



*Instructor: Dr. Polina Pine*

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Office Location: FH-403

Office Hours: Tu 11:30 am-12:30 pm

F 10:30-11:30 am

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**Lectures:** Tu,Th 10:00-11:15 am **Flanner Hall Auditorium**

**Discussions:** Th 11:30-12:20 FH-105

Th 1:00-1:50 pm FH-105

Best (the fastest) way to contact Dr. Pine is in person during the office hours, after the lecture or before/after the Discussion Session. If email is sent after 5pm during business days it may be answered the next day or within 24 hours. Emails sent over the weekend may be answered during the business days.

## Course Overview

This course is the first in a yearlong two-semester sequence of organic chemistry covering the structure, properties, and reactivity of aliphatic and alkenic molecules. Specific topics include bonding, nomenclature, conformational analysis, reaction mechanisms, multi-step synthesis, and spectroscopy (MS, IR, and  $^1\text{H}$  and  $^{13}\text{C}$  NMR).

The student should learn how to:

- Identify the various classes of organic compounds, their methods of preparation, and typical reactions.
- Name and draw specific organic compounds.
- Postulate a logical reaction mechanism for simple organic reactions.
- Discriminate amongst relative stabilities of reaction intermediates.
- Plan and write out multi-step syntheses using known functional group transformations.
- Analyze and interpret data from instruments used in separating and identifying compounds: IR, NMR, MS.

## IDEA Objectives

These objectives include learning outcomes beyond this course and will apply across multiple courses and disciplines as you develop as an independent learner at Loyola. These have been selected by the faculty to apply to all sections of Organic Chemistry:

1. Gaining factual knowledge (terminology, classifications, methods, trends)
2. Learning fundamental principles, generalizations, or theories
3. Learning to apply course material (to improve thinking, problem solving, and decisions)
4. Learning how to find and use resources for answering questions or solving problems

The link to the IDEA evaluation of the course will be sent to students at the end of the term. Please find 2-3 minutes to fill this online survey. Please remember that as the IDEA manual states: “...As student raters, you should also know that the results of your ratings for this class will be included as

*part of the information used to make decisions about promotion/tenure/salary increases for this instructor. Fairness to both the individual and the institution require accurate and honest answers.”*

**Textbook and material:**

1. Organic Chemistry, Klein, 3<sup>rd</sup> ed., Wiley, 2017 (ISBN: 978-1-119-31615-2)
2. WileyPlus online homework/practice tool for the above textbook (Required and is comprised in the final grade calculation)- included in the textbook Package Options given below, no additional payment is needed. The flyer with the courseID is uploaded on Sakai under Resources. Follow the flyer ONLY to enroll to your section!
3. Student Study Guide and Solutions Manual, Klein, 3<sup>rd</sup> ed. Wiley, 2017 (ISBN: 978-1-119-37869-3)
4. Molecular modeling kit, Darling, Duluth, or equivalent - bring to each class (CH3-CH5)
5. Organic Chemistry as a Second Language: First Semester Topics, 4E ed. (or earlier), Klein, 2017, Wiley (ISBN: 978-1-119-11066-8 (PBK)) (Extremely Highly Recommended)

**Package Options for the textbook:**

**(Contact Bookstore for more information. The professors are not affiliated with the publishing company and not authorized to consult regarding the package options)**

- a. Loose-leaf printed textbook, printed study guide/solutions manual, and WileyPLUS online-practice problems (ISBN: 978-1-119-38071-9)
- b. Integrated e-textbook and e-study guide/solutions manual, loose-leaf printed textbook, and WileyPlus online-practice problems (ISBN: 978-1-119-43349-1)
- c. Integrated e-textbook and e-study guide/solutions manual and Wiley Plus online-practice problems (ISBN: 978-1-119-43016-2).

**Learning procedure HIGHLY IMPORTANT! PLEASE READ CAREFULLY:**

- **No Taking Photos**
- **No taking Videos**
- **No Audio recording**
- Only positive, respectful behavior is tolerated in this class. Please see **Harassment (Bias)** section at the end of the Syllabus.
- **To contact Dr. Pine by email put CHEM223-YOURSECTION in the Subject field. If the subject of your email does not contain this information it may be overlooked. If email is sent after 5pm during business days it may be answered the next day or within the working hours of the week. Emails sent over the weekend may be answered during the business days.**
- Using the computers, cell phones and tablets is not allowed. Must be operated on silent mode during lecture and discussion.
- **It is student's responsibility to follow the announcements, and all policies of the class.**

