

**HOSTOS COMMUNITY COLLEGE**  
**NATURAL SCIENCE DEPARTMENT**  
**PHYSICAL SCIENCE UNIT**  
**CHE 312 - ORGANIC CHEMISTRY I LABORATORY**

**2 Credits, 4 Hours**

**Course Description :** This course will provide the student with a thorough understanding of the basic concepts of organic chemistry laboratory. They will learn the different quantitative extraction and purification procedures of organic analysis at pilot experiments. Students will become familiar with the understanding of chemical phenomena, hydrocarbons, stereochemical (3-dimensional) aspects of structure; strategies of organic synthesis will be emphasized by means of hand-on experiments. This course is intended for chemistry, biochemistry, molecular biology, chemical engineering, and other students on scientific or professional career paths.

**Course Objectives :** By the end of the course, students will:

- Know the principles of organic chemistry: naming, reaction mechanism, physical and chemical properties of the different organic chemistry families.
- Recognize organic compounds based in the principal functional groups.
- Reinforce their independent study skills.
- Understand the reaction mechanisms of synthesis and addition in organic chemistry.
- Analyze the biological and chemical implications of oxidation and reduction of organic compounds
- Use IR, UV, NMR and Mass spectroscopy for characterization purposes of organic compounds

**Prerequisite or Co-Requisite :** CHE 310

**Required Manual :** EXPERIMENTAL ORGANIC CHEMISTRY: A Small-Scale Approach, 2nd Ed., C.F. Wilcox, Jr. and M.F. Wilcox, Prentice Hall, Inc.

**Instructor:**

**Room :**

**Office Hours**

**Laboratory Notebook :** All lab work must be recorded directly in a lab notebook which must be brought each week along with the lab manual. Recording data on isolated sheets of paper is not acceptable. The information in the lab notebook will form the basis of the lab reports required after completion of each experiment.

## Laboratory Schedule

Week	Experiment	Section, Pages	Read Pages
1	Introduction, Check-in,	1.1-6, 1-6	1-10
2	Distillation of a mixture	5.4B, 66-67	43-68
3	Extraction: separation of benzoic acid and acetonitrile	9.7 B, 117	103-121
4	S <sub>N</sub> 1 Reactions - Preparation of tert-butyl chloride		
5	Alkenes, E <sub>1</sub> and E <sub>2</sub> preparation of 2,4,4-trimethyl-1- and -2-pentenes (diisobutylenes)	18.3 IC, 315-316	309-316
6	Oxidation of Alcohols to Ketones : Cyclohexanone by hypochlorite oxidation	21.5 C, 332	327-333
7	Nitration of Aromatic Compounds Preparation of ortho- and para-nitrophenol	25.3 B, 355- 356 33.2 A, 394	353-357 392-396
8	<b>Midterm Exam</b> GC; complete previous experiments		
9	Aldol Condensation Properties of dibenzalacetone	34.2 A., 399	397-400
10	Ferrocene and Acetylferrocene Preparation of acetylferrocene/Piperine from Black Pepper (Handout)	42.2 D, 446	441-448
11	Analgesics and Anesthetics Aspirin synthesis	49.2 A, 486	485-491
12	IR, complete previous experiments, recrystallization Carbanions/Limonene( <i>R</i> )- <u>enantiomer</u> from Lemon	36.2 A-B, 408-409	406-410
13	(Handout)		
14	Grignard Reaction Preparation and reaction of triphenylmethanol/ Identification of different alcohols (Handout)		
15	<b>Final Exam and Equipment check-out</b>		

**Laboratory Reports :** Each lab report is due the week following the completion of the experiment. The required format is attached to this syllabus.

**Before Lab** : Read through the instructions for the lab experiment and answer the questions at the end of the chapter.

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**At Lab** : Work through the experiment following the procedure in your lab manual and any modifications described by your instructor.

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**Lab Report Format** : After each lab you will complete a typed report describing your major observations and findings. The length of the report will vary depending on the lab. There should be enough detail to allow someone to duplicate your experiments. The report should be typed with a separate title page and the following sections:

Introduction

Procedure

Results

Discussion

Conclusions

**Exams** : There will be two scheduled exams (midterm and final) and 6 unannounced quizzes given at the beginning of the period. The lowest quiz grade will be dropped.

