.slack.com](https://chem221f21.slack.com)

**Office Hours Policy:** Office hours (OH) are one of the Resources for Help, available to give students a regular set of times every week to have access to talk to Devery outside of scheduled classes. For regular, online OH, just show up! Bring your questions, fully or partially formed, anytime during the times listed. Coordinate with a classmate to come with you or meet your classmates during OH to work through Orgo together. All students are encouraged to attend OH regularly to ask questions or to discuss any issues that arise during the semester. Private conversations can occur by request, but please, just show up!

**OH Schedule:** **TBD.** Additional times may be announced as needed, and updates will always be posted on Sakai Resources for Help. A limited number of short, individual appointments are available on Fridays via Sakai Sign-up. Occasional Sunday afternoon hours will be held online and the schedule will be updated weekly. You are welcome to ask about additional availability for “drop-ins” online.

### TA Information

Our teaching assistant (TA) for the course is **Ms. Wiktorja Koza**, a PhD student in the department. Wiktorja’s teaching contributions will include assisting during the Lecture and Discussion classes. Contact Wiktorja via email at: [wkoza@luc.edu](mailto:wkoza@luc.edu)

### SI information

There are online Supplemental Instruction (SI) study sessions available for this course. SI sessions are led by an SI leader, **Mr. Graden Snyder**, 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 on Sakai Resources for Help. 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

- Textbook: [WileyPlus](#): Organic Chemistry, Klein, David, 4th edition; eText or hard copy.
- Online homework: [WileyPlus](#), see Sakai for additional information and recommendations
- Loyola Sakai course management site: [sakai.luc.edu/portal/](http://sakai.luc.edu/portal/) and tools integrated into the site
- Loyola email: messages are sent to the entire class via Sakai, linked to your Loyola email account
- Additional web-based systems will be used for uploading your work and facilitating feedback and evaluation. Registration will be free but required. These may include [Gradescope](#), [Slack](#), and other sites.
- Additional software will be used. Downloads will be free but required. These may include applications that convert photos to pdfs (examples: CamScanner, Scannable, GeniusScan), and collaboration materials for group work (example: OneNote).

**Copyright/Intellectual Property reminder:** Course materials provided by your instructors at Loyola, including my materials, may not be shared outside any course without the instructor's **written permission**. Content posted without permission will be in violation of Copyright/Intellectual Property laws.

### Course Description

*“Prerequisites: CHEM 106. Chemistry and Biochemistry majors only.”*

*“A lecture, discussion and laboratory course for chemistry majors covering structure and bonding in organic molecules; nomenclature, chemical and physical properties and reactions of non-aromatic hydrocarbons, alkyl halides, alcohols, ethers; stereochemistry and conformational analysis; and spectroscopy.”*

*“Outcome: Students will understand the chemical behavior of organic molecules and the mechanisms of reactions.”*

### Class Attendance & Course Coverage

You will have the chance to introduce yourself to multiple classmates early in the course. Our actual pace may vary from the tentative schedule posted on Sakai / Resources folder. If you miss a class for any reason, it is your responsibility to work through the content, and I also suggest you contact a classmate for further discussion of the topics as you are still responsible for all material covered and assigned. I do not have published lecture notes. Slides/handouts/links/animations and other additional resources will be shared either in person or on Sakai.

We are covering the course topics in a more traditional (structure-first) order compared to how topics are listed in your textbook. To help you stay on track, pre-lecture readings will be posted and continually updated on the Sakai overview page for this course. Required Pre-lecture Homework objectives are assigned and continually updated in WileyPlus. Post-lecture Highly Recommended problems for additional daily practice will be continually updated online.

We will not cover every topic in every chapter of the textbook this semester, but the material will usually come from everything in Chapters 1-14. Focus first on the material that is directly covered in lecture time and assigned or recommended. Explore the additional material in the textbook for your own interest and enrichment.

### Classroom & Group Work Guidelines

The classroom is a space designed for learning. My expectations are that all voices will be heard and appreciated in the classroom, and that we will invite each other to engage while recognizing that contributions can take multiple forms.

### Student and Faculty Expectations

I expect you to take ownership of your learning and to use the TA and SI support as learning resources to help you reach your desired level of achievement in the course. For this course, it is anticipated that the average independent working time (outside of class) required to learn the material in order to achieve a minimal passing grade of C- is 1-2 hours per day, every day, but your needs will also vary depending on your prior knowledge and ability to master cumulative concepts in the course material as the semester progresses.

What can you expect of me? My primary goals are to provide you with the tools, environment, encouragement, and support to learn Organic Chemistry. Because the course objectives are based on what students will learn, my teaching techniques include the use of pre-lecture homework, active learning, and metacognition to help you maximize your learning. I expect that all of us will work together!

