Chemistry 223-011 – Fall 2021 – Syllabus

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 and discussion
Prerequisites: Chemistry 102 or 106 – a student missing a prerequisite may be withdrawn at any time
Classes: MWF, 2:50-3:40 pm, Dumbach 118; and Thursdays, 3:00-3:50pm, Flanner 007

Instructor & Contact Information

Dr. Sandra Helquist (Ph.D.), Flanner Hall 200-B (shared office suite)

Email policy: if you are emailing me about this course, you may either: (1) reply directly to one of my messages, which are sent via Sakai and therefore automatically labeled with our course number or (2) type "Chem 223" in the subject line of your email (and nothing else) and send to shelquist@luc.edu. Doing either of these will ensure that I read your message and reply within 24 hours Monday-Friday or 48 hours on weekends during this term. You are welcome to email me in the evenings/nighttime – I never have email notifications activated – and the same response times will apply.

Office Hours policy: *You are welcome to stop by at any time* to see if my door is open and check my posted schedule. Occasional extra hours may be announced in class. For regular OH, just show up!! Bring your questions anytime during the times listed. Bring a classmate with you or meet your classmates there to work together & get feedback & help.

In the STEM Center St. Joseph Hall, Cafeteria: TBA
In the Flanner 200 office suite: Tuesdays, 3-4pm and Thursdays, 10-11am

A limited number of 10-minute individual Zoom appointments will be available on Fridays via Sakai Sign-up section. Occasional Sunday afternoon hours will be held, see Sakai Resources for Help for weekly updates

Course Materials

Organic Chemistry, Klein, 4th edition, hard copy or eText (Required); WileyPlus online (Required) Highly recommended: Molecular Modeling Kit. Daily access to Loyola email, Sakai site sakai.luc.edu and WileyPlus are also required to receive communications, and to access course materials, assignments, and scores. Calculators are not used. We also use Gradescope (Required, www.gradescope.com) and you will receive registration information via email. Additional electronic resources may be used and registration will be free but required as needed.

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.

Supplemental Instruction (SI) Tutoring

There are online Supplemental Instruction (SI) study sessions available for this course. SI sessions are led by an SI leader, Lauren Kempf, 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 will be posted 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. For questions, please contact: tutoringcenter@luc.edu.

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. Please contact me as needed to discuss any issues.

Expectations

I expect you to show up on time for each class and to come prepared, having kept up with the material by working homework, reading in the textbook and accessing resources for help. I expect you to use class and office hours to learn the material by engaging with classmates and asking questions. You will need to contact a classmate for notes, topics, sections, covered if you miss a class. Make-up assignments are not available in this course. Be courteous: save electronic messaging for after class. Plan your schedule so you have at least 10 hours per week outside of class for reading, working problems, asking questions, i.e, studying (learning) the material on a Daily Basis. You may require additional hours spent per week depending on prior preparation for this course. Make time (1-2 hours) for this course every day: do not count on cramming on weekends or just the days or week before testing as you will be much less likely to master the course objectives.

Student Accommodations

The Student Accessibility Center, 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. 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 Chemistry & Biochemistry Department for further action(s).

Fall 2021 Masking Requirement

It is Departmental policy that, in the event the University relaxes its universal requirement for indoor mask wearing during the semester, it will remain a principle of this class section that, out of respect for the health of housemates and others in regular contact with members of our community, in this class we properly wear masks at all times, e.g. over nose and mouth.

Returning to campus

Please be familiar with and adhere to all guidelines posted on the *On-Campus Guidelines in Classroom Scenarios of the Return to Campus Guidelines* site: (https://www.luc.edu/returntocampus/classroomscenarios/)

Class Recording & Content Information

In general classes, 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, assignment/test 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.

Final Exam

The University sets the schedule for all final exams. The final will be held on: Thurs Dec. 16th, 8:00pm, Location TBA
You will have 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).

