

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 and Chem 223

Materials: Making the Connections³ By Anne B. Padias_(ISBN: 978-0-7380-7436-8)
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: Course grades consist of the following components:

10 Pre-lab Exercises via Sakai, 5 pts each	50 pts
10 Lab Notebook Preparation, 1 points each	10 pts
Best 10 of 11 Results Sheets, 10 pts each	100 pts
3 Summary Quizzes, 30 pts each	90 pts
Calculations/Equipment Quiz	50 pts
Information Resources Assignment	10 pts
ChemDraw Assignment	10 pts
Lab Notebook	20 pts
Safety Points	<u>10 pts</u>
	350 pts total

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

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. Before coming to class, you must complete the pre-lab exercise via Sakai. Students are allowed unlimited attempts until the due date. Assessments must be submitted to count. The highest submitted score is kept. Work that is saved but not submitted before the deadline will be ignored. Spelling and grammar count.

NO ONE WILL BE ALLOWED TO PERFORM AN EXPERIMENT WITHOUT FIRST COMPLETING THE PRE-LAB EXERCISE.

Results: 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. The lowest Results sheet score will be dropped.

Post-Lab Homework: Short questions pertaining to the experiment you have just completed will be posted on Sakai. These have unlimited attempts and no due date. They are not worth points but should be completed before attempting the Summary Quizzes.

Summary Quizzes: The due date for each Summary Quiz will be posted on Sakai. Only one submission is allowed. Students may save their work and return to it, but the quizzes must be submitted to count. Work that is saved but not submitted before the deadline will not be scored.

Calculations/Equipment Quiz: There will be an in-class quiz that covers laboratory calculations: molarity, unit conversions, number of moles, theoretical yield, percent yield, etc. It will also cover identifying common pieces of glassware and equipment.

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

ChemDraw Assignment: This assignment involves installing and using a software package to draw and analyze different organic molecules. Further instructions and the due date for this assignment will be posted on Sakai.

Lab Notebooks: Lab notebooks will be collected and examined by the TA at the beginning of each experiment. **For safety's sake, students will not be allowed to complete an experiment without a properly-prepared laboratory notebook.** After verifying that it is ready to go, the TA will return the notebook to the student to use for recording the experiment. After the end of the Elimination experiment, the lab notebooks will be collected and the two synthesis labs will be graded.

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 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 summary quiz covering the missed material may be weighted 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 required 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 get better 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 safety point deduction.

Students must be present for the pre-lab lecture because important safety-related information is covered. Any student who misses any portion of the pre-lab safety lecture will not be allowed to perform the experiment and will be marked absent.

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. One time during the semester, a student may borrow goggles, a lab coat or socks. There will be a safety point deduction for each item. 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.

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. Functional Group Tests
2. Boiling Point Determination
3. Melting Point Determination
4. Distillation and Refractive Index
5. Crystallization
6. Extraction
7. Substitution
8. Elimination
9. Chromatography
10. Spectroscopy