

Syllabus – Organic Chemistry B

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 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 Information

Course: Chemistry 224 – Organic Chemistry B (3 credits: Lecture & Discussion)

Prerequisites: Completion of Chemistry 223 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 A student missing a prerequisite may be withdrawn at any time.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)

In-Person Learning: All graded assignments scheduled during class time are available in class only.

Lectures: Monday, Wednesday & Friday 11:30AM - 12:20PM, Flanner Hall - Auditorium

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

- Monday 1:40PM - 2:30PM, Flanner Hall Room 7
- Monday 2:45PM - 3:35PM, Flanner Hall Room 7
- Wednesday 10:25AM - 11:15AM, Flanner Hall Room 7

Course Coordinator: Dr. Kelvin Billingsley (Ph.D.) kbillingsley@luc.edu

Chemistry 224 is a multi-section lecture & discussion course with common content and common outcomes across all sections. This course includes a Common Final Exam during the Common Final Exam Period as scheduled by the University. This Exam will be cumulative for both semesters of Organic Chemistry. The Course Coordinator is responsible for consultation and coordination with instructors regarding policies, exam writing, and grading. Your Section Instructor is responsible for communicating with you regarding all course content and policies and is the first and primary person you should contact with questions about all aspects of the course. As needed, all Section Instructors will consult with the Course Coordinator throughout the semester.

Section Instructor: Dr. Sarala Tantirimudalige

Instructor Contact Information

Office: Flanner Hall – 104

Email: stantirimudalige@luc.edu

Email timing: Feel free to email me questions at any time. All emails must be sent through the student's LUC email address and **MUST** include "CHEM 224-008" in the subject line.

Office Hours Schedule:

Office Hours are held in Flanner Hall – 104.

- Monday 9.30 am – 10.30 am
- Wednesday 2:00 pm – 3:00 pm
- Friday 9.30 am – 10.30 am

Required Course Materials

- Textbook: eText via [WileyPlus](#): Organic Chemistry, Klein, David, 4th edition.
- Loyola Sakai course management site: 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](#) and other sites

Recommended Course Materials:

Any organic molecular model kit.
Duluth Labs MM-005 Student Set
Molecular Visions Organic Model Kit
Organic Chemistry, Klein, David, 4th edition Solutions Manual

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 Content & Learning Outcomes

Prerequisite knowledge from Chemistry 223 is necessary for in-depth study of topics in Chemistry 224. Topics will include: nomenclature, structures, properties, reactions, mechanisms, spectroscopy, and syntheses of arenes, carbonyls, carboxyls, amines, carbohydrates, lipids, and amino acids. 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.

Course Objective: To guide, encourage, and foster the learning and understanding of Organic Chemistry – nomenclature, structures, properties, mechanisms, syntheses, and spectroscopy – by the individual student, helping him/her to connect, extrapolate, integrate, and apply the many different aspects learned, using critical thinking.

Class Attendance & Course Coverage

- Classes are planned with three lectures per chapter or topic.
- There will be 3 unit exams, which will be graded. These unit exam grades will make up 50% of the final grade obtained for this course, so please make sure you do not miss these in-class exams. The best two of three unit exam grades are recorded.
- Wileyplus quizzes will be shared for students to attempt at home. These quizzes must be completed by all students. The quizzes are graded and make up 10% of the final grade.
- Homework problems will be assigned, and students are strongly advised to complete these. These will not be marked and no grade will be assigned. It is strongly recommended that students attempt these questions at home so as to practice their skills. The questions assigned will improve their subject knowledge and prove to be a strong help in succeeding in the unit exams and final examination.
- Discussion will consist working on a selected set of questions and discussing the answers. All students must attend the discussion session as there will be a grade allocated that contributes towards the final grade.
- The questions for discussions will be shared at each discussion date, so students can try it during the discussion. The discussion attendance along with participation will be graded.

Classroom & Discussion 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.