**Grading** :

Lab reports : 50% (lowest grade will be dropped)

Quizzes (6) : 10% (lowest grade will be dropped)

Midterm : 10%

Final : 20%

Evaluation : 10%

The grade of Incomplete (I) is given in regular courses upon request of the student for personal emergencies that are verifiable. The faculty member has the responsibility to provide Inc grade only to those students **who are passing the course**. The student has the responsibility to take the initiative in completing the work, and is expected to make up the incomplete during the first semester in residence after receiving the grade of Incomplete. If the student does not make up the incomplete during the following semester after receiving it, **an F grade may be given by the faculty member without further consultation with the student.**

If after the end of the first semester the Inc remains on the record it will be designated as an F and will be computed in the student's GPA.

<b>Grade</b>	<b>GPA Value</b>
A	93-100% 4
A <sup>-</sup>	90-92% 3.7
B <sup>+</sup>	87-89% 3.3
B	83-86% 3
B <sup>-</sup>	80-82% 2.7
C <sup>+</sup>	77-79% 2.3
C	70-76% 2
D	60-69% 1
F	below 60% 0

There is no R grade in this course.

**Lecture and Recitation Participation :** Your participation in class is an important part of the final grade. These portions of the grade are based primarily on attendance, participation in class discussions and team projects, and on general cooperation in the learning process. For each class you miss, you will lose participation points. If you miss 10% or more of the term, you will fail the course.

**Academic Integrity :**

Hostos Community College believes that developing student's abilities to think through issues and problems by themselves is central to the educational process. Since the Hostos College degree signifies that the student knows the material s/he has studied, and the practice of academic dishonesty results in grades or scores that do not reflect how much or how well the student has learned, understood, or mastered the material, the College will investigate any form of academic dishonesty brought to its attention. If the charge of academic dishonesty is proved, the College will impose sanctions. The three most common forms of academic dishonesty are cheating, plagiarism, and bribery.

In the collegiate setting, cheating is defined as the purposeful misrepresentation of another's work as one's own. Faculty and students alike are responsible for upholding the integrity of this institution by not participating either directly or indirectly in act of cheating and by discouraging others from doing so. Plagiarism is a form of cheating which occurs when persons, even if unintentionally, fail to acknowledge appropriately the sources for the ideas, language, concepts, inventions, etc. referred to in their own work. Thus, any attempt to claim another's intellectual or artistic work as one's own constitutes an act of plagiarism. In the collegiate setting, bribery involves the offering, promising, or giving of items of value, such as money or gifts, to a person in a position of authority, such as a teacher, administrator, or staff member, so as to influence his/her judgment or conduct in favor of the student. The offering of sexual favors in exchange for a grade, test score, or other academic favor, shall be considered attempted bribery. The matter of sexual favors, either requested or offered, in exchange for a grade, test score or other academic favor, shall also be handled as per the Sexual Harassment procedures of the College. If you are suspected of plagiarism or cheating or if you attempt to bribe or influence your professor, you will be immediately reported to the college's Academic Integrity Officer. You will be unable to drop the class. The penalties range from an F with a score of 0 for an assignment to Failure for the entire term to expulsion from The City University of New York. Students are expected to attend all class meeting in the courses for which they are registered. Classes begin at the times indicated in the official schedule of classes. Arrival in class after the scheduled starting time constitutes lateness. The maximum number of absences is limited to 15% of the number of scheduled class hours per semester and a student absent more than the indicated 15% is deemed excessively absent. Attendance is monitored from the first official day of classes. In the case of excessive absences or lateness, the instructor has the right to lower the grade, assign a failing grade, or assign additional written work or readings. Absences due to late registration, change of program, or extenuating circumstances will be considered on an individual basis by the instructor. Each department and program may specify in writing a different attendance policy. Instructors are required to keep an official record of student attendance and inform each class of the College's or Department attendance policy.