Best Practices & Suggestions for Success: Preparation, Practice, Self-Assessment

Students often ask me, "How do I get a/an (fill in grade of choice here) in this class?" The answer is simple (see the grading policy for the course), but the process of learning is challenging and can even be uncomfortable as you are pushed to expand the boundaries of your knowledge and abilities. Grades are earned based on how well you demonstrate mastery of the Course Content and Learning Outcomes listed on Page 1 of this syllabus. Please read carefully and completely – and ask questions if you are not sure how/when we are working toward these and the more specific objectives in class. Required preparation includes pre-lecture reading assignments to correlate with required practice which includes the WileyPlus assignments online and the Group Assignments. Very Highly Recommended: active participation during classes (problem-solving, asking/answering questions, taking notes for follow-up), using additional resources for critical self-assessment – working extra problems – in WileyPlus and from your textbook, and during SI sessions. The required homework assignments include the minimum amount of preparation you will need pre-lecture; almost all students will need additional pre- and post-lecture practice with the material in order to achieve a satisfactory level of learning (in order to earn a passing course grade). Reading the textbook is not sufficient, reading solutions to problems is not sufficient: watching other people solve problems is not sufficient: you must solve problems and answer questions individually, without the aid of notes, textbook, google, tutors, solution manuals. What does this mean? You should study (learn) every day by answering questions: practicing until you can rapidly recognize problem types, state the concept(s) being addressed in any question (say it out loud to yourself when practicing), identify subtle differences between problems and correct your own mistakes. This amount of practice usually starts with the aid of your book and other resources, but must conclude with you correctly solving problems without any help – and knowing immediately why your answer is correct. When you cannot differentiate problem types, ask for help. When you cannot find and correct your mistakes, and when you do not understand the difference between your answers and posted solutions, ask for help. Study on your own and with classmates who will quiz you on mixed problems types so that you learn to expect the unexpected and do not learn to rely on brute force memorization or on your notes/book/other every time you encounter an unfamiliar problem type. The purpose of homework problems is to help you learn the material but this requires critical self-assessment as you work: you must know how completely you are learning the material so you may properly evaluate your competency prior to testing. You have many Resources for Help available, in and out of the classroom, at Loyola, and the grading system for this course is designed to guide your learning.

Other Items

- A tentative class schedule is available on Sakai. We will cover most of Chapters 1-14 this semester, and pre-lecture readings will be continually updated on Sakai. Please be prepared to help your classmates get caught up if they miss a class for any reason. Establish a communication plan to share notes/topics/outlines as needed.
- 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 5th.
- 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 in person after documentation is received.
- Accommodations for religious reasons will be considered if the request is made to the instructors in person within the first two weeks of the semester. Absences for religious observances will be discussed in person.
- Best wishes for a successful term!

Course Grading System

Design

There are three basic principles that I have used to design the grading system for this course. These are for you to:

1. Understand what the standards and requirements are for each letter grade so that you can choose what level of academic achievement to pursue in this course. I encourage each of you to strive for high achievement because I believe in the potential of all students to learn and improve their abilities in Chemistry.
2. Expect 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 chances to revise and improve the quality of your work throughout the semester.
3. Learn from mistakes. Deep, connected learning involves hard work and reflection on your progress. Chemistry is a cumulative subject where the new topics build on prior knowledge and this system is designed for cycles of learning.

Standards

The standards for each letter grade are listed here according to all required course components, and are not averaged across categories. You must meet or exceed all of the standards listed to earn the corresponding letter grade. These lists are intended for complete transparency: you do not need to do any extra work to figure out what is required for any grade, and we will revisit the standards and expectations after the early rounds of testing to help you gauge your progress in the course. Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

A Standards	A– Standards	B+ Standards
SSM Mastery + Proficiency ≥ 18 + 2 FOs ≥ 23 Mastered WileyPlus ≥ 90% of total points Group Assignments ≥ 12	SSM Mastery + Proficiency ≥ 16 + 3 FOs ≥ 22 Mastered WileyPlus ≥ 90% of total points Group Assignments ≥ 12	SSM Mastery + Proficiency ≥ 14 + 4 FOs ≥ 21 Mastered WileyPlus ≥ 80% of total points Group Assignments ≥ 11
B Standards	B– Standards	C+ Standards
SSM Mastery + Proficiency ≥ 12 + 4 FOs ≥ 21 Mastered WileyPlus ≥ 80% of total points Group Assignments ≥ 11	SSM Mastery + Proficiency ≥ 10 + 5 FOs ≥ 21 Mastered WileyPlus ≥ 80% of total points Group Assignments ≥ 10	SSM Mastery + Proficiency ≥ 8 + 5 FOs ≥ 20 Mastered WileyPlus ≥ 70% of total points Group Assignments ≥ 10
C Standards	C– Standards	D Standards
SSM Mastery + Proficiency ≥ 6 + 6 FOs ≥ 20 Mastered WileyPlus ≥ 70% of total points Group Assignments ≥ 9	SSM Mastery + Proficiency ≥ 4 + 6 FOs ≥ 20 Mastered WileyPlus ≥ 70% of total points Group Assignments ≥ 9	SSM Mastery + Proficiency ≥ 0 + 6 FOs ≥ 10 Mastered WileyPlus ≥ 50% of total points Group Assignments ≥ 6

Note: a student who fails to meet the standards for a grade of D will receive a grade of F for the course.