No early assignments, no make-ups, no exceptions. The purpose of group work is to foster cooperation and communication between students and the instructor to help you learn the material and develop your problem-solving skills at the level you will be expected on exams. The problems worked in discussion are mostly taken from old exams: if you struggle with any part of any question in the group session, make a note of it for your next study session and ask for help. Then keep practicing (studying!) until you can solve similar and related problems on your own: the amount of practice and help required will be different for each of you.

Student and Faculty Expectations

I expect that you will take an interest in learning and exploring the subject every day, by allocating at least an hour of your day for reviewing your work and staying up to date with your homework and assignments. Please be prepared for your classes by taking a look at pre-reading material and attempt homework handed out before the discussion sessions so that you can gain as much as possible from the in-class discussions. I as an instructor will provide you with the tools, environment, encouragement, and support to learn Chemistry. My philosophy is that the classroom is a place where both student and teacher can gain much knowledge through discussion and active learning. I hope you enjoy the class.

Student Accommodations

Loyola University Chicago provides reasonable accommodations for students with disabilities. Any student requesting accommodations related to a disability or other condition is required to register with the Student Accessibility Center (SAC). Professors will receive an accommodation notification from SAC, preferably within the first two weeks of class. Students are encouraged to meet with their professor individually in order to discuss their accommodations. All information will remain confidential. Please note that in this class, software may be used to audio record class lectures in order to provide equitable access to students with disabilities. Students approved for this accommodation use recordings for their personal study only and recordings may not be shared with other people or used in any way against the faculty member, other lecturers, or students whose classroom comments are recorded as part of the class activity. Recordings are deleted at the end of the semester. For more information about registering with SAC or questions about accommodations, please contact SAC at 773-508-3700 or SAC@luc.edu.

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). The Department advises that it is preferable to complete a course with a grade of C or C-, and to demonstrate growth in future coursework, than to withdraw from a course.

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: <https://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

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/>

A basic mission of a university is to search for and to communicate the truth as it is honestly perceived. A genuine learning community cannot exist unless this demanding standard is a fundamental tenet of the intellectual life of the community. Students of Loyola University Chicago are expected to know, to respect, and to practice this standard of personal honesty.

Academic dishonesty can take several forms, including, but not limited to cheating, plagiarism, copying another student's work, submitting false documents, and deliberately disrupting the performance of other class members. Standards apply to both individual and group assignments.

Any instance of academic misconduct (including those detailed on the website provided above or in this syllabus) will be reported to the Department Chair and the academic Dean's office.

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.

Loyola University Absence Policy for Students in Co-Curricular Activities (including ROTC):

Students missing classes while representing Loyola University Chicago in an official capacity (e.g., intercollegiate athletics, debate team, model government organization) shall be allowed by the faculty member of record to make up any assignments and to receive notes or other written information distributed in the missed classes.

Students 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 i.e., "[Athletic Competition & Travel Letter](#)" 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 to the professor in the first week of a semester. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to allow the student to take the examination at another time.

<https://www.luc.edu/athleteadvising/attendance.shtml>

Students who will miss class for an academic competition or conference must provide proper documentation to their instructor as early in the semester as possible.

Accommodations for Religious Reasons

If you have observances of religious holidays that will cause you to miss class or otherwise effect your performance in the class you must alert the instructor **within 10 calendar days of the first class meeting of the semester** to request special accommodations, which will be handled on a case by case basis.

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 Monday, March 25.
- Loyola is using SmartEvals to provide instructor & course feedback. OIE will send emails near the end of the term.

Class Recording & Content Information

Lecture, meetings during this course are not to 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.

Pass/Fail Conversion Deadlines and Audit Policy

A student may request to convert a course into or out of the "Pass/No-Pass" or "Audit" status only within the first two weeks of the semester. For the Fall 2023 semester, students can convert a class to "Pass/No-Pass" or "Audit" through Monday, September 11th. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

Final Exam

The University sets the schedule for all final exams. The final will be held on:

Wednesday May 1st, 7:00pm

Location will be updated on LOCUS when available.

You will have exactly 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).

