

## Loyola University Chicago

**Organic Chemistry I CHEM 223 Sec. 004 Summer Session A: May 18 – June 26, 2020** [Link to academic calendar](#)

**ONLINE:** required availability for synchronous sessions: **Wed, Fri: 12:30 PM – 2:30 PM**

**TIME ZONE:** All times listed in this syllabus correspond to the local time in Chicago, Illinois (Central Time Zone)

**Instructors:** Donald May, Sandra Helquist Contact: dmay4@luc.edu, shelquist@luc.edu, typically emails will be answered Monday-Friday within 24-36 hours of receipt. For immediate responses, bring questions to office hours.

**Zoom Office Hours:** May, immediately following Wed & Fri sessions; Helquist, Thurs 11am1-pm, Mon via Sakai sign-up.

**Prerequisites:** CHEM 102,112 or Chem 106, or the equivalent.

### **TEXTBOOK (REQUIRED):**

Klein, Organic Chemistry, 3e; complete access via WileyPlus: [www.wileyplus.com/class/766884](http://www.wileyplus.com/class/766884)

The printed version is an optional add-on. A printed solutions manual is an optional add-on. Register on WileyPlus for the best price and immediate access with a free two-week grace period.

### **ELECTRONIC MATERIALS (REQUIRED):**

1. Expect to use both a laptop computer and a mobile device (phone, tablet) for connectivity to online resources, including use of a camera or connected webcam.

Loyola is offering a limited supply of equipment loans for students enrolled in summer courses:

<https://www.luc.edu/its/dms/equipmentloan/browseourequipment/extendedloan>

2. Preliminary list of electronic resources:

Loyola email: messages to be sent to the class from Sakai, linked to your Loyola UVID

Loyola Sakai course management site: [sakai.luc.edu/portal/](http://sakai.luc.edu/portal/) login with your Loyola UVID

Zoom conferencing: [luc.zoom.us](http://luc.zoom.us) meeting ID & password will be provided, login with Loyola UVID

WileyPlus: [www.wileyplus.com/class/766884](http://www.wileyplus.com/class/766884)

GradeScope: we will upload a course roster and send notification via email prior to first class

CamScanner: free application converts photos to pdf's of your work (alternative: Genius Scan)

Loyola Information Technology Services Support: <https://www.luc.edu/its/support/>

3. Exams & Proctoring will be conducted electronically, additional (free) software downloads may be required

### **COLLABORATION MATERIALS**

You will be working in small groups with your classmates via Zoom. One low-cost method to collaborate quickly is to use a dry-erase whiteboard to write out your work so that it is easily viewable via your webcam. For this you would only need a lap-size whiteboard and dry-erase markers, for example:

Amazon.com search results, sorted low to high price: [“lap whiteboards for students”](#)

Target.com search results: [“dry erase lap-size whiteboards”](#)

The expensive alternative is an electronic tablet and stylus.

You can also expect to use these materials for discussions and office hours with your instructors.

### **INDIVIDUAL MATERIALS**

Molecular Model Kit, for example:

Duluth Labs: <https://duluthlabs.com/pages/product-comparison>

Pearson Prentice-Hall: ISBN-13: 978-0205081363

Darling Molecular Visions: ISBN-13: 978-0964883710

### **OPTIONAL STUDY AIDS**

1) Study Guide and Solutions Manual for the textbook

2) Molecular model kit (see above)

3) paperback by D.P. Weeks entitled “Pushing Electrons: A Guide for Students of Organic Chemistry,” Third Edition (Thomson Brooks/Cole); ISBN 0-03-020693-6. The first 3 chapters (pp. 1-161) of this workbook are intended to help students understand “structure and bonding in organic molecules,” as well as techniques of “electron pushing” so as to comprehend reaction mechanisms.

4) paperback also by D.R. Klein entitled “Organic Chemistry as a Second Language: Translating the Basic Concepts” (I&II); 2004 by John Wiley & Sons, Inc.; ISBN 0-471-27235-3; [www.wiley.com/college/klein](http://www.wiley.com/college/klein). These are to help the student develop the skills required to solve a variety of problems in organic chemistry and to point out the fundamental principles in organic chemistry.

5) Supplementary Textbooks: Organic Chemistry, Eighth Edition by Wade (Pearson; 2016)

Organic Chemistry, Tenth Edition, by T.W.G. Solomons and C. Fryhle (John Wiley & Sons, Inc., 2011).

Organic Chemistry, Eighth Edition, by J. McMurry (Brooks/Cole Publishing Co., 2012).

Organic Chemistry, by F.A.Carey and R.M. Giuliano, Eighth Edition (McGraw-Hill, Inc., 2011).