**Student Accommodations**

The Student Accessibility Center (formerly known as Services for Students with Disabilities), Sullivan Center (773.508.3700), <http://www.luc.edu/sac>, has the mission “to support, service, and empower Loyola University Chicago students with disabilities” and to “Partner with faculty and staff to provide opportunities for collaboration, professional development, personal growth, and staff interaction, as they relate to students with disabilities.” Please direct all questions concerning accommodations of disabilities to the Student Accessibility Center. Academic accommodations afforded to students require documentation and review. The Student Accessibility Center will issue accommodation letters for registered students. Students with testing accommodations will submit all test requests via Accommodate at least seven days in advance. If students' accommodations involve attendance or deadlines, instructors and students will jointly complete and execute an Agreement Form articulating their terms. See <https://www.luc.edu/sac/faculty/facilitatingaccommodations/> for guidance about implementing various kinds of accommodations in a way that is appropriate. The Student Accessibility Center stands ready to work with you.

**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).

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 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**

You are encouraged to study with other students in and out of class, however, anything submitted for an individual grade during or outside of class must represent your own knowledge and understanding of the material. At times you may have questions about what level of collaboration is consistent with honest work, especially for group work or activities completed outside of class: when this happens, please ask! For the Undergraduate Catalog statement on academic integrity, visit: [http://www.luc.edu/academics/catalog/undergrad/reg\\_academicintegrity.shtml](http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml). The following is a brief excerpt: Academic integrity is the pursuit of scholarly activity in an open, honest, and responsible manner. Academic integrity is a guiding principle for all academic activity at Loyola University Chicago, and all members of the University community are expected to act in accordance with this principle. The College of Arts & Sciences (CAS) also has a full statement, linked here: <https://www.luc.edu/cas/advising/academicintegritystatement/>. 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 Chair of the Chemistry & Biochemistry Department who may take further action.

**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 5.
- Loyola is using SmartEvals to provide instructor & course feedback. OIE will send emails near the end of the term.
- Additional resources, advice, and suggestions for success (from multiple sources) will be posted/updated on Sakai.
- On a strictly limited and pre-approved basis, a student may be allowed to miss a class in order to participate in a University-sponsored event (e.g., official athletic games). It is the student's obligation to inform the instructor of such an authorized absence in a timely fashion; in most cases, this information can be made available to the instructor at the beginning of the semester. Absences will be discussed face-to-face after documentation is received.
- Accommodations for religious reasons will be considered if the request is made to the instructors face-to-face within the first two weeks of the semester. Absences for religious observances will be discussed face-to-face within the first two weeks of the semester.

## 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.

### Class Etiquette

"...treat people the way they want to be treated..."

"Be curious, not judgmental." – Walt Whitman

Come to class on time.

Mute electronic devices.

Students with multiple violations of classroom etiquette will be subject to SSM deductions throughout the semester.

### Final Exam Period

The University sets the schedule for all final exam periods and has updated the schedule for Fall 2021. The final period for Chem 221 will be held on: Friday December 17th, 5:30pm.

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)).

## Course Grading System

### Design

The goal of this grading system is to:

1. Allow you to understand what the requirements are for each letter grade so that you can choose what level of academic achievement to pursue in this course.
2. Provide a challenging but flexible learning environment. The standards for demonstrating your Mastery of the course material are high in each area, but the methods for meeting the standards are designed to give you the opportunity to improve the quality of your work throughout the semester.
3. Encourage you to learn from mistakes. Learning involves hard work and reflection on your learning. Chemistry is a cumulative subject where the new topics build on prior knowledge and this system is designed for cycles of learning.

### Standards

The table shown here lists the standards for each letter grade according to all required course components, listed in columns. **You must meet or exceed the standard in each category to earn the corresponding letter grade.** *Standards are not averaged.* Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