Universal Absence Accommodation Policy

The purpose of a universal absence accommodation policy is to account for emergency circumstances (e.g., serious illness, caring for a family member, car accident) that require you to be absent from class, while maintaining fairness in grading for students who attend and complete all in-class graded assignments. We believe that class attendance and participation are essential for your success in this class, and that your health is important to us and our shared community. Please use good judgement and stay home if necessary/prudent for your circumstances.

This is the universal accommodation policy for in-class graded assignments:

- One missed in-class exam due to absence for any reason is already accommodated in the course grading system. Given that only the best two in-class exams are included in this calculation, a missed exam would be the one not included in this calculation, as it would be the lowest score (0%) of the three exams.

You may provide documentation for an absence, but it is not required. These accommodations are automatically available to all students.

Course Grading System

The standards for each letter grade are listed here according to all required course components. Each student will receive a midterm grade via LOCUS at least one week prior to the Withdraw deadline for the semester. Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

Grading Scheme

Discussion	10% (11/14)
Quizzes (WileyPlus)	10% (9/10)
Unit Exams	50% (best two of three exam grades are recorded)
<u>Final Exam</u>	<u>30%*</u>
Total score	100%

*the final exam is mandatory to earn a passing grade

Letter Grade Cutoffs*:

A	90.0%	C+	65.0%
A-	85.0%	C	60.0%
B+	80.0%	C-	55.0%
B	75.0%	D	40.0%
B-	70.0%	F	< 40%

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 15: NMR
 Chapter 16: Conjugated Systems & Pericyclic Reactions
 Chapter 17: Aromatic Compounds
 Chapter 18: Aromatic Substitution Reactions
 Chapter 19: Aldehydes and Ketones
 Chapter 20: Carboxylic Acids & Derivatives
 Chapter 21: α -Carbon Chemistry
 Chapter 22: Amines
 Chapter 24: Carbohydrates
 Chapter 25: Amino Acids
 Chapter 26: Lipids

Course Topics & Initial Schedule (subject to change)

Lectures and Exams (11:30AM - 12:20PM, Flanner Hall Auditorium)				
Week #	Date	Day	Chapter #	Lecture Topic / Assignment / Activity
1	17-Jan	W	15	Nuclear Magnetic Resonance Spectroscopy
	19-Jan	F	15	Nuclear Magnetic Resonance Spectroscopy
2	22-Jan	M	15	Nuclear Magnetic Resonance Spectroscopy
	24-Jan	W	15	Nuclear Magnetic Resonance Spectroscopy
	26-Jan	F	16	Conjugated Pi Systems and Pericyclic reactions

3	29-Jan	M	16	Conjugated Pi Systems and Pericyclic reactions
	31-Jan	W	16	Conjugated Pi Systems and Pericyclic reactions
	2-Feb	F	16	Conjugated Pi Systems and Pericyclic reactions
4	5-Feb	M	17	Aromatic Compounds
	7-Feb	W	17	Aromatic Compounds
	9-Feb	F	17	Aromatic Compounds
5	12-Feb	M	17	Aromatic Compounds
	14-Feb	W	18	Aromatic Substitution Reactions
	16-Feb	F		Unit Exam 1 - Chapter 15, 16, 17
6	19-Feb	M	18	Aromatic Substitution Reactions
	21-Feb	W	18	Aromatic Substitution Reactions
	23-Feb	F	18	Aromatic Substitution Reactions
7	26-Feb	M	19	Aldehydes and Ketones
	28-Feb	W	19	Aldehydes and Ketones
	1-Mar	F	19	Aldehydes and Ketones
8	4-Mar	M		Spring Break: No classes
	6-Mar	W		Spring Break: No classes
	8-Mar	F		Spring Break: No classes
9	11-Mar	M	19	Aldehydes and Ketones
	13-Mar	W	20	Carboxylic Acids and Their Derivatives
	15-Mar	F	20	Carboxylic Acids and Their Derivatives
10	18-Mar	M	20	Carboxylic Acids and Their Derivatives
	20-Mar	W	20	Carboxylic Acids and Their Derivatives
	22-Mar	F		Unit Exam 2 - Chapter 18, 19, 20
11	25-Mar	M	21	Alpha Carbon Chemistry: Enols and Enolates
	27-Mar	W	21	Alpha Carbon Chemistry: Enols and Enolates
	29-Mar	F		Good Friday: No classes
12	1-Apr	M		Easter Holiday: No classes
	3-Apr	W	21	Alpha Carbon Chemistry: Enols and Enolates
	5-Apr	F	21	Alpha Carbon Chemistry: Enols and Enolates
13	8-Apr	M	22	Amines
	10-Apr	W	22	Amines
	12-Apr	F	22	Amines
14	15-Apr	M	24	Carbohydrates
	17-Apr	W	24	Carbohydrates
	19-Apr	F		Unit Exam 3 - Chapter 21, 22, 24
15	22-Apr	M	25	Amino Acids, Peptides, and Proteins
	24-Apr	W		Revision and Question practice
	26-Apr	F		Revision and Question practice
	1-May	W		Wednesday May 1st, 7:00pm (held with the common exams)

