

## Syllabus – Advanced Organic Chemistry III: Reaction Mechanisms

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 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 395/422 – Advanced Organic Chemistry III: Reaction Mechanisms (3 credits)

**Prerequisites:** A completion of Chemistry 222 or equivalent 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 A student missing a prerequisite may be withdrawn at any time.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 2:50PM–3:40PM (422 - 001) in FH 129.

**Online Meetings via Zoom:** Login to Sakai to access the [Zoom tool](#) within our course site, you must be 'authenticated' or signed in to join a class Zoom meeting.

**Instructor:** Dr. James Devery (Ph.D.)

### 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.

**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:** Zoom link (click to join, must authenticate / login to your account)

**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 on campus and the schedule will be updated weekly. You are welcome to ask about additional availability for "drop-ins" online.

### Required Course Materials

- 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 will include ChemDraw and PowerPoint.

**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 222/224."*

*"This is an intensive review of the more general types of organic chemical mechanisms, such as electrophilic and nucleophilic additions, substitution reactions, elimination processes, and homolytic processes. The experimental approach to mechanisms is emphasized."*

**Class Attendance & Course Coverage**

You will have the chance to introduce yourself to multiple classmates early in the course. 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.

**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 my support as learning resources to help you reach your desired level of achievement in the course. What can you expect of me? My primary objectives are to provide you with the tools, environment, encouragement, and support to learn Organic Mechanisms at the level of a professional chemist. Because the course objectives are based on what students will learn, my teaching techniques include the use of literature-based research, presentation, 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.

**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: you will be notified when the recording begins and be able to access recordings via the Panopto function in Sakai. 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 MM 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 422 will be held on: Thursday December 16th, 1:00pm.

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 column to earn the corresponding letter grade.** *Standards are not averaged.* The lowest value column determines your grade. Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

	A	A-	B+	B	B-	C+	C
<b>Exam Mastery</b>	≥16	≥14	≥12	≥10	≥8	≥6	<b>Fail to meet C+ Spec</b>
<b>Exam Proficiency</b>	≥1	≥2	≥3	≥4	≥5	≥4	
<b>Final Presentation</b>	≥A-Spec		≥B-Spec			≥C-Spec	
<b>Name Reaction Talks</b>	≥9					≥7	
<b>Class Problems</b>	≥18					≥14	

### Mastery Exams

The purpose of the exams is to align your course grade with your level of learning, based on your mastery of specific mechanisms. The Mastery Mechanisms (MMs) are all related to the mechanisms discussed in class. The purpose of these 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. MMs will be scored as **Mastered** or **Not Mastered**. A score of Mastered is earned for correctness and completeness of the problem. The standards for earning Mastery will be high. Translation: **there is no partial credit**. Each MM counts equally toward your grade at the end of the semester.

Each round of testing on these objectives will be followed by opportunities to earn **Proficient** for **Not Mastered** work by the specified deadline. Submissions for Proficiency will earn reattempts of MMs. Reattempts will take place with the next test.

### Name Reactions

The purpose of these assignments is multi-fold. 1) Professional chemists research topics on which they will be working using the chemical literature, internet databases, etc. 2) Professional chemists internalize information researched into an actionable set of information that allows them to solve complex problems. 3) Professional chemists must communicate their findings to other chemists to turn a “quirky obsession” into research. These presentations will be evaluated based on whether or not they meet or surpass a minimum set of specifications.

### Class Problems

In the class meeting after each Name Reaction, you will be required to bring two mechanism problems for your classmates that are representative examples of the name reaction. The idea is to assist your classmates in reaching the level of mastery have earned via writing the presentation.

### Final Presentation

At the end of the semester, you will give a 45-minute seminar on a topic you choose from a pre-approved list. Your topic seminar will be at the level of those given in the Chemistry & Biochemistry Department Seminars. These presentations will be evaluated based on whether or not they meet or surpass a minimum set of specifications.

### 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.**