Organic Chemistry: Structure and Function, by K.P.C. Vollhardt and N.E. Schore, Sixth Edition (W.H. Freeman and Co., 2011).

**Method of instruction:** Lectures via Panopto, to be posted within our course site on Sakai. Discussions via Zoom, with meeting ID and password to be posted within our course site on Sakai. Lectures may be supplemented with the discussions, use of molecular models, use of multimedia, and/or use of additional electronic materials as well as individual and/or group problem solving. Suggested textbook homework problems will be given but the student will not be required to turn them in. We will update a course schedule on Sakai at least weekly to help you stay on track with your learning.

**Online Classes Recording Statement:** In this class software will be used to record live class discussions. As a student in this class, your participation in live class discussions will be recorded. These recordings will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. All recordings will become unavailable to students in the class when the Sakai course is unpublished (i.e. shortly after the course ends, per the [Sakai administrative schedule](#)). Students who prefer to participate via audio only will be allowed to disable their video camera so only audio will be captured. Please discuss this option with your instructor. The use of all video recordings will be in keeping with the University Privacy Statement shown below:

**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.

**Student and Faculty Expectations:** While we are structuring this course so that most of the work will be done asynchronously, we are requiring all students to reserve 12:30-2:30pm on Wednesdays and Fridays for this term (per the Course Notes on LOCUS). We will use that time for a combination of discussions, group work and exams, with the remainder of the time used for Mr. May's office hours.

- You can expect that we will provide a schedule for you, updated at least weekly, that will help you stay on track with your asynchronous course work. In the summer sessions, the expected minimum workload to achieve a passing grade is ~4-5 hours per day, for a total of ~30 hours per week. We list an average daily and weekly workload based on past experience, i.e., you should not expect to be successful by cramming all coursework into 1-2 days per week. Why do you need to spread out your work to be successful? Because we learn best by spaced repetition and practice of skills, and the course material is highly cumulative (it builds on itself relentlessly). Please note that we are expecting this amount of work, but we cannot guarantee any course grade based on the number of hours you spend studying.
- For any online course we feel it is also essential for you to be extremely pro-active, and this is even more true during this accelerated summer session. You may find that you need additional help in office hours, study groups, from Loyola ITS support with technology use, and more. We are creating a course structure that will clearly communicate learning expectations on a daily and weekly basis, and we expect to hear from you before any problems become serious.
- **SUMMARY:** Reserve 12:30-2:30pm Wed & Fri, spend at least 4-5 hours per day on coursework, be proactive!

**Academic Integrity:** Consult the [Undergraduate Studies Handbook](#) for additional information. 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/>. Anything you submit that is incorporated as part of your grade in this course must represent your own work, unless otherwise authorized. All exams are proctored and permitted materials and resources will be clearly stated prior to each exam. During exams, violations include but are not limited to: using unauthorized notes, books, or electronic resources, communications with other people, efforts to thwart electronic proctoring, misuse and abuse of time limits. Falsifying statements and facilitating misconduct for other students also constitutes a violation of academic integrity. Any student found to be in violation or cheating will be given a zero for the assignment/exam (which cannot be dropped from the course grade) and the incident will be reported to the Chemistry Department Chair and the Office of the CAS Dean. Depending on the seriousness of the incident, additional sanctions may be imposed.

**Disability Accommodations:** Students requiring accommodations at the University need to contact the Coordinator of Services for Student Accessibility Center (SAC), Sullivan Center. Accommodations are provided after receiving documentation from SAC Testing and allowance of a reasonable time frame for arrangements (minimally, one week in advance). Accommodations cannot be retroactive. Contact: <http://www.luc.edu/sac/>

**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. Read the full policy at this link (scroll down): <https://www.luc.edu/chemistry/courses.shtml>

**Co-teaching Statement:** Mr. May will be primarily responsible for presentation of material (using Panopto lectures) and exam content. Dr. Helquist will take on a supporting role in these areas. Dr. Helquist will be primarily responsible for implementation of online learning (Zoom/Sakai/WileyPlus/other technologies). Mr. May will take on a supporting role in this area. We will be sharing many of the other responsibilities of the course, including hosting online class sessions and office hours. Both instructors have taught Chem 223 at Loyola for many years, and Dr. Helquist has earned the online teaching certificate from Loyola.

#### Other Items

- Loyola's Sakai site is the central resource for all of our course materials. Other sites will be linked and referenced, but Sakai is your essential source and all updates will be posted online at: [https://sakai.luc.edu/portal/site/CHEM\\_223\\_004\\_1663\\_1204](https://sakai.luc.edu/portal/site/CHEM_223_004_1663_1204)
- Loyola is using SmartEvals to provide instructor & course feedback. **OIE** will send emails near the end of the term.
- Accommodations for religious reasons will be considered if the request is made to the instructors in person within the first week of the term. Absences for religious observances will be discussed in office hours.
- The instructors reserve the right to modify the syllabus for any course requirement at any time.

