

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

Pre-requisites: Grade of C- or better in Chem 223/225

Co-requisite: Chem 224

Materials: Making the Connections<sup>2</sup> By Anne B. Padias (ISBN: 978-073804135-3)  
Laboratory Notebook: Hayden-McNeil (ISBN: 978-1429224543)

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, quizzes, extra copies of the handouts, the grade book, etc. are posted on [Sakai.luc.edu](http://Sakai.luc.edu). You are responsible for this material, so you should check Sakai frequently.

Grading: Course grades consist of the following components:

50 points	10 Pre-lab Notebook Preparations, 5 points each
90 points	Best 9 of 10 Technique/Product Scores, 10 pts each
180 points	Best 9 out of 10 Post-lab Quizzes, 20 pts each
<u>30 points</u>	<u>2 Notebook evaluations</u>
350 Points	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 on Sakai. If you have questions, consult your Teaching Assistant or the Lab Coordinator well before your lab section. Do not wait until the few minutes before class.

Before coming to class, you must also complete the pre-lab portion of your lab notebook. As described in the handout, "Keeping a Laboratory Notebook," this includes the Title, Objective, Outline, Table of Reagents and Initial Calculations.

**NO ONE WILL BE ALLOWED TO PERFORM AN EXPERIMENT WITHOUT FIRST COMPLETING THE PRE-LAB PORTION OF THE NOTEBOOK.**

Notebooks: During the experiment, you will complete the remaining sections of the notebook. At the end of each experiment and before you leave lab, you must hand in the duplicate sheets from your notebook. Twice during the semester—at unannounced times—the notebook pages will be scored.

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. For the first absence, the drop can be used for the resulting zero. Any additional missed work, however, cannot be dropped.

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 lecture will not be allowed to perform the experiment and will be marked absent.**

Technique/ Product Scores: At the end of each experiment, your TA will evaluate the quantity and quality of the product you produce. **Be sure to show your product to your TA before you leave lab.** Safety violations, poor laboratory technique, etc. will result in deductions from the product points.

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.

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: 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. Sakai assignments will not be accepted late.

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 226-section number and TAs name.

Eye Protection and Lab Coats: You will be provided a pair of safety goggles at the beginning of the course, but you must purchase your own lab coat. You must bring both of these items with you to every class. If you forget to bring them, we have a few available to borrow, but you will receive point deductions for unpreparedness.

Electronic Devices: For safety's sake and in order to prevent contamination, the use of cell phones, laptop computers, MP3 players, etc. is not permitted in the lab. Use of these devices in lab will result in the student not being allowed to perform the experiment.

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## Experiments

1. Acid-Catalyzed Dehydration of Cyclohexanol
2. Potassium Permanganate Oxidation of Benzyl Alcohol
3. Structural Effects on Acidity
4. Sodium Borohydride Reduction of Benzophenone
5. Diels-Alder Reaction of Anthracene and Maleic Anhydride
6. Electrophilic Aromatic Substitution
7. Ketone Derivatives
8. Acetylation of an Amine
9. Fischer Esterification
10. Polymers