

Syllabus – Organic Synthesis

Course Instructor

Instructor: Dr. James Devery
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Weekly Schedule

Lecture: M/W 4:15-5:30 PM in Zoom
Office Hours: TBA

Email

You must use your Loyola email address for all communication during this course, especially official communication regarding grades. Emails from outside sources can be blocked by spam filters.

Course Materials

Website: sakai.luc.edu

Course Tools

Zoom, ChemDraw 19, PowerPoint, Scifinder, Reaxys, Web of Knowledge

Grading

Name Reactions (400 points)	400	40%
Class Participation (100)	100	10%
3 Assignments (100 points)	300	30%
1 Paper (100 points)	100	10%
1 Presentation (100 points)	100	10%
Total	1000	100%

Name Reactions

Students will work in groups to research, write, and give a 10 min presentation on an assigned reaction. These presentations will be made available to the class at large.

Class Participation

Students will work together in class on problem sets designed to develop synthetic skills.

Assignments

There are **three** assignments. One will be a group presentation. Two will be problem sets to be completed individually.

Paper and Presentation

A separate guide describing the requirements of the presentation and paper will be provided.

Final Grades

A guideline for grades is shown below. At minimum, you will receive the grade indicated.

A = 93–100%	C+ = 68-72%
A– = 88–92%	C = 63-67%
B+ = 83–87%	C– = 58-62%
B = 78–82%	D = 50-57%
B– = 73–77%	F = 0-49%

Student Accommodations

The Student Accessibility Center (formerly known as Services for Students with Disabilities), Sullivan Center (773-508-3700), www.luc.edu/sswd, has the mission “to serve students with documented disabilities by creating and fostering an accessible learning environment,” including “support[ing] faculty, staff, and administrators on matters such as ADA and Section 504 compliance, as it relates to individuals 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 to present to their instructors: accommodations are not active until students present these letters to their instructors. 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 to your class. The Student Accessibility Center stands ready to work with you.

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. **IMPORTANT:** You must make Devery aware of your request by **Thursday, September 3**. Alternative exam times will be arranged **ONLY** if Devery is notified before this date.

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 (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 take the examination at another time.

(<https://www.luc.edu/athletheadvising/attendance.shtml>)

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:

<http://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, and submitting false documents.

Any instance of dishonesty (including those detailed on the website provided above or in this syllabus) will be reported to The Chair of The Department of Chemistry & Biochemistry who will decide what the next steps may be. **(please specify what the punishments will be for transgressions).**

Dropping and Withdrawal

Be aware of the following dates in the semester:

August 31: Last day to withdraw without a "W" grade

September 6: Last day to withdraw with a 100% Bursar credit

September 20: Last day to withdraw with a 50% Bursar credit

September 27: Last day to withdraw with a 20% Bursar credit

October 30: Last day to withdraw with a "W" grade, thereafter a "WF" will be assigned

Class time

Lecture

Important! Feel free to bring any reference books or modeling kits to class AND USE THEM. Class periods will be the *most critical source* of information for this course. Remember, any questions not addressed during lecture can be addressed via office hours, email, or Twitter. If you miss a period, please get the notes from another student in class.

Class Etiquette

"...treat people the way they want to be treated..."

Come to class on time.

No talking during lecture.

Mute electronic devices.

No eating.

No sleeping.

Students with multiple violations of classroom etiquette will be subject to point deductions throughout the semester.

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.***

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.

Recording of Zoom class meetings

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 course has concluded. *Students will be required to turn on their cameras at the start of class. Students who have a need to participate via audio only must reach out to me to request audio participation only without the video camera enabled.* The use of all video recordings will be in keeping with the University Privacy Statement shown below.

Course Topics

This course will cover the following reaction type in organic chemistry, their mechanisms, and their application in the total synthesis of complex molecules.

Reaction types

Carbon-carbon bond formations

Polar

Radical

Pericyclic

Carbon-carbon bond fragmentations

Polar

Radical

Pericyclic

Isomerizations

Polar

Radical

Pericyclic

Functional group conversions

Protecting groups

Pd-catalyzed cross coupling

Olefin metathesis

Oxidations

Oxidative cleavage

Reduction

Amide bond formation

Concepts

Domino reactions

Diastereomeric transition states

Asymmetric bond formation

Chiral auxiliaries

Asymmetric catalysis

Orbital overlap

Metal-halogen exchange

Woodward-Hoffmann Rules

Baldwin's Rules

Retrosynthesis

Proposing research

Defending hypotheses

Week	Date	Day	Description
1	24-Aug	Mon.	How to research
	26-Aug	Wed.	How to synthesis
2	31-Aug	Mon.	Reactions
	2-Sept	Wed.	Synthesis
3	7-Sept	Labor Day	No Class
	9-Sept	Wed.	Natural Products
4	14-Sept	Mon.	Reactions
	16-Sept	Wed.	Synthesis
5	21-Sept	Mon.	Reactions
	23-Sept	Wed.	Synthesis
6	28-Sept	Mon.	Reactions
	30-Sept	Wed.	Synthesis
7	5-Oct	Mon.	Pd – Week
	7-Oct	Wed.	Pd – Week
9	12-Oct	Mon.	Reactions
	14-Oct	Wed.	Synthesis
10	19-Oct	Mon.	Reactions
	21-Oct	Wed.	Synthesis
11	26-Oct	Mon.	Reactions
	28-Oct	Wed.	Synthesis
12	2-Nov	Mon.	Reactions
	4-Nov	Wed.	Synthesis
13	9-Nov	Mon.	Reactions
	11-Nov	Wed.	Synthesis
14	16-Nov	Mon.	Reactions
	18-Nov	Wed.	Synthesis
15	23-28 Thanksgiving Break		
16	30-Nov	Mon.	Proposals
	2-Dec	Wed.	