- **The class lectures and discussions will be the most critical source of information for this course.** If you miss a lecture/discussion, please find notes from another student in class.
- Make-up assignments, exams, quizzes are not available for this course.
- It is **impossible** to study organic chemistry without solving **all** assigned problems from the back of each chapter independently on one's own.
- Classes will be given as a combination of the following formats: board, multimedia, use of models, discussions, independent and facilitated problem solving.
- Dr. Pine's lecture slides **if** posted on Sakai may be doubling the material in the class or covering material that expected to be covered by students independently. Follow the announcements in class and ask Dr. Pine during the class, after or before the lecture if anything remains unclear.
- Bring the model kit to each class (for CH3-5 is especially important).
- The study guides in form of problems kits (discussion handouts) if assigned will be posted on Sakai, students must print these handouts, bring them to every class and follow all directions given in the handout. The handouts may be collected for grading during a discussion or lecture without prior notice, if you miss the class where the discussion packages are collected you will get a zero for the collected package/discussion handout.
- **Please note that any materials from this course cannot be shared outside the course without the instructor's written permission (as reminded by the CAS Dean's Office memo, Jan. 2018).**
- *The majority of the material from CH1 and CH3 was covered in General Chemistry CHEM 101 and CHEM 102 or equivalent class in great details. For this reason CH1&CH3 will be covered only briefly, and students will be tested on these concepts to insure students' readiness for the CHEM223 class. Organic chemistry is heavily based on concepts covered in general chemistry. If you feel hesitant about any of the concepts covered in previous classes you have to review it before coming to first class or during first week of the classes.*

Students have to expect to devote 20-40 HOURS OUTSIDE OF CLASS TIME PER WEEK to studying for organic chemistry. Try not to do homework with the solutions manual out. THIS IS A COMMON MISTAKE STUDENTS MAKE. Students who study in this manner often trick themselves into thinking they know chemistry when really they do not.

Make-up assignments are not available for this course. Contact a classmate for notes, sections/topics covered if you miss a class. **For success in this course, it is important to review your notes, read the textbook and look over the slides/material prior and after class, work on homework problems every day.** DO NOT FALL BEHIND. Attendance is not taken for credit but any absence or any not following the policies or announcements given in the class may result in poor performance.

**Due to the fast pace of the semester announcements given in class may not be necessarily doubled/tripled in any electronic form (email, Sakai etc.) It is student's responsibility to follow the announcements, and all policies or changes of the class.**

## Grading policy:

**There are NO EXTRA ASSIGNMENTS NO MAKE-UP EXAMS OR QUIZZES.**

**Under no circumstances may an exam/quiz be taken at a time and date other than that assigned.**

The midterm and final letter grades will be given based on the points scored in the course only. *To take into consideration students' personal circumstances (weddings, funerals, sicknesses, jury duties, etc.) two options of the final score calculation were developed.* If you miss one unit exam *for any reason*, the missed exam will be dropped and Option 2 will automatically be used to determine your grade. A second missed unit exam will result in a score of zero for the missed exam. **There are NO EXTRA ASSIGNMENTS NO MAKE-UP EXAMS OR QUIZZES.** Under no circumstances may an exam/quiz be taken at a time and date other than that assigned. Final score will be determined from one of the following options whichever is higher:

Option1:

Quizzes	10%
Exam 1	20%
Exam 2	20%
Exam 3	20%
Final Exam	30%
Total	100%

Option2 (Lower unit-exam score is a drop):

Quizzes	10%
Unit Exam	20%
Unit Exam	20%
Final Exam	50%
Total	100%

All quizzes are online quizzes through the WileyPLUS online resource (see Package Options above) the dates of the quizzes are given in the *Tentative Lecture Schedule will be posted on Sakai under Recourses*. All details will be given during the first **Discussion**.

**Every unit exams:** 50 minutes, the dates are **September 27, October 23, and November 15** exact dates are given in the tentative schedule posted on Sakai.

**Final exam has to be taken during the scheduled time only!**

**Final exam:** two hours - MANDATORY. The final exam must be taken ONLY on the date scheduled or a grade of F will automatically result. Final exam is comprehensive and cumulative. **Final exam Tuesday December 12<sup>th</sup> 1:00-3:00 pm.** For exact day and time check here:

[http://www.luc.edu/academics/schedules/spring/exam\\_schedule.shtml](http://www.luc.edu/academics/schedules/spring/exam_schedule.shtml))

All exams will be graded within seven business days. All points are converted to percentage for the final score calculation. Students must pick up their score reports or exams booklets (if available) within one week after the scores are published during the times announced by the instructor only, not during any other time. Issues with graded exams must be submitted within 7 calendar days of being returned, otherwise scores will be considered final.

*Approximate grading scale (letter grade is related to percentage scored in the class and calculated as one of the options above):*

<i>A</i>	<i>A-</i>	<i>B+</i>	<i>B</i>	<i>B-</i>	<i>C+</i>	<i>C</i>	<i>C-</i>	<i>D+</i>	<i>D</i>	<i>F</i>
100-93	92-85	80-84	75 -79	70-74	65-69	60-64	55-59	50-54	40-49	less than 40

Only mistakes such as tallying up points by the lecturer are eligible for re-grading.