Posting of Grades

Final course grades at the end of the semester are posted only LOCUS. Grades are never sent via email. WileyPlus scores are automatically recorded in the gradebook for that system. Scores for other components will be made available on Sakai.

WileyPlus: Required Homework

Registration information is on Sakai; use of this system includes eText access. The purpose of these assignments is to help you keep up with the course material 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: a list of textbook sections will be continually updated on Sakai to correlate with the WileyPlus pre-lecture assignments. There will be 2-3 required assignments per week, always due at 11:59pm, posted at least 48 hours in advance. Assignments will be submitted completely online with the individual grading policy listed with each assignment. We have a student partner to assist you with technical aspects of using WileyPlus. Additional practice assignments will be posted that will not count toward the point total for your course grade.

Group Assignments

On average we will have one assignment per week, in small groups (assigned by the instructor), graded based on completion of all required components. Most assignments will be completed in class (lecture/discussion). The purpose of participation is to improve your learning by: 1) cooperation, communication and support among your classmates as you practice the skills required for success in the course; and 2) providing feedback on your progress to encourage reflection and improvement. Assignments will include test questions from previous semesters. You will get as much benefit from these assignments as you choose to put forth in your effort and you are expected to correct your work after receiving feedback. There are no make-up assignments for this course.

Foundational Objectives: Mastery Testing

The purpose of testing is to align your course grade with your level of learning, based on your mastery of Foundational Objectives (FOs). The FOs are all related to the Course Content & Learning Outcomes on the first page of this syllabus. A list of FOs will be released on Sakai with each unit as we progress through the material. There will be some overlap between chapters. Tests will be scored as Mastered or Not Mastered for each FO. A score of Mastered is earned for correctness and completeness of the problem(s), and each FO may only be counted once toward your mastery total. You will have multiple chances to demonstrate mastery of all of the FOs during the semester: for example, if you receive a score of Not Mastered for any FO on the first test (or if you choose not to attempt an FO), you can try again to earn a score of Mastered for that FO on the second test. Revision of work that does not meet mastery standards is expected for your learning. Because you will have more than one chance to master the FOs, you will also be able to choose which FOs to work toward for the course. Note that the standards for earning Mastery will be high: by definition there is no partial credit, but you will learn the standards from the examples for class activities.

Spectroscopy/Synthesis/Mechanisms (SSMs): Mastery Testing

The purpose of testing is to align your course grade with your level of learning, based on your mastery of in-depth topics. 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. The SSMs are all related to the Course Content & Learning Outcomes on the first page of this syllabus. 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). Note that the standards for earning Mastery will be high: by definition there is no partial credit, but you will learn the standards from the examples for class activities. Each SSM counts equally toward your grade at the end of the semester. Each round of testing on SSMs will be followed by an opportunity to resubmit work to earn a score of Proficient for an SSM that was Not Mastered in the first testing opportunity. Resubmissions for Proficiency will also earn reattempts of SSMs. Reattempts will take place with the next round of testing.

Mastery Testing Tentative Schedule

There are no early tests given, and no make-ups. Excused absences require documentation of an unforeseeable emergency but do not result in a make-up testing because the FOs and SSMs will be available to master on multiple rounds of testing. Multiple attempts are provided in place of the dropped midterm exam policy that is commonly found in points-based exam systems. Our grading system is similarly designed to allow for circumstances that require you to be absent (e.g., illness). Your health is important to me and our shared community. Please use good judgement and stay home if necessary/prudent.

Week 3: Unit 1, Thursday September 16th
Week 6: Unit 2, Thursday October 7th
Week 9: Unit 3, Thursday & Friday October 28th & 29th
Week 12: Unit 4, Thursday November 18th
Week 15: Unit 5, Friday December 10th
Final Exam: as scheduled by the University