Discussion sessions:

Week #	Date	Day	Time	Class
2	22-Jan	M	1:40PM - 2:30PM	CHEM 224-009
2	22-Jan	M	2:45PM - 3:35PM	CHEM 224-010
2	24-Jan	W	10:25AM - 11:15AM	CHEM 224-011
3	29-Jan	M	1:40PM - 2:30PM	CHEM 224-009
3	29-Jan	M	2:45PM - 3:35PM	CHEM 224-010
3	31-Jan	W	10:25AM - 11:15AM	CHEM 224-011
4	5-Feb	M	1:40PM - 2:30PM	CHEM 224-009
4	5-Feb	M	2:45PM - 3:35PM	CHEM 224-010
4	7-Feb	W	10:25AM - 11:15AM	CHEM 224-011
5	12-Feb	M	1:40PM - 2:30PM	CHEM 224-009
5	12-Feb	M	2:45PM - 3:35PM	CHEM 224-010
5	14-Feb	W	10:25AM - 11:15AM	CHEM 224-011
6	19-Feb	M	1:40PM - 2:30PM	CHEM 224-009
6	19-Feb	M	2:45PM - 3:35PM	CHEM 224-010
6	21-Feb	W	10:25AM - 11:15AM	CHEM 224-011
7	26-Feb	M	1:40PM - 2:30PM	CHEM 224-009
7	26-Feb	M	2:45PM - 3:35PM	CHEM 224-010
7	28-Feb	W	10:25AM - 11:15AM	CHEM 224-011
9	11-Mar	M	1:40PM - 2:30PM	CHEM 224-009
9	11-Mar	M	2:45PM - 3:35PM	CHEM 224-010

9	13-Mar	W	10:25AM - 11:15AM	CHEM 224-011
10	18-Mar	M	1:40PM - 2:30PM	CHEM 224-009
10	18-Mar	M	2:45PM - 3:35PM	CHEM 224-010
10	20-Mar	W	10:25AM - 11:15AM	CHEM 224-011
11	25-Mar	M	1:40PM - 2:30PM	CHEM 224-009
11	25-Mar	M	2:45PM - 3:35PM	CHEM 224-010
11	27-Mar	W	10:25AM - 11:15AM	CHEM 224-011
12	1-Apr	M	1:40PM - 2:30PM	CHEM 224-009
12	1-Apr	M	2:45PM - 3:35PM	CHEM 224-010
12	3-Apr	W	10:25AM - 11:15AM	CHEM 224-011
13	8-Apr	M	1:40PM - 2:30PM	CHEM 224-009
13	8-Apr	M	2:45PM - 3:35PM	CHEM 224-010
13	10-Apr	W	10:25AM - 11:15AM	CHEM 224-011
14	15-Apr	M	1:40PM - 2:30PM	CHEM 224-009
14	15-Apr	M	2:45PM - 3:35PM	CHEM 224-010
14	17-Apr	W	10:25AM - 11:15AM	CHEM 224-011
15	22-Apr	M	1:40PM - 2:30PM	CHEM 224-009
15	22-Apr	M	2:45PM - 3:35PM	CHEM 224-010
15	24-Apr	W	10:25AM - 11:15AM	CHEM 224-011