## The Exams procedure

**Calculators**, phones, headphones, tablets and any electronic devices **are not permitted**. Come to the exam with **three** items: working **HB-2 pencil(s)**/pens, model kit in a clear, transparent bag, and your **Loyola ID** visible on your desk to be checked during the exam.

**All purses, bags, jackets, etc must be left at front of the room. Once the exam is distributed, if you exit the room for any reason before time is up, your exam is complete and will be collected.**

## Instructor Privileges

**Instructor reserves the right to make changes and adjustments to this syllabus as necessary, including, but not limited to the grading policy and course schedule.**

**Course Topics** (Not all textbook sections will be fully covered or covered in the order the textbook dictates, so focus first on the material that is directly covered in lecture and assigned for homework and discussion handouts)\*:

Chapter 1: Review of General Chemistry

Chapter 2: Molecular Representations

Chapter 3: Acids and Bases

Chapter 4: Alkanes and Cycloalkanes

Chapter 5: Stereoisomerism

Chapter 6: Chemical Reactivity and Mechanisms

Chapter 7: Alkyl Halides: Nucleophilic Substitution and Elimination Reactions

Chapter 8: Addition Reactions of Alkenes

Chapter 9: Alkynes

Chapter 10: Radical Reactions

Chapter 11: Synthesis

Chapter 12: Alcohols and Phenols

Chapter 13: Ethers and Epoxides; Thiols and Sulfides

Chapter 14: Infrared (IR) Spectroscopy and Mass Spectrometry

\* See *Tentative Lecture Schedule posted on Sakai under Recourses*. Students are expected to read the textbook before and after the lecture.

**Our actual pace and the topics may vary from the schedule**

## 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

Trust and integrity are important qualities in students. All submitted work must represent your own work and your own work only. Academic dishonesty of any kind, such as plagiarism and cheat sheets on exams, sharing information about quizzes or exams with other students or other sections prior to any scheduled exam that these students are taking will not be tolerated. Any student caught cheating on an assignment in any way will receive a “zero” for that assignment and be reported to Chairperson of the Chemistry Department and the Dean School of Art and Science. For further information regarding the Academic Integrity policy and disciplinary procedures, refer to the Undergraduate Studies Catalog: [http://www.luc.edu/academics/catalog/undergrad/reg\\_academicintegrity.shtml](http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml).

## Disability Accommodations

At times, students with disabilities may wish to avail themselves of the University’s ancillary services. Students requiring accommodations at the University need to contact the Coordinator of Services for Students with Disabilities, then provide documents and schedule arrangements with the instructor at the beginning of the term. Information is available at: <http://www.luc.edu/sswd/>

**Students with documented evidence of the time extension must take the exams in the SSWD center ONLY with prior arrangement (usually at least one week before the exam). There will be no possibility to accommodate the extra time outside of the SSWD center. The start time of the exam must be the start time of the actual lecture or scheduled in such a way that the time of the exam of the student taking the exam in the SSWD center overlaps with the exam time of the class.**

## Loyola University Absence Policy for Students in Co-Curricular Activities:

Students missing classes while representing Loyola University Chicago in an official capacity (e.g. intercollegiate athletics, debate team, model government organization) 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 (develop standard form on web) 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 as far in advance of the absence as possible. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to give the student the opportunity to make up examination at another time that fits the class schedule and requirements (<https://www.luc.edu/athletheadvising/attendance.shtml>)

## Tutoring Center

The CTAE offers several different programs each semester, including class-specific tutor-led small groups, Academic Coaching groups dedicated to general academic support, and a Study Buddy Directory for students seeking out more independent collaboration with other students in the same class or subject area. For more information refer to [http://www.luc.edu/tutoring/Small\\_Group\\_Info.shtml](http://www.luc.edu/tutoring/Small_Group_Info.shtml)

## **Harassment (Bias Reporting)**

*It is unacceptable and a violation of university policy to harass, discriminate against or abuse any person (student or instructor) because of his or her race, color, national origin, gender, sexual orientation, disability, religion, age or any other characteristic protected by applicable law. Such behavior threatens to destroy the environment of tolerance and mutual respect that must prevail for this university to fulfill its educational and health care mission. For this reason, every incident of harassment, discrimination or abuse undermines the aspirations and attacks the ideals of our community. The university qualifies these incidents as incidents of bias. In order to uphold our mission of being Chicago's Jesuit Catholic University-- a diverse community seeking God in all things and working to expand knowledge in the service of humanity through learning, justice and faith, any incident(s) of bias will be reported and appropriately addressed. Therefore, the Bias Response (BR) Team was created to assist members of the Loyola University Chicago community in bringing incidents of bias to the attention of the university: <http://webapps.luc.edu/biasreporting>*

**A link to the official Loyola calendar can be found here: <http://luc.edu/academics/schedules/index.shtml>**