|   |   |  |
|---|---|--|
| <b>A</b>  |   | <b>A-</b>  |
| SSM Mastery + Proficiencies: 18 + 2<br>FOs: ≥23 Mastered<br>Group Quizzes: ≥8<br>Quiz Keys: 3<br>WileyPlus: ≥90%<br>Lab: ≥90% |   | SSM Mastery + Proficiencies: ≥16 + 3<br>FOs: ≥22 Mastered<br>Group Quizzes: ≥8<br>Quiz Keys: 3<br>WileyPlus: ≥90%<br>Lab: ≥90% |
| <b>B+</b>   | <b>B</b>  | <b>B-</b>  |
| SSM M + P: ≥14 + 4<br>FOs: ≥21<br>Group Quizzes: ≥7<br>Quiz Keys: 2<br>WileyPlus: ≥80%<br>Lab: ≥80%                           | SSM M + P: ≥12 + 4<br>FOs: ≥21<br>Group Quizzes: ≥7<br>Quiz Keys: 2<br>WileyPlus: ≥80%<br>Lab: ≥80% | SSM M + P: ≥10 + 5<br>FOs: ≥21<br>Group Quizzes: ≥7<br>Quiz Keys: 2<br>WileyPlus: ≥80%<br>Lab: ≥80%                            |
| <b>C+</b>   | <b>C</b>  | <b>C-</b>  |
| SSM M + P: ≥8 + 5<br>FOs: ≥20<br>Group Quizzes: ≥6<br>Quiz Keys: 1<br>WileyPlus: ≥70%<br>Lab: ≥70%                            | SSM M + P: ≥6 + 6<br>FOs: ≥20<br>Group Quizzes: ≥6<br>Quiz Keys: 1<br>WileyPlus: ≥70%<br>Lab: ≥70%  | SSM M + P: ≥4 + 6<br>FOs: ≥20<br>Group Quizzes: ≥6<br>Quiz Keys: 1<br>WileyPlus: ≥70%<br>Lab: ≥70%                             |
|   | <b>D</b>  |  |
|   | SSM M + P: ≥0 + 6<br>FOs: ≥10<br>Group Quizzes: ≥4<br>Quiz Keys: 0<br>WileyPlus: ≥50%<br>Lab: ≥50%  |  |

**F**

Fail to meet the minimum requirements for a **D**

**Lab**

Your lab grade earned under Mr. Thomas.

**WileyPlus Homework**

The purpose of these assignments is to help all students keep pace with the class by preparing ahead for each class. You will get as much benefit from these assignments as you choose to put forth in your effort to solve the problems on your own. There will be multiple required assignments per week, always due before lecture, posted before/after each class. Assignments will be submitted completely online with the individual grading policy listed with each assignment. Most of these assignments will allow you to reset as many times as needed to achieve full credit, half credit, or for additional practice.

**Group Quizzes**

Weekly, completed in small groups, which will be assigned by Devery. The purpose of working challenging problems as a group is to help you learn via cooperation, communication, and support among your classmates as you push the limits of your knowledge. You are required to attend your Discussion to work with your assigned group. Each group submits one copy of their work by the end of the discussion period. Group quiz content will include challenging free-response problems at the level of the FOs/SSMs to help you prepare for the grading standards upon which you will be tested individually. There are no make-up quizzes.

### Quiz Keys

Periodically, groups will be assigned by Devery to write Answer Keys for the Group Quiz to be provided to the class. Quiz Keys will be worked outside of class, and your group has one chance to submit a correct key for each assigned quiz by the specified deadline.

### Foundational Objectives (FOs)

These objectives are essential to your long-term success in both semesters of organic chemistry as well as biochemistry. The purpose of testing is to align your course grade with your level of learning, based on your mastery of these specific FOs. A list of FOs will be released with each unit as we progress through the material. FOs will be scored as **Mastered** or **Not Mastered**. A score of Mastered is earned for correctness and completeness of the problem(s). The standards for earning Mastery will be high. Translation: **there is no partial credit**. Each FO counts equally toward your grade at the end of the semester. You will have multiple chances to demonstrate mastery of all the FOs during the semester: for example, if you receive a score of Not Mastered for any FO on the first exam (or if you choose not to attempt a FO), you can try again to earn a score of Mastered for that FO on the next exam. Because you will have more than one chance to master the FOs, you will also be able to choose when to work towards attempts at FOs during the course.

### Spectroscopy/Synthesis/Mechanisms (SSMs)

The purpose of testing is to align your course grade with your level of learning, based on your mastery of topics that require skills from multiple FOs to complete. The purpose of SSMs is to allow you to demonstrate your higher-level skills of applying and analyzing, requiring you to go beyond memorization of facts and processes and transfer your understanding of essential course concepts to new scenarios. A list of SSMs will be released with each unit as we progress through the material. SSMs will be scored as **Mastered** or **Not Mastered**. A score of Mastered is earned for correctness and completeness of the problem(s). The standards for earning Mastery will be high. Translation: **there is no partial credit**. Each SSM counts equally toward your grade at the end of the semester. Each round of testing on SSMs will be followed by opportunities to earn **Proficient** for **Not Mastered** work by a specified deadline. Submissions for Proficiency will earn reattempts of SSMs. Reattempts will take place with the next test.

### 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