

Chemistry 226 Syllabus
Spring 2014

Organic Chemistry Laboratory B

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

Pre- and Co-requisites: Chem 223/225 and Chem 224, respectively.

Materials: Pearson Custom Laboratory Notebook
CHEM 226, Spring 2014 Edition; Pearson/ Prentice Hall.

Organic Chemistry Laboratory Techniques
Pearson Custom Library (ISBN: 1-269-24635-6)

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. You are responsible for this material, so you should check Sakai frequently.

Grading: Course grades consist of the following components:

200 points	2 In-class exams
50 points	10 Pre-lab Quizzes, 5 pts each
180 points	9 Technique/Product Scores, 20 pts each
50 points	Notebook Pages for 2 Experiments, 25 pts each
<u>20 points</u>	<u>Spectroscopy Assignment</u>
500 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. 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.

Chemistry 226 Syllabus
Spring 2014

Pre-Lab Quizzes: Experiments will begin with a short pre-lab quiz. Students who arrive late will not be given extra time. Students may use their laboratory notebooks on quizzes.

Notebook: 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. The pages will be placed into personal envelopes and used for the two in-class exams. For 2 out of the 9 experiments, the notebook pages will also be graded to ensure everyone is properly documenting the experiments. The 2 experiments will be chosen by the lab instructors at any point during the semester without prior warning, so be sure to be prepared for this every week.

Exams: While completing the written exams, you may use the duplicate sheets from your notebook that you have deposited with your TA each week and your own calculator. However, sharing of calculators and using a phone during an exam is not allowed.

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

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.

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. In the event of an unavoidable absence, an alternative assignment will be provided by the lab coordinator to replace the missing points. A student can only complete one alternative assignment for credit during the semester.

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.**

Safety Rules: Read the safety rules carefully and follow them throughout the course. Violating safety rules will result in a loss of points for the Technique/Product Score for that experiment and may also result in a student being asked to leave 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.

Chemistry 226 Syllabus
Spring 2014

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: You will be provided a pair of safety goggles at the beginning of the course. You must bring your eye protection with you to every class. For several reasons—especially hygiene—you also may not borrow eye protection from your TA or the chemistry stockroom.

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.

Zero-Tolerance Policy on Safety: Safely working with organic chemicals requires your complete attention. One important part of lab safety is the pre-lab lecture at the beginning of class-- when the TAs and the instructor discuss the chemicals that are going to be used that day. You must pay careful attention during the pre-lab. Activities that indicate that you are not paying full attention will result in you not being allowed to perform the experiment. Such activities include talking to classmates, using one's phone or other electronic devices (which are not allowed in lab), sleeping, doing homework, etc.

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Experiments:

1. Sodium Borohydride Reduction of Benzophenone
2. Potassium Permanganate Oxidation of Benzyl Alcohol
3. Structural Effects on Acidity
4. Diels-Alder Reaction of Anthracene and Maleic Anhydride
5. Nitration of *N*-acetyl-*p*-toluidine
6. Ketone Derivative
7. Acylation of an Aromatic Amine
8. Fischer Esterification
9. Equilibrium Constant Determination/ Synthesis of Nylon

Schedule: Organic Chemistry Laboratory B, Chemistry 226, Spring 2014

Tentative: Subject to Change

January

Monday	Tuesday	Wednesday	Thursday	Friday
13 Introduction	14 Introduction	15 Introduction	16 Introduction	17 Introduction
20 MLK DAY	21 Spectroscopy	22 Spectroscopy	23 Spectroscopy	24 Spectroscopy
27 Reduction	28 Reduction	29 Reduction	30 Reduction	31 Reduction

February

3 Oxidation	4 Oxidation	5 Oxidation	6 Oxidation	7 Oxidation
10 Acidity	11 Acidity	12 Acidity	13 Acidity	14 Acidity
17 Diels-Alder	18 Diels-Alder	19 Diels-Alder	20 Diels-Alder	21 Diels-Alder
24 Exam 1	25 Exam 1	26 Exam 1	27 Exam 1	28 Exam 1

March

3 BREAK	4 BREAK	5 BREAK	6 BREAK	7 BREAK
10 Nitration	11 Nitration	12 Nitration	13 Nitration	14 Nitration
17 Ketones	18 Ketones	19 Ketones	20 Ketones	21 Ketones
24 Acylation	25 Acylation	25 Acylation	28 Acylation	29 Acylation
31 Esters				

April

	1 Esters	2 Esters	3 Esters	4 Esters
7 K_{eq} / Nylon	8 K_{eq} / Nylon	9 K_{eq} / Nylon	10 K_{eq} / Nylon	11 K_{eq} / Nylon
14 Exam 2	15 Exam 2	16 Exam 2	17 EASTER	18 EASTER
21 EASTER	22 NO LAB	23 NO LAB	24 Exam 2	25 Exam 2