



Lehman College
City University of New York
Department of Chemistry



Essentials of Organic Chemistry Laboratory
CHE 121
Spring 2019

Instructor: Dr. Radhashree Maitra

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Office Hours: Thursday 11:00 a.m. -12 noon (pls email for appointment)

Course Description: CHE 121: Essentials of Organic Chemistry Laboratory

- One laboratory of 3 hours per week / 1.5 credits.
- Introduction to laboratory experimentation to familiarize students with basic synthesis and analysis of organic molecules

Prerequisite: CHE 115 & 120 | **co-requisite:** CHE 120

Place of course in degree program:

This laboratory is a requirement for various Health Sciences programs.

Academic or Learning Objectives:

Student Learning Outcomes: After completing this laboratory students should be able:

- - Understand the structure of organic molecules
- - Use qualitative chemical tests and theory to solve problems
- - Perform and identify basic organic reactions
- - Effectively record data and observations to be able to solve problems

Required Readings:

Essentials of Organic Chemistry – Custom Edition for Lehman College. Karen C. Timberlake. (ISBN-13: 978-1-323-72182-7) Boston 2018

The lab manual is available only in the Lehman College book store with a molecular modeling kit as one package.

Other Materials:

1 Padlock

Attendance Policy:

The attendance to the laboratory is compulsory. **No make-up laboratories will be given.** **A student cannot miss more than TWO laboratories.** A student will not receive a passing grade if more than two laboratories are missed.

Course Requirements and Grading:

A student's grade in the CHE 121 class will be determined from a combination of grades given for laboratory reports and grades obtained from attendance to the laboratory. Each laboratory report will be graded from 0 to 20. **The student's laboratory report grade will be determined by dropping the lowest grade of the eleven laboratory reports and averaging the remaining grades.** The student's final grade will be calculated by summing 90% of the laboratory report average with 10% of the attendance average. In the event a student is absent, a grade of zero will be earned. This zero can then be counted as one of the dropped grades for a laboratory report. Lateness will be defined as arriving 35 minutes after the beginning of the scheduled laboratory time. Showing up on time and wearing the appropriate safety equipment is essential for you to be able to complete the lab and receive the points! Please do not be late! ***Laboratory reports have to be completed and submitted to the instructor by the end of the laboratory period.***

While attendance is compulsory all students MUST attend and complete the checkout day in order to receive attendance credit for the entire semester.

F and WU policy:

If a student stops attending before the end of the semester and does not come to the checkout session in week 14, a **WU** will be awarded. A grade of **F** will be awarded if a student misses more than 2 lab sessions and attends the check out in week 14.

Accommodating Disabilities:

Lehman College is committed to providing access to all programs and curricula to all students. Students with disabilities who may need classroom accommodations are encouraged to register with the Office of Student Disability Services. For more information, please contact the Office of Student Disability Services, Shuster Hall, Room 238, phone number, 718-960-8441.

The Science Learning Center (SLC):

The Science Learning Center (SLC) is the tutoring center on campus. The SLC provides drop-in tutoring for natural and computer science courses. To obtain more information about the SLC, please visit their website at <http://www.lehman.edu/issp>, or please call the Academic Center of Excellence (ACE) at 718-960-8175,

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Classroom Policy:

- **SAFETY GLASSES MUST BE WORN AT ALL TIMES IN LABORATORY!** Students without **SAFETY GLASSES will be not allowed to work in the laboratory.**
- **Food policy: FOOD and DRINKS are STRICTLY PROHIBITED** in the chemistry laboratory.
- **Required Equipment (to be provided by the student):** padlock; detergent; paper towels
- Upon arrival to the laboratory the pre-laboratory (*Pre-Lab Study Questions*) will be graded (2 points out of 20 total points). In order to receive these points you have to
 1. Hand the prelab to your instructor as soon as you enter the laboratory: **ZERO POINTS WILL BE GIVEN IF YOU DON'T SUBMIT THE PRE-LAB AT THAT MOMENT.**
 2. Be on time! **STUDENTS ARRIVING LATE CAN ONLY EARN HALF OF THE PRE-LAB SCORE**
 3. Wear safety glasses for the entire time you are in the laboratory. The lab has a 3-strike policy regarding safety glasses: **If your instructor has to tell you to wear your safety glasses 3 times you will only earn half of the Pre-lab score. !!PLEASE WEAR YOUR SAFETY GLASSES!!**
- During the first 15-35 minutes of the laboratory a lecture will be given related to the experiment to be done that day. If you miss the lecture, you will not be allowed to do the experiment. **THERE IS NO LABORATORY MAKE-UP.**
- The experiment will be performed in pairs. The laboratory reports (*Report Sheets* from your laboratory manual) will be submitted individually at the end of the laboratory period.

Academic Integrity:

See the Lehman Undergraduate Bulletin.

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Course topics:

The following topics will be covered:

Molecular geometry and structure, Addition reactions, Esterification Reactions, Chromatography, Polymerization, Reduction and Oxidation reactions, Hydrolysis reactions, Properties of biologically relevant molecules

CHE 121 Essentials of Organic Chemistry Laboratory

2019 Spring Semester

Please Note: This schedule is subject to minor change so that course material can be best presented.

All reading and pre-lab assignments are to be completed before class.

EXPERIMENTS

Week Number	Page Numbers	Experiment Title
1	1-8	Safety, Check in, Waste Disposal
2	9-24	Organic Compounds: Alkanes (A*, B, & C) Bring your modelling kit!
3	25-30	Reactions of Unsaturated Hydrocarbons (A, B, C, & D) Bring your modelling kit!
4	31-40	Aspirin and other Analgesics: A – Preparation of Aspirin
5	31-40	Aspirin and other Analgesics: B & C
6	41-50	Plastics and Polymerization: D – Preparation of Nylon
7	<i>Handouts</i>	<i>Functional groups and identification of unknowns: Alcohols and carbonyl compounds</i>
8	59-68	Tests for carbohydrates (A, B, C & D)
9	69-76	Saponification and Soaps (A & B)
10	77-84	Amino Acids: (A & B) Bring your modelling kit!
11	85-94	Peptides and Proteins (C, D, & E)
12	<i>Handouts</i>	<i>Enzymes</i>
13	95-104	Vitamins (A & B)
14		Check out

Important information for Week 14 – Check out

During the last week of class, students perform a 'check out' procedure. This must be completed in order to receive the attendance score for the course.

1. Remove everything from the drawer.
2. Clean the drawer and re-line it with clean paper towels.
3. Inventory equipment:
 - a. Take excess equipment to the stockroom (excess equipment must be **LABEL FREE, CLEAN, and DRY**).
 - b. Replace any missing items from the stockroom.
4. Be sure all glassware is **CLEAN, DRY and FREE OF LABELS**.
5. Place equipment on bench in the order it is listed on the check-out sheet.
6. Ask the instructor to check your equipment.
7. When approved, place equipment in your drawer.
8. Place a college lock on the drawer.

VERY IMPORTANT NOTE

Departmental missing lab policy states that the attendance to the laboratory is compulsory. A student cannot miss more than **TWO** laboratories. For the case of missing more than two laboratories the student will not receive a passing grade.

What does this policy mean?

If the students stop attending the labs before the end of the semester and they never come back, they should receive a **"WU"** and NOT an **"F"**. On the other hand, if they are there for the last lab but they missed 3, 4 or 5 labs they are getting the Fs. However, after the student missed the 3rd lab they will be informed again about this policy and it will be made clear to them that they cannot get a passing grade.