

Description: A one-semester-hour laboratory course designed to accompany organic chemistry lecture.

Pre- and Co-requisites: Grade of 'C-' or better in 1 year of General Chemistry Lecture and Lab; Chem 223

Materials: Making the Connections² By Anne B. Padias (ISBN: 978-073804135-3)
Permanently-Bound Composition Notebook

Safety goggles are provided during safety training and must be brought to every lab. A full-length lab coat is also required.

Course Homepage: Announcements, assessments, extra copies of the handouts, the grade book, etc. are posted on Sakai.luc.edu. You are responsible for this material, so you should check Sakai frequently.

Grading: Your course grade consists of the following components:

Information Resources Assignment	10 points
9 Pre-lab Exercises via Sakai, 5 pts each	45 points
10 Results Sheets, 10 pts each	100 points
10 Post-lab Exercises via Sakai, 10 pts each	100 points
2 Summary Quizzes via Sakai, 60 pts each	120 points
<u>Equipment/Synthesis In-Class Exam</u>	<u>75 points</u>
	450 points total

A>94%, A->90%, B+>88%, B>84%, B->80%, C+>78%, C>74%, C->70, D+>68%, D 60%, F<60%

Information Resources Assignment: This assignment is completed via Sakai in order to familiarize students with authoritative, reliable resources to consult for finding physical property data on organic chemicals.

Pre-lab Preparation: Success in organic lab depends on advance preparation. Therefore, there are several things you must do before coming to lab. One major component of your pre-lab assignment is to thoroughly read and understand the experimental procedure and the assigned background reading listed on Sakai. You are responsible for printing out the lab procedures and results sheets and bringing them to lab. Before coming to class, you must complete the pre-lab via Sakai. Students are allowed unlimited attempts until the due date, and assessments must be submitted to count. Work that is saved but not submitted before the deadline will be ignored. Spelling, grammar, and significant figures count. **NO ONE WILL BE ALLOWED TO PERFORM AN EXPERIMENT WITHOUT FIRST COMPLETING THE PRE-LAB EXERCISE WITH A SCORE OF 5/5.** It is highly recommended that you check the Sakai gradebook to ensure the score was successfully recorded before coming to class.

Results Sheets: At the end of each experiment, you must submit a Results sheet before you leave the lab. This sheet summarizes your laboratory results and is posted on Sakai or distributed in class. If a Results sheet isn't turned in before leaving the lab, it can be turned in before the start of the next lab period but it will only be worth half credit. No Results sheets will be accepted after the start of the next lab period.

Post-lab Exercises: Questions pertaining to the experiment you have just completed will be posted on Sakai. These should be completed after lab ends and are due at the beginning of the next lab period. They will have an unlimited time limit, but only **one submission** is allowed. Work that is saved but not submitted before the deadline will receive an automatic 20% deduction. Spelling, grammar, and significant figures count.

Lab Notebook: Students are strongly encouraged to keep a laboratory notebook. The exact style and format of the notebook are up to the students. However, there are some recommendations in the text and posted on Sakai. Keeping an organized lab notebook will greatly facilitate the completion of the pre-labs, post-labs, and Summary Quizzes on Sakai.

Summary Quizzes: The due date for each Summary Quiz will be announced in class and posted on Sakai. Only **one submission** is allowed. The quizzes are not timed, so students may save their work and return to it later, but the quizzes must be submitted to count. Work that is saved but not submitted before the deadline will receive an automatic 20% deduction. Spelling, grammar, and significant figures count.

In-Class Exam: This exam will be done in the lab and will cover the equipment used for all techniques during this course, as well as stoichiometry calculations and other information about the two synthesis experiments performed at the end of the semester. Points will be deducted for not following the instructions.

Re-grades: All requests to have items re-graded must be submitted in writing within one week after the graded materials are returned to the student.

Attendance: You are expected to attend every lab session. Due to safety constraints and size limitations, you will not be allowed to make up an experiment in another lab section. Missing a lab period will result in a zero for all work related to that experiment. However, with appropriate documentation—doctor's note, jury summons, etc.—the exam covering the missed material may be weighed more heavily to account for the missing points. Missing more than 2 experiments will result in automatic failure of the course.

There will be an attendance sheet that students are expected to sign upon entering the lab. It is critical that the attendance sheet exactly match who is present in the lab in the event of an emergency. If you must leave the lab after signing in (e.g. to use the restroom, get a drink of water, etc.) be sure to log your exit on the attendance sheet. For safety's sake, in order to better your results, and to be fair to your lab partner, limit your time out of the lab. Students who leave the lab for a period longer than 10 minutes will receive a point deduction from the Results sheet for that assignment.

Additionally, you must be signed in prior to the start of the pre-lab lecture to ensure everyone's on-time arrival to class. Tardiness or just not signing in will result in a point deduction from the Results sheet for that particular experiment. Students must be present for the pre-lab lecture because important safety-related information is covered. Any student who misses a significant portion of the pre-lab lecture will not be allowed to perform the experiment and will receive a zero for the Results sheet, which cannot be made up.

Safety Rules: Read the safety rules carefully and follow them throughout the course. Anyone who does not adhere to the safety rules will receive point deductions and may not be allowed to remain in the laboratory. You will be provided a pair of safety goggles at the beginning of the course. You must bring your eye protection and lab coat with you to every class, as well as dress in appropriate clothing and footwear. A student may borrow goggles, a lab coat, or socks, but there will be a point deduction from the Results sheet for each item borrowed. These items cannot be borrowed more than once per semester.

Academic Integrity: Each student is expected to do her/his own work. Although the lab is constructed so students may work in pairs during an experiment, all work submitted for a grade must be an individual effort. The penalty for academic dishonesty is a grade of 'F' for the course.

Late Policy: Unless otherwise stated, materials that are submitted late but on the same day as they were due will receive a 10% deduction. There will be an additional 25% deduction for each day or portion of a day, including weekends, they are late after that.

Email: You must use your Loyola email address when contacting the TAs or the instructor for this course. Emails from outside sources are often blocked automatically. In the subject line of your email, put Chem 225-section number and TAs name.

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Experiments

1. Introduction to Functional Groups
2. Boiling Point Determination
3. Melting Point Determination
4. Distillation & Refractive Index
5. Crystallization
6. Extraction
7. Synthesis: Unimolecular Substitution
8. Synthesis: Elimination
9. Chromatography