**Learning Objectives:** Students who successfully complete this course will be able to do the following at an acceptable level:

- Name and draw simple and more complex organic structures
- Differentiate between isomer types (structural and stereo) and conformers
- Predict and name different stereoisomers
- Relate molecular orbital hybridization to bonding types
- Describe and differentiate between various mechanisms, such as addition versus substitution
- Predict both physical and chemical properties of alkanes, alcohols, alkenes, alkynes and alkyl halides
- Relate reaction mechanisms to intermediates, stereochemistry, and kinetics
- Predict reaction mechanism from experimentally related data and vice versa
- Work with multi-step reaction pathways; develop synthetic pathways to simple organic compounds
- Use IR and mass spectrometry data to identify structures; predict the spectroscopic data from the structure

<b>SCHEDULE:</b> detailed Chapter readings, lecture videos & resources, and practice problems are updated regularly on Sakai.			
<b>Week (dates)</b>	<b>Chapters covered, tentative</b>	<b>Wed: 12:30pm start</b>	<b>Fri: 12:30pm start</b>
<b>1</b> (May 18-22)	Introduction session (optional) 12:30pm Monday Chapters 1-3	Problem-solving, Q&A	Discussion Group Work
<b>2</b> (May 25-29)	Chapters 4-5	Problem-solving, Q&A	<b>Exam I</b> (everything so far)
<b>3</b> (June 1-5)	Chapters 6-8	Problem-solving, Q&A	Discussion Group Work
<b>4</b> (June 8-12)	Chapters 8-10	Problem-solving, Q&A	<b>Exam II</b> (emphasis since Exam I)
<b>5</b> (June 15-19)	Chapters 11-12	Problem-solving, Q&A	Discussion Group Work (Last day to withdraw from course with W grade)
<b>6</b> (June 22-26)	Chapters 13-14	Problem-solving, Q&A	<b>Final Exam</b> (comprehensive and cumulative)

**Grading:** Semester grades will be determined by the following criteria: individual surveys, discussion group work, two unit exams and one cumulative final exam. See schedule. There are no early and no make-up exams or assignments.

Individual Surveys (every Tuesday)	10 points
Discussion group work (every other week)	90 points
1 <sup>st</sup> Unit Exam	100 points
2 <sup>nd</sup> Unit Exam	100 points
<u>Final Exam</u>	<u>200 points</u>
Total available	500 points

<b>Final Course Grade Assigned:</b>	A: 450-500 points	A-: 425-449 points
	B+: 400-424 points	B: 375-399 points
	B-: 350-374 points	C+: 325-349 points
	C: 300-324 points	C-: 275-299 points
	D+: 250-274 points	D: 200-249 points
		F: 0-199 points

**Description of Individual Surveys (every Tuesday):** 2 points each, up to maximum of 10 points. Due via Sakai by 11:59pm each Tuesday. The purpose of the weekly survey is to gauge how well you are learning from the Panopto lectures, practice problems, textbook readings, and other learning materials so that we can have focused and useful discussions on Wednesdays.

**Description of Discussion Group Work (every other week):** 30 points each, 12:30-1:30pm on Fridays\* via Zoom per the schedule above. Discussion questions will come from concepts from suggested readings, recorded lecture notes, and from concepts related to suggested homework problems, usually emphasizing one or two major concepts. The majority of the questions will be free-response. Groups will be assigned by the instructors, and active participation via Zoom is required to share in the group score. Each group will upload one copy. \*The first discussion includes an individual upload due Thursday night.

**Description of Exams (every other week):** Two 60-minute unit exams, 100 points each; and a 2-hour final exam, 200 points, starting at 12:30pm on Fridays per the schedule above. Details for exam format, submission requirements, and online proctoring requirements will be provided at least 48 hours before the first exam. Questions will come from concepts from suggested readings, recorded lecture notes and from concepts related to suggested homework problems, and from discussion handouts. The majority of the questions will be free-response. Allowed materials will be listed with each exam. Exams are to be completed individually without assistance from any other person and without use of unauthorized resources.

**Recommended Practice Problems:** While we cannot predict individual outcomes, our past experiences allow us to suggest the “best practices” for the most successful outcome. Because you will be asked to answer questions individually on exams, you should study by answering questions individually. Watching lectures/explanations and reading the textbook are necessary but not sufficient. Complete the suggested problems every day: when and if you are ready for the exams, you will know how and why your answers are correct without checking a solutions manual.