

Lab Syllabus: basic techniques

Organic Chemistry I, Fall 2008

Faculty contact information

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hours: M 1:30-2:30, T/Th 10:30-11:30, F 9:00-10:00 and by appointment

Introduction

This semester is the first of a two-semester laboratory series. This semester, we will focus on the basic organic chemistry laboratory techniques of isolation, characterization and synthesis as well as experimental design and drawing conclusions from data. Next semester, you will use these techniques in a guided independent project.

Goals

- 1 To be able to carry out basic organic laboratory manipulations that can be used in future research, jobs and education.
- 2 To recognize that our current scientific understanding of the world around us comes from experiment.
- 3 To learn techniques for laboratory safety.
- 4 To improve scientific writing and communication skills.
- 5 To work with classmates to solve a problem as a group.

Texts

There are no texts for this class. However, we will use an on-line resource to learn basic techniques. The website is <http://orgchem.colorado.edu/hndbksupport/ochemlabtech.html> and specific readings and movies will be assigned each week.

You will need to purchase goggles and a composition book for lab. You may wear a labcoat if you wish, but it is not required.

Lab Accessibility

If you have a documented learning disability or other situation that limits your access or ability to participate in class or lab, please discuss the situation with me as soon as possible so we can make appropriate arrangements. Assistance with accommodations can also be found at the Office of Student Life, room 111 Reid Centennial Hall.

Email contact and the website

Your campus e-mail account is the official method of communication between the college and yourself and so you should check your account daily. If you have trouble accessing your account, make sure you work out the problems as soon as you can by calling or stopping by the computer help desk (located at SGC B102 or phone 792-2231). On BlackBoard, you can find this syllabus, handouts and lectures.

Lab Safety

Lab safety is of paramount importance. Come to lab appropriately attired (wear pants, closed-toe shoes and your safety glasses) and alert. You will be made aware of safety issues pertinent for each lab. Anyone not following safety protocols will be asked to leave the laboratory. There will be a complete safety orientation the first day of lab.

Assignments

Attendance and participation

Both attendance and your full participation are vital components of the lab and your lab grade (see grade distribution below). Our lab time is in the late afternoon, when people are often tired and hungry. This is problematic because your full attention is needed to make your lab experience useful and safe. Make sure that you are prepared to focus for three hours.

You will receive full credit for the attendance and participation portion of your grade if you are on-time and present at all laboratories. One excused absence will not effect your grade.

Lab "ticket"

Before each lab, you will read the assignment and answer a series of preparative questions. *You must hand in the answers to these questions at the beginning of lab or you will not be able to attend the lab.*

Notebooks

The goal of a notebook is to record you process and observations so that you and others can reproduce your experiment. The notebooks will be checked during lab quizzes.

Write-ups and report sheets

Due a week after the completion of each lab, you will hand in write-ups and report sheets. In the beginning, the write-ups will be descriptions of techniques. You can also expect to write lab reports, essays and letters. The report sheets will be selected questions that you have the answers to in your notebooks. Your partner and you can hand in a single write-up and report sheet.

Lab quizzes

There will be five-15 minute quizzes at the beginning of roughly every third laboratory. Each lab quiz will test laboratory vocabulary, concepts and manipulations.

Grade distribution

Attendance and participation 40% Lab tickets 10% Notebooks 20% Write-ups and report sheet 10% Lab quizzes 20%

Grading scale

93-100%	A	83-86%	B	73-76%	C	60-66%	D
90-92%	A-	80-82%	B-	70-72%	C-	<60%	F
			C				

Plagiarism Policy

The vast majority of students are honest. However, in the rare instance that plagiarism (or cheating, fabrication or collusion) is apparent, it will be dealt with in accordance with college policy. You will be given full credit for being honest about your results, whether they are right or not.

Timeline

	DATE	LAB
1	8/26	Check-in/safety and orientation Essential skills lab 1: safety, basic equipment, heating things up, stirring things, measuring melting points and boiling points and the laboratory notebook.
2	9/2	Essential skills lab 2: recrystallization and filtration
3	9/9	Quiz 1 Lab 2 continued
4	9/16	Essential skills lab 3: Extraction, drying, rotovapping and FTIR
5	9/23	Lab 3 continued
6	9/30	Quiz 2 Essential skills lab 4: Distillation
7	10/7	Essential skills lab 5: TLC and column chromatography
8	10/14	Lab 5 continued
9	10/21	Quiz 3 Lab 5 continued
10	10/28	Lab 5 continued
11	11/4	Essential skills lab 6: Molecular modeling and ChemDraw
12	11/11	Quiz 4 Essential skills lab 7: Synthesis
	11/18	Essential skills lab 7: Synthesis
13	11/25	<i>Fall break – no class</i>
14	12/2	Essential skills lab 7: Synthesis
15	12/9	Quiz 5 Finish